

CrazyTalk Animator 3 User Manual

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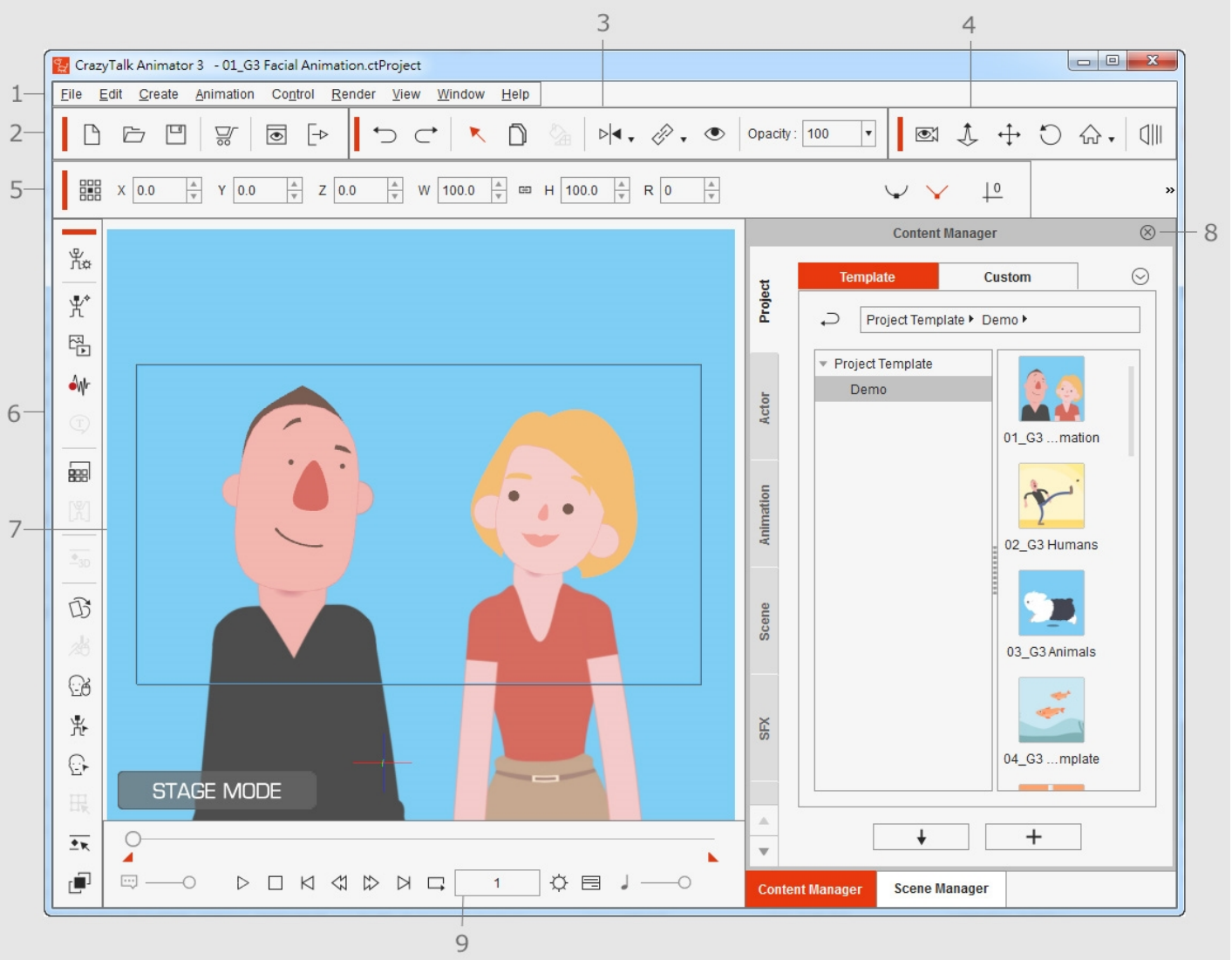
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Knowing the Environment

The main user interface of **CrazyTalk Animator 2** is divided into 9 parts. Please refer to the links below for more details about each part.



	Name	Description
1	Main Menu	The main menu contains each command in **CrazyTalk Animator**.
2	Project Tool Bar	There are buttons for you to save, open or create a new project, preview an image of the current frame, or export your project.
3	General Tool Bar	The tool bar is able to undo and redo actions, select characters or objects, merge selected props, duplicate characters or objects, and set flip, link, visible or opacity keys to the selected characters or objects.
4	Camera Tool Bar	The tool bar contains buttons to switch between Preview Camera Mode and Live Camera Mode, zoom in and out of the scene, pan or rotate the camera, switch to different view modes of the camera, or enter the 3D mode.
5	Property Tool Bar	Contains property tools for transforming actors, props, sprites or effects to enhance the details of the 2D/3D animation result.
6	Functional Tool Bar	The left-side tool bar can switch to **Composer Mode**, create characters and objects, add voice clips for the characters to generate motions with, modify the text, modify the render style and runtime setup for the characters, or invoke the **Action Menu Editor**, **Sprite Editor**, **Puppet Editor**, **2D and 3D Motion Key Editor**, **Layer Editor** panels.
7	**Preview Window** (Working Area)	The characters and props in the scene as well as the export range bounded in the **Safe Area** can be observed in the **Preview Window**.
8	Content Manager (F4) and Scene Manager (F5)	The **Content Manager** keeps embedded and custom content you can apply to your scene, and the **Scene Manager** displays all the characters or objects included in the current project.

9	**Play Bar**	The **Play Bar** contains basic playback tools for previewing actor voice, motions, and project background music, as well as buttons to bring up the **Project Settings** and **Timeline** panels.

Main Menu

Stage Mode

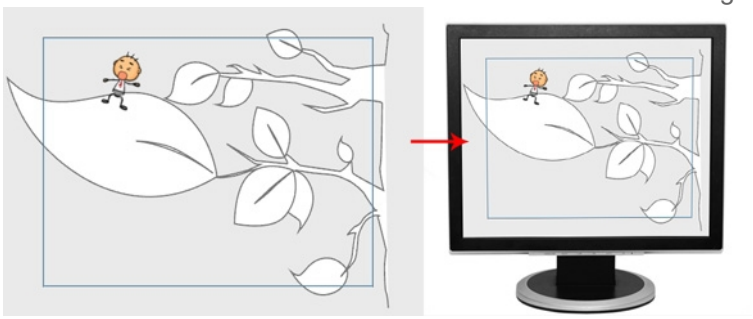
The **Main Menu** contains the main commands grouped in the **File**, **Edit**, **Create**, **Animation**, **Control**, **Render**, **View**, **Window** and **Help** menus.



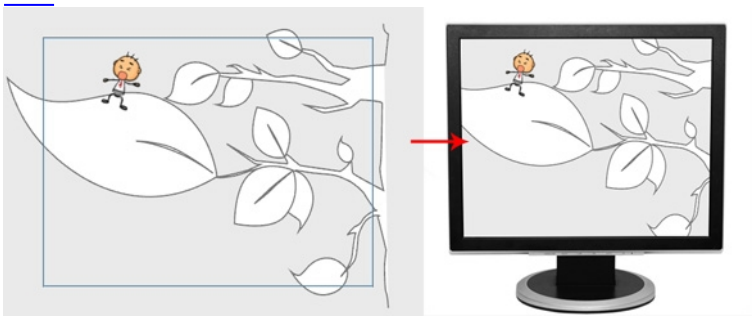
	Name	Description
1	**File**	• To create an empty project, save or open a **CrazyTalk Animator** project file (*.ctProject). • To switch to the character or prop **Composer Mode**. • To convert between props and scene objects. • To import a **CrazyTalk Animator** model (*.ctActor) or character animation (*,ctMotion, *.ctPerform, *.ctFcs, *.ct3DMotion, *.iMotion) or prop motion (*.ctAnim). (Only **Pipeline** version can support *.iMotion)
2	**Edit**	• To undo (Ctrl + Z) or redo (Ctrl + Y) the last operation. • To select or duplicate characters, props or objects. • To set flip, link, visible or opacity keys to the selected characters, props or objects. • To perform **Timeline** commands (loop, speed, break) or set the 3D motion options, align angle, extend clip length for the selected **Motion Clip**. • To adjust the 3D motion settings for the selected actor. • To invoke the **Project Settings** and **Preference** panels.
3	**Create**	• To create the actor face from an image file (*.jpg, *.png, *.bmp). • To load the media material for props, image layers or background from image files (*.jpg, *.jpeg, *.bmp, *.gif, *.png, *.tga, *.gif) or video files (*.avi, *.wmv, *.rm, *.rmvb, *.mpeg, *.mpg, *.mpe, *.mp4, *.asf, *.asx, *.wm, *.flv, *.mov, *.popvideo, *.swf). • To import sounds or background music from an audio file (*.wav, *.mp3). • To create a script for the selected actor by recording voice, **Text-to-Speech Editor**, loading an audio file (*.wav, *.mp3) or **CrazyTalk** script file (*.ctFcs, *.cts, *.clp, *.ct7script, *.ct7motion). • To launch the **Render Style** and **Runtime Composer** panels.
4	**Animation**	• To launch the **Action Menu**, **Action Menu Editor**, **Sprite Editor**, or **Layer Editor** panel for the selected actor, prop, or object. • To launch the **2D Motion Key Editor**, **3D Motion Key Editor**, **Puppet Editor**, **Motion Key Editor**, and **Lips Editor** panels for the selected actor. • To show the **Prop Key Editor** on the **Property Tool Bar** for the selected sprite of the prop. • To launch the **Text Editor** or **Sound Modify** panel. • To set keys for the selected prop or scene object on the **Property Tool Bar**. • To add keys on the selected track (Transform, Flip, Facial Layer, Face Motion) (**Pipeline** and **Pro** only), or set a transform key for the object back to the origin size and position (0,0,0) of the scene. • To align the selected motion clip data (root, head, right/left hand, or right/left leg) to the previous clip. • To insert extra frames to the current project or add flags in the **Collect Clip** track of **Project** on the **Timeline**. (**Pipeline** and **Pro** only) • To remove motion clips of the selected actor or remove all animation data in the current project.
5	**Control**	• To perform **Play Bar** commands, playback, pause, stop, or jump to the start, end, previous or next frame. • To turn on/off the voice or music volume in the current project. • To snap the 3D motion angle to the previous motion clip. • To snap the object movements to the grid line. • To toggle to orthographic camera or enter the camera record mode. • To enter the **Camera Record Mode**.
6	**Render**	• To preview the output image of the current frame. • To export the current project as audio, video or image files. • To export one or more objects as a transparent **PNG** or **Animated GIF** file into the clipboard.

7 View

- To show/hide the on-screen display (FPS, grid line, world axis, stage/composer mode display).
- To enter the full screen mode (F11 and F12).
  - **Full Screen Mode**: To enter the full screen mode while showing the safe area.



  - **Full Screen Mode w/o Safe Area**: To enter the full screen mode while hiding the safe area.



- To perform the **Camera Tool Bar** commands, zoom in / out of the scene, pan or rotate the camera, switch to the different view modes of the camera, or enter the 3D view mode.

8 Window

- To restore all the tool bars and panels to the default docking places.
- To show / hide the tool bars, **Timeline**, **Content Manager** and **Scene Manager** panels.

9 Help

- To launch the Help document, go to the official web page for demo videos or tutorials, or view the product FAQs and get further assistance.
- To login with the member account.
- To check for available program updates.
- To access the **City Marketplace** of **CrazyTalk Animator**.
- To get free bonus content or purchase trial content.
- To activate the content you have paid for or verify all of your content in the **Template** and **Custom** libraries.
- To access the home page of **Reallusion** or **CrazyTalk Animator**.
- To show the product information for **CrazyTalk Animator**.

Composer Mode

The **Menu** contains the main commands grouped in **File**, **Edit**, **Modify**, **Face Editor**, **View**, **Window** and **Help** menus.

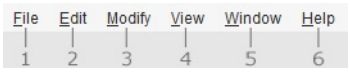


	Name	Description
1	File	• To import a **CrazyTalk Animator** actor file (*.ctActor) or save the current actor as a **CrazyTalk Animator** actor file (*.ctActor). • To switch back to the **Stage Mode**. • To exit **CrazyTalk Animator**.
2	Edit	• To undo (Ctrl + Z) or redo (Ctrl + Y) the last operation. • To toggle the **Transform Part** tool. • To switch between the **Transform Sprite** and **Transform Bone** tools (**G3 or Free Bone Characters**). • To select sprites, attach props to sprites. • To add joint masks and switch the color of joint masks (**G2 Characters**). • To show / hide or snap connecting points. Please refer to the Setting Connection Points section

		for more information (**G1 and G2 Characters**).
3	**Modify**	• To launch the **Preference** panel. • To load an actor swf file. • To enhance the actor details on sprite layers and joint masks. • To launch the **Confirm Multi-angle Settings**, **Actor Proportion**, **Render Style** and **Sprite Editor** panels. • To carry out face or body calibration and launch the **Calibration** panel.
4	**Face Editor**	• To load an image file (*.jpg, *.png, *.bmp) to create a new face for the current actor. • To adjust the color of the face image, fine tune the face fitting result and the face angle. • To modify the applied eyes and teeth templates, or customize the eyes and teeth for your actor.
5	**View**	• To show / hide the on-screen display (FPS, grid line, world axis, stage / composer mode display). • To perform the **Camera Tool Bar** commands, zoom in / out of the scene, pan or rotate the camera, switch to the different view modes of the camera.
6	**Window**	• To restore all the tool bars and panels to the default docking places. • To show / hide the tool bars, **Content Manager** and **Scene Manager** panels.
7	**Help**	• To launch the Help document, go to the official web page for demo videos or tutorials, or view the product FAQs and get further assistance. • To login with the member account. • To check for available program update. • To access the **City Marketplace** of **CrazyTalk Animator**. • To get free bonus content or buy all trial content. • To activate the content you have paid for or verify all of your content in the **Template** and **Custom** libraries. • To access the home page of **Reallusion** or **CrazyTalk Animator**. • To show the product information for **CrazyTalk Animator**.

Composer Mode - Prop

The **Menu** contains the main commands grouped in **File**, **Edit**, **Modify**, **View**, **Window** and **Help** menus.



	Name	Description
1	**File**	• To import a **CrazyTalk Animator** prop file (*.ctProp). • To switch back to the **Stage Mode**.
2	**Edit**	• To undo (Ctrl + Z) or redo (Ctrl + Y) the last operation. • To select props, or attach more props to a prop. • To launch an external editor to modify the selected prop. • To launch the **Preference** panel.
3	**Modify**	• To launch the **Render Style** and **Sprite Editor** panels.
4	**View**	• To show/hide the on-screen display (FPS, grid line, world axis, stage/composer mode display). • To perform the **Camera Tool Bar** commands, zoom in/out of the scene, pan or rotate the camera, switch to the different view modes of the camera.
5	**Window**	• To restore all the tool bars and panels to the default docking places. • To show/hide the tool bars, **Content Manager** and **Scene Manager** panels.
6	**Help**	• To launch the Help document, go to the official web page for demo videos or tutorials, or view the product FAQs and get further assistance. • To login with the member account. • To check for available program update. • To access the **City Marketplace** of **CrazyTalk Animator**. • To get free bonus contents or buy all trial contents. • To activate the contents you have paid or verify all of your contents in the **Template** and **Custom** libraries. • To access the home page of **Reallusion** or **CrazyTalk Animator**. • To show the product information for **CrazyTalk Animator**.

Project Tool Bar

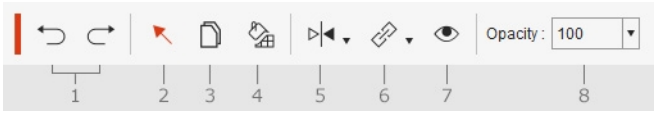
There are buttons for you to save, open, create a new project, preview the image of the current frame, and export the current project.



	Name	Description
1	**New Project** (Ctrl + N)	Click this button to create an empty project.
2	**Open Project** (Ctrl + O)	Click this button to open a **CrazyTalk Animator** project file (*.ctProject).
3	**Save As Project** (Ctrl + Shift + S)	Click this button to save the current project to a target directory.
4	**City Marketplace**	Click this button to search the **CrazyTalk Animator2 Marketplace** for your desired content items.
5	**Export**	Click the **Current Frame Preview** (F10) button to preview the output image of the current frame; click the **Export** button to export your project in different media.

General Tool Bar

Stage Mode



	Name	Description
1	**Undo / Redo**	Click these two buttons to undo (Ctrl + Z) or redo (Ctrl + Y) the last operation.
2	**Select**	Activate this button to multi-select characters, or objects, in the working area. It will automatically pop up after the selection is done. • When this button is activated, you may click on the desired characters or objects to select them. With the **Ctrl** key held, you may also multi-select characters or objects. • Press this button and drag in the working area to do a multiple select. • With the **Shift** key held, you may temporarily activate the **Multi-Select Mode**.
3	**Duplicate**	Click this button (Ctrl + Drag Item) to duplicate the selected object or objects, as well as motions and animations.
4	**Apply Selected Render Style**	Click this button to quickly transfer the predefined **Render Style** presets to other objects (characters or props) in the scene.
5	**Flip**	Click this button to set a **Flip** key to the selected object or objects. Please refer to the Making a Turn by Flipping Side section for more information.
6	**Link / Unlink**	Click this button to set a **Link / Unlink** key for the selected object or objects. Please refer to the Transporting an Item with Link and Unlink section for more information.
7	**Visible / Invisible**	Click this button to set a **Visible / Invisible** key for the selected object or objects. Please refer to the Using the Visible Setting section for more information.
8	**Opacity**	Adjust the value to set an **Opacity** key for the selected object or objects. Please refer to the Using the Opacity for Fade In and Fade Out section for more information.

Composer Mode - Character

G1 and G2 Characters



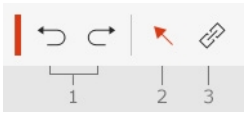
	Name	Description
1	**Undo/Redo**	Click these two buttons to undo (Ctrl + Z) or redo (Ctrl + Y) the last operation.
2	**Select**	Toggle this button to select sprites or joint masks in the working area.
3	**Mirror**	Click this button to quickly duplicate and copy one side to the other. The mirror creation method can be applied to individual body parts or to symmetrical facial features.
4	**Attach**	Click this button to attach accessories to the selected actor sprite.

G3 and Free Bone Characters



	Name	Description
1	**Undo / Redo**	Click these two buttons to undo (Ctrl + Z) or redo (Ctrl + Y) the last operation.
2	**Transform Parts**	Press down this button in order to select a body part, including the bone and the sprite attached to the bone. Then, you are able to transform this part.
3	**Transform Sprite**	Press down this button in order to select a target sprite and transform it. You might frequently use this tool and transform a sprite after loading a new sprite image.
4	**Transform Bone**	Press down this button in order to only select and transform the bone.
5	**Attach**	Click this button to attach accessories to the selected actor sprite.

Composer Mode - Prop

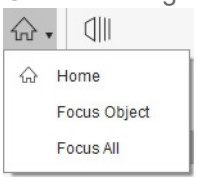
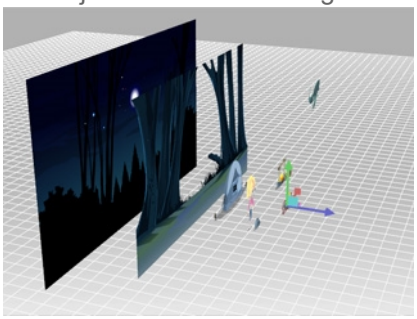
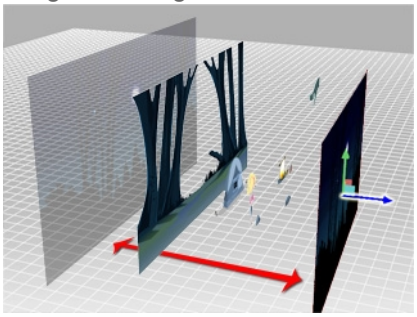


	Name	Description
1	**Undo/Redo**	Click these two buttons to undo (Ctrl + Z) or redo (Ctrl + Y) the last operation.
2	**Select**	Activate this button to select props in the working area.
3	**Attach**	Click this button to attach extra props to the current prop.

Camera Tool Bar

The buttons in this area control the camera view.



	Name	Description
1	**Camera Record Mode** (Stage Mode only)	Click this button to switch between Preview Camera Mode and Live Camera Mode. • Preview Camera Mode: In this mode, you can pan or rotate the camera without adding animation keys to it. • Live Camera Mode: In this mode, you can pan or rotate the camera to set animation keys for the camera. Please refer to the Using Live Camera section for more information.
2	**Camera Zoom** (Z)	Click to zoom in and out of the scene.
3	**Camera Pan** (X)	Click to pan the camera.
4	**Camera Rotate** (C)	Click to rotate the camera.
5	**Camera View**	Click the triangle button to use the drop-down list to switch to different modes:  • **Reset** (Home): Click to reset the position and the orientation of the camera. • **Focus Object** (F): Click this button so that the camera snaps back to view the selected object in the current project. • **Focus All**: Click this button so that the camera snaps back to view all the objects in the current project.
6	**3D View** (Stage Mode only)	Click this button to switch to 3D mode. You can then check the Z-depth relationships of each character and object inside the working area.  • Drag inside the working area with the left-mouse button to view the Z-depth relationships. • Drag inside the working area with the right-mouse button to move the camera to different angles inside the working area. • Drag the **Blue** gizmo handle of the select object to change its Z-depth.  Please refer to the Transforming inside the Working Area and Creating a Path Animation sections for more information.

Camera Operation with Mouse

In **Select Mode**, you may use the **Alt** key to accelerate the camera switch operation.

- **Alt** + Left Mouse Button: Pan the camera.
- **Alt** + Both Mouse Button: Zoom the camera.
- **Shift** + Mouse Wheel: Zoom the camera in 10x.

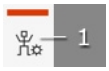
Functional Tool Bar

Stage Mode

You may use the features on this bar to create characters and objects, add voice clips for the characters to generate motions with, and to modify the text.

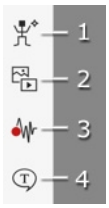


A. Composer Mode Switch



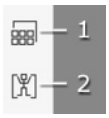
Name	Description
1. Composer	Click this button to activate the **Composer** and create a new character or a prop. Please refer to the Changing Parts of a Character, Modifying a Prop with the Composer and Creating Composite Props with the Composer sections for more information.

B. Creation Tools



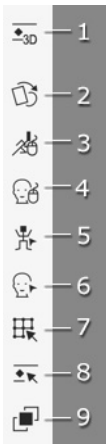
Name	Description
1. Create G3 Free Bone Actor	Click this button to start to create a free bone character with a custom image from scratch.
2. Create Media	Click this button to convert different media files into props, or an image layer or background of a project. Please refer to the Creating Props section for more information.
3. Create Script	Click this button to apply a voice to the selected character with **recording**, **text-to-speech technique**, **importing WAV** or **loading CTS** features. Please refer to the Adding Voice to a Character section for more information.
4. Text Editor (T)	Click this button after a text is selected so that you may modify the text. Please refer to the Using Text section for more information.

C. Render Style & Runtime Composer



Name	Description
1. Render Style (R)	Click this button to launch the **Render Style** panel and modify the color profile of your actor.
2. Runtime Composer (Ctrl + R) Pro & Pipeline	Click this button to launch the **Runtime Composer** panel. You may then modify the position, size or texture image of any face feature or body part, or add a joint mask to any body sprite. (**Pipeline** and **Pro** only)

D. Animation Tools



Name	Description
1. 3D Motion Key Editor (M) Pro & Pipeline	Click this button to launch the **3D Motion Key Editor** panel. You may then change the angle and manually move, rotate or scale each sprite to the appropriate position in a 3D view. (**Pipeline** and **Pro** only)
2. Sprite Editor (S)	Click this button to launch the **Sprite Editor** panel to generate image switching animations. Please refer to the Sprite-based Project section for more information.
3. Body Puppet (U)	Click this button to launch the **Face Puppet Editor** (Ctrl + U) or **Body Puppet Editor** (U) panels. You may then utilize this panel to generate the character's facial expressions or body movements. Please refer to the Using the Face Puppet Editor Panel and Using the Body Puppet Editor Panel sections for more information.
4. Face Puppet (Ctrl + U)	Click this button to launch the **Face Puppet Editor** (Ctrl + U) or **Body Puppet Editor** (U) panels. You may then utilize this panel to generate the character's facial expressions or body movements. Please refer to the Using the Face Puppet Editor Panel and Using the Body Puppet Editor Panel sections for more information.
5. 2D Motion Key Editor (K)	Click this button to launch the **2D Motion Key Editor** panel. You may then adjust the actor pose, manually move, rotate or scale each body or face sprite, or freely transform any body part in an image-based 2D view.
6. Face Key Editor (Ctrl + K)	Click this button to launch the **Face Key Editor** panel. You may then adjust the actor expressions, or manually move, rotate or scale each facial feature.
7. Prop Key Editor (K)	Click this button to launch the **Prop Key Editor** panel. You may then adjust the transformation or deformation keys of a selected prop.
8. Motion Key Editor (K)	Click this button to launch the **Motion Key Editor** panel. You may then adjust and set the pose key for the **G3 and Free Bone Characters** in order to do the key-frame animation.
9. Layer Editor (L)	Click this button to launch the **Layer Editor** panel. You may then change the layer order of the selected sprites.

Composer Mode - Actor

You may use the features on this bar to create an actor and modify the face or body sprite of the actor.

G1 and G2 Characters



A. Back to Stage Mode



Name	Description
1. Back to Stage	Click this button to go back to the **Stage Mode**.

B. Actor Modification



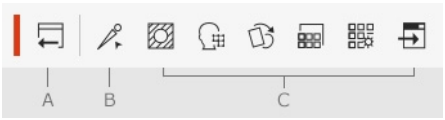
Name	Description
1. Load G2 Actor Design Template - SWF (Alt + Q) Pro & Pipeline	Click this button to load a G2 Actor-based design file as your actor. (**Pipeline** and **Pro** only)
2. Confirm Multi-angle Settings Pro & Pipeline	Click this button to apply optimized sprite layers and joint mask settings for the actor. (**Pipeline** and **Pro** only)
3. Convert G1 Hand to G2 Hand	Click this button to remap G1 Hand poses for G2 motion. The converted G1 actor can then be saved in G2 actor format and can use G2 actor sprite content.
4. Actor Proportion (P)	Click this button to activate the **Actor Proportion** panel and choose a desired proportion for your actor.
5. Calibration	Click this button to activate the **Calibration** panel and carry out body or face calibration.

C. Sprite Modification



Name	Description
1. Mask Editor	Click this button to activate the **Mask Editor** panel to edit the mask of an image-based element in a sprite.
2. Facial Animation Setup Pro & Pipeline	Click this button to activate the **Facial Animation Setup** panel. You may use the panel to setup the transform and deform data of expressions for each facial feature. This feature only applies to **Vecter-based Face**.
2. Sprite Editor (S) Pro & Pipeline	Click this button to activate the **Sprite Editor** panel to replace the texture image of the selected sprite in order to fit each angle. (**Pipeline** and **Pro** only)
4. Render Style (R) Pro & Pipeline	Click this button to activate the **Render Style** panel and modify the color profile of your actor.
5. Vector Grouping Tool Pro & Pipeline	Click this button to activate the **Vector Grouping Tool** panel and apply a desired **Render Style** for each body part. (**Pipeline** and **Pro** only)
6. Launch External Image Editor Pro & Pipeline	Click this button to launch an external editor and modify the created face image of the actor.

G3 and Free Bone Characters



A. Back to Stage Mode



Name	Description
1. Back to Stage	Click this button to go back to the **Stage Mode**.

B. Actor Modification



Name	Description
1. Bone Editor Pro & Pipeline	Click this button to launch the Bone Editor panel for adding or editing bones of **G3 Free Bone Characters**.

C. Sprite Modification



Name	Description
1. Mask Editor	Click this button to activate the **Mask Editor** panel to edit the mask of an image-based element in a sprite.
2. Facial Animation Setup Pro & Pipeline	Click this button to activate the **Facial Animation Setup** panel. You may use the panel to setup the transform and deform data of expressions for each facial feature. This feature only applies to **Vecter-based Face**.
2. Sprite Editor (S) Pro & Pipeline	Click this button to activate the **Sprite Editor** panel to replace the texture image of the selected sprite in order to fit each angle. (**Pipeline** and **Pro** only)
4. Render Style (R) Pro & Pipeline	Click this button to activate the **Render Style** panel and modify the color profile of your actor.
5. Vector Grouping Tool Pro & Pipeline	Click this button to activate the **Vector Grouping Tool** panel and apply a desired **Render Style** for each body part. (**Pipeline** and **Pro** only)
6. Launch External Image Editor Pro & Pipeline	Click this button to launch an external editor and modify the created face image of the actor.

Composer Mode - Prop

You may use the features on this bar to modify your props.

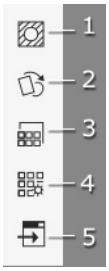


A. Back to Stage Mode



Name	Description
1. Back to Stage	Click this button to go back to the **Stage Mode**.

B. Sprite Modification



Name	Description
1. Mask Editor	Click this button to activate the **Mask Editor** panel to edit the mask of an image-based element in a sprite.
2. Sprite Editor (S) Pro & Pipeline	Click this button to activate the **Sprite Editor** panel to replace the texture image of the selected sprite. (**Pipeline** and **Pro** only)
3. Render Style (R) Pro & Pipeline	Click this button to activate the **Render Style** panel and modify the color profile of the selected prop.
4. Vector Grouping Tool Pro & Pipeline	Click this button to activate the **Vector Grouping Tool** panel and apply a desired **Render Style** for the selected prop. (**Pipeline** and **Pro** only)
5. Launch External Image Editor Pro & Pipeline	Click this button to launch an external editor and modify the selected image-based sprite.

Property Tool Bar

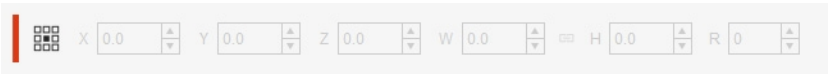
Stage Mode

If you need to set a transform key with an exact value, then use the **Property Tool Bar** to move, scale or rotate the selected objects.



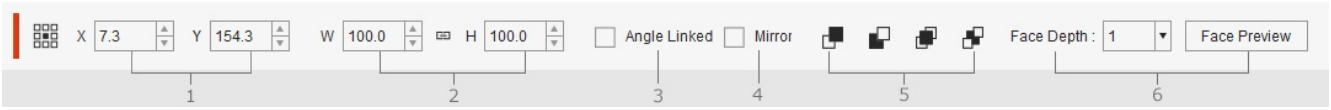
	Name	Description
1	**X, Y, Z**	Enter these values to decide the location of the character or the prop.
2	**W, H**	Enter these values to decide the **Width** and the **Height** of the character or the prop. You can click the **Lock / Unlock Ratio** button to toggle the **Keep Aspect Ratio** on / off.
3	**R**	Enter a value to determine the orientation of the character or the prop.
4	**Curve /Linear**	Switch between the **Curve** and **Linear** buttons to change the path from curved to straight.
5	**Zero Key**	Click the **Zero Key** button to set a neutral transform key (0 value) to each numerical field in the panel.

- In the **2D Motion Key Editor** panel, in addition to adjusting the position, size or orientation of the sprites, you can also mirror the transform value to the opposite side of the body part or facial feature in a forward or reverse direction.



Composer Mode - Actor

G1 and G2 Characters

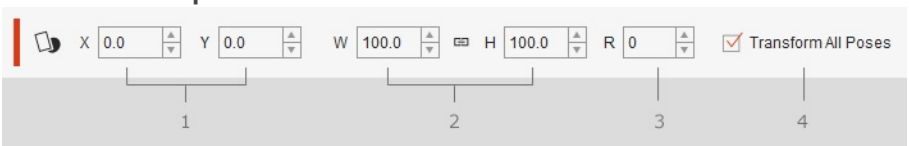


	Name	Description
1	**X, Y**	Enter these values to determine the position of the actor.
2	**W, H**	Enter these values to decide the **Width** and the **Height** of the actor. You can click the **Lock / Unlock Ratio** button to toggle the **Keep Aspect Ratio** on / off.
3	**Angle Linked**	Activate the **Angle Linked** box to keep a consistent angle.
4	**Mirror**	Mirror the transform values to the opposite side of the body part or facial feature.
5	**Layer**	Click the buttons to change the layer order for each sprite.
6	**Face Depth** (for face only)	Choose a depth level from the **Face Depth** drop-down list, then click the **Preview** button and move your mouse. The head will be triggered to move with the mouse cursor for you to observe the face depth.

G3 and Free Bone Characters

A. Transform Part and Bone Mode (Under construction)

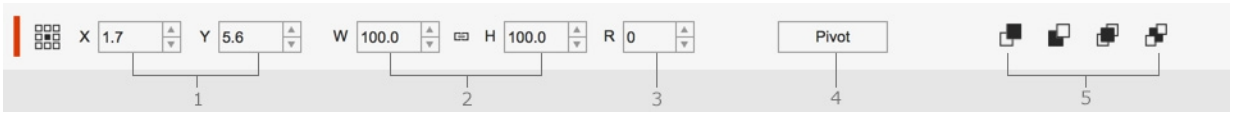
B. Transform Sprite Mode.



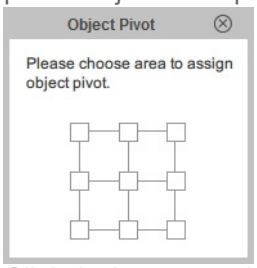
	Name	Description
1	**X, Y**	Enter these values to decide the position of the prop.
2	**W, H**	Enter these values to decide the **Width** and the **Height** of the prop. You can click the **Lock / Unlock Ratio** button to toggle the **Keep Aspect Ratio** on / off.
3	**R**	Enter a value to determine the orientation of the prop.
4	**Transform**	Activate this box in order to simultaneously transform all poses in a sprite.

All Poses

Composer Mode - Prop



	Name	Description
1	**X, Y**	Enter these values to decide the position of the prop.
2	**W, H**	Enter these values to decide the **Width** and the **Height** of the prop. You can click the **Lock / Unlock Ratio** button to toggle the **Keep Aspect Ratio** on / off.
3	**R**	Enter a value to determine the orientation of the prop.
4	**Pivot**	Click the **Pivot** button to show the **Object Pivot** panel to determine the position of the pivot for each component object of the prop.
5	**Layer**	Click the buttons to change the layer order for each sprite.



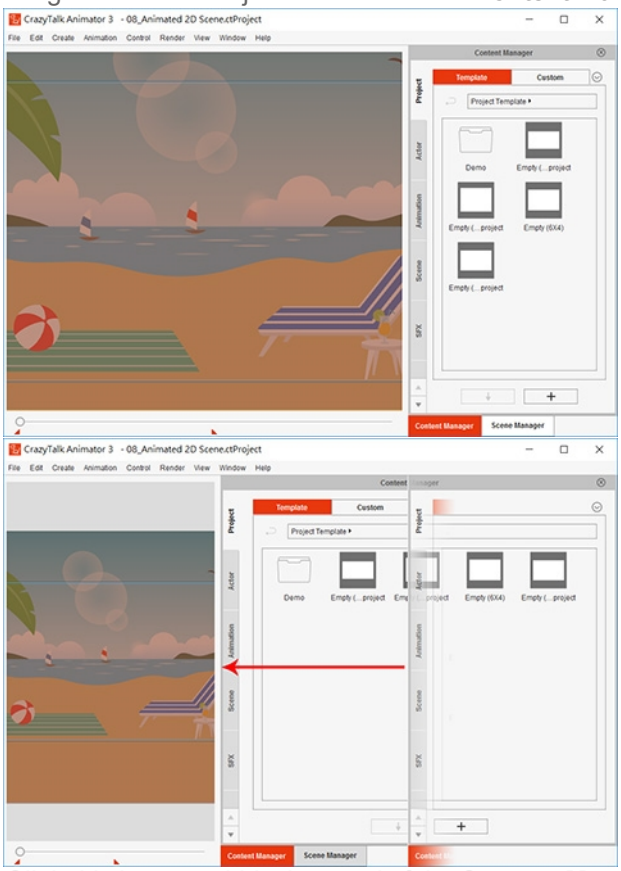
- In the **Sprite Editor** panel of the **Composer Mode**, you can also adjust the position, size or orientation of the sprites. Pro & Pipeline



Content Manager and Scene Manager



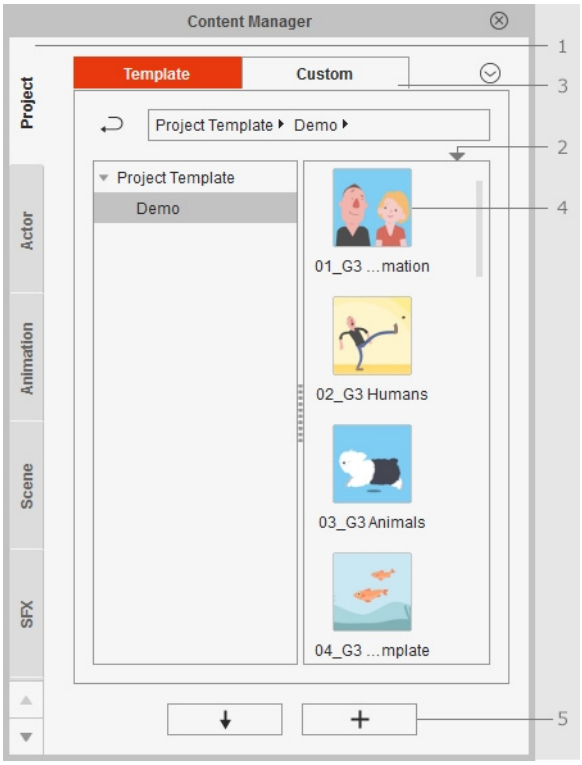
	Name	Description
1	**Adjustable Border**	Drag the border to adjust the width of the **Content Manager** so that you may view more content.



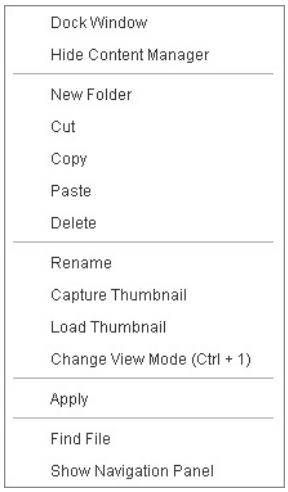
2	**Hide**	Click this button to hide the panel of the **Content Manager** or **Scene Manager**. When they are hidden, you can press F4 to show the **Content Manager**, and F5 to show the **Scene Manager**.
3	**Float**	Click the button to individually float the **Content Manager** or **Scene Manager**. When they are floating, you can double click on the panel name to dock them back.
4	**Panel Tabs**	Click the tabs to switch between the **Content Manager** and **Scene Manager** panel.

Content Manager

The content manager is used for managing the various **CrazyTalk Animator** files including; characters, animations and content associated with a project.

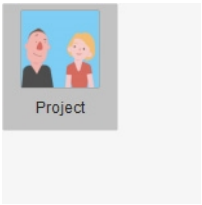


	Name	Description
1	**Category Tabs**	Click these tabs to switch to the corresponding category.
2	**Template and Custom Library**	Each category is divided into two libraries: • **Template** Library: Contains embedded template installed along with the main program. • **Custom** Library: Contains custom templates you add.
3	**Menu Buttons**	Click this button to show the menu for manipulating the **Content Manager**, including:

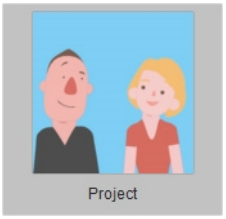


- Show and hide (Shortcut: F4), dock and undock the **Content Manager**.
- Basic editing for the custom templates (The **Paste** function is for version Pro & Pipeline only).
- Capture the view of the working area, in the current frame, as the thumbnail for the selected template in the **Custom** library.
- Load an image as the thumbnail of the selected custom template.

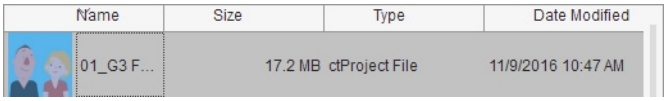
- Cycle through the content display options.



Small thumbnail view

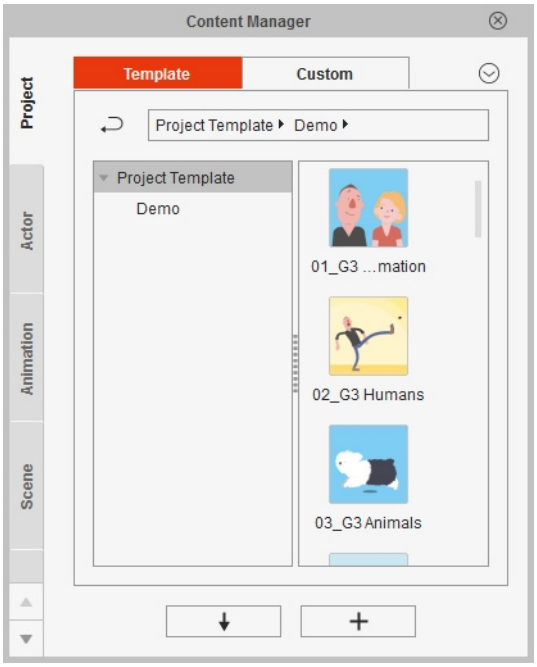


Large thumbnail view



Details view

- Apply the selected content to the current project. This does the same as double-clicking the content thumbnail. Please refer to the Drag and Drop section for more information on applying methods.
- Browse to find the selected template.
- Show and hide the navigation pane. When the navigation pane is displayed, you can drag the middle border to adjust its width.



Show the navigation pane to browse through all the library folders.



Hide the navigation pane to view more content.

4 Templates

In the library pane, you may manipulate the templates, including:

- Apply the selected template (by drag-and-drop or click the **Apply** button).
- Use the right-click menu to do basic editing; renaming or changing the thumbnail of the custom templates.

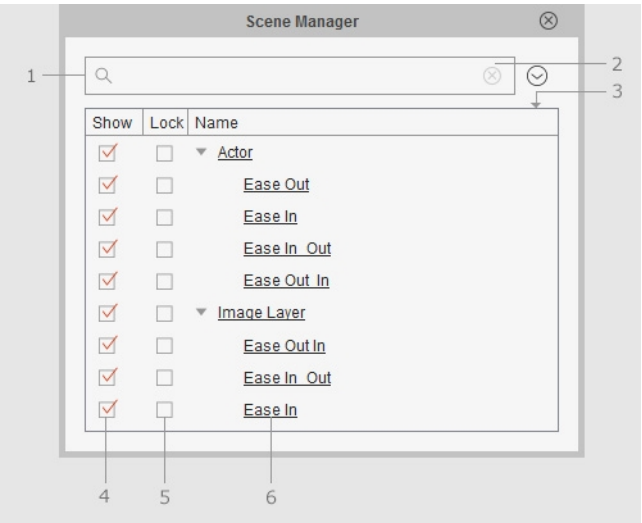
5 Applying and Adding Templates

- [↓]: Click this button to apply the selected template. This does the same as double-clicking the content thumbnail. Please refer to the Drag and Drop section for more information on applying methods.
- [+]: Click this button to add the current object in the scene into the **Custom** library of the selected **Category**. If you have selected a template in the **Custom** Library, then click this button to overwrite the selected template.

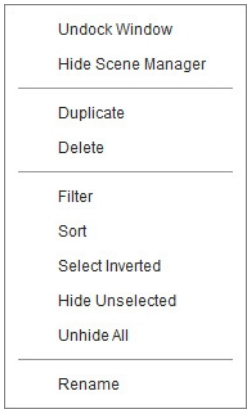
Scene Manager

The **Scene Manager** displays all the objects and characters included in the current project. In **Stage Mode**; you may select multiple items, show/hide items, rename them, and lock them from being selected in the working area. In **Composer Mode**; you can not only see any content item, but also all of the sprites in it.

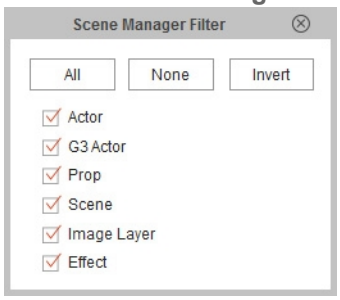
Stage Mode



	Name	Description
1	**Searching Objects**	Type full or partial titles of objects in the search field to search for desired objects.
2	**Clearing Search**	Clear your search and start again.
3	**Menu Buttons**	Click this button to show the menu for manipulating the **Scene Manager**, including:



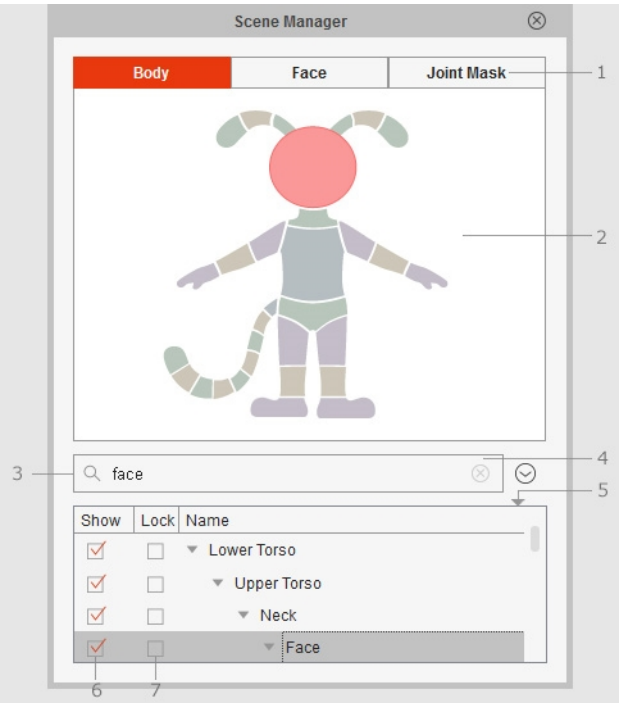
- Show and hide (Shortcut: F5), dock and undock the **Scene Manager**.
- Duplicate, delete or rename the selected objects.
- Use the **Scene Manager Filter** to show objects in specific categories.



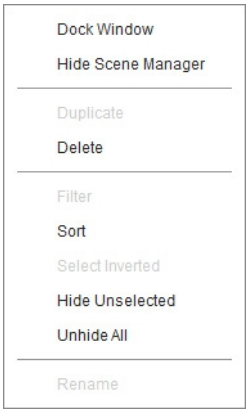
- Sort selected objects, hide unselected objects or show all objects in the scene.

4	**Show/Hide Status**	Show or hide the selected item. This status does not affect the export result.
5	**Lock**	Check the box so that the object cannot be picked in the **Preview window**. Please refer to the Using Lock and Unlock section for more information.
6	**Object List**	Click on the desired object once to select it, double-click (**F2**) on its name again to enter the name-editing mode. You may rename all the items.

Composer Mode - G1 and G2 Characters



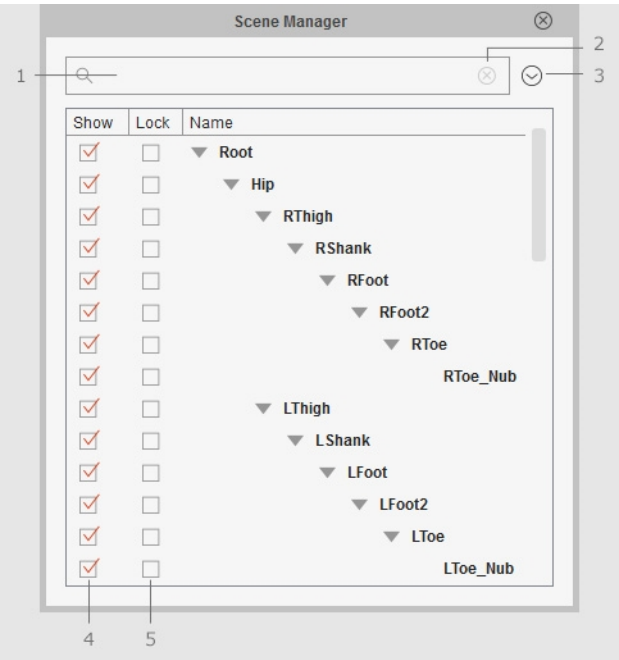
	Name	Description
1	**Tabs**	Click the tabs to switch between the **Body**, **Face** and **Joint Mask** tab.
2	**Sprite Selection**	Select the desired body part, facial feature or joint mask under each tab. The selected sprite name will be displayed in the field at the bottom.
3	**Searching Sprites**	Type full or partial titles of sprites in the search field to search for desired sprites.
4	**Clearing Search**	Clear your search and start again.
5	**Menu Buttons**	Click this button to show the menu for manipulating the **Scene Manager**.



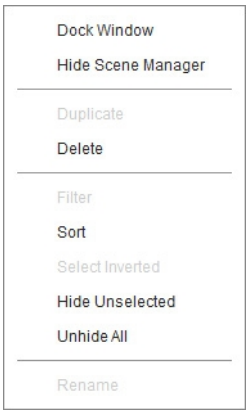
- Show and hide (Shortcut: F5), dock and undock the **Scene Manager**.
- Delete the selected sprite.
- Sort the items by name.
- Hide unselected sprite or show all sprite in the scene.

6	**Show/Hide Status**	Show or hide the selected item. This status does not affect the export result.
7	**Lock**	Check the box so that the sprite cannot be picked in the **Preview window**. Please refer to the Using Lock and Unlock section for more information.

Composer Mode - G3 and Free Bone Characters



	Name	Description
1	**Searching Sprites**	Type full or partial titles of sprites in the search field to search for desired sprites.
2	**Clearing Search**	Clear your search and start again.
3	**Menu Buttons**	Click this button to show the menu for manipulating the **Scene Manager**.

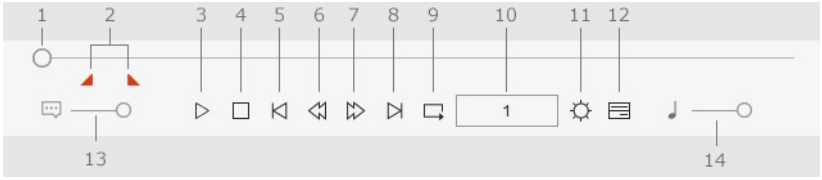


- Show and hide (Shortcut: F5), dock and undock the **Scene Manager**.
- Delete the selected sprite.
- Sort the items by name.
- Hide unselected sprite or show all sprite in the scene.

4	**Show/Hide Status**	Show or hide the selected item. This status does not affect the export result.
5	**Lock**	Check the box so that the sprite cannot be picked in the **Preview window**. Please refer to the Using Lock and Unlock section for more information.

Play Bar

The **Play Bar** is used to control scene playbacks in **CrazyTalk Animator** scenes.



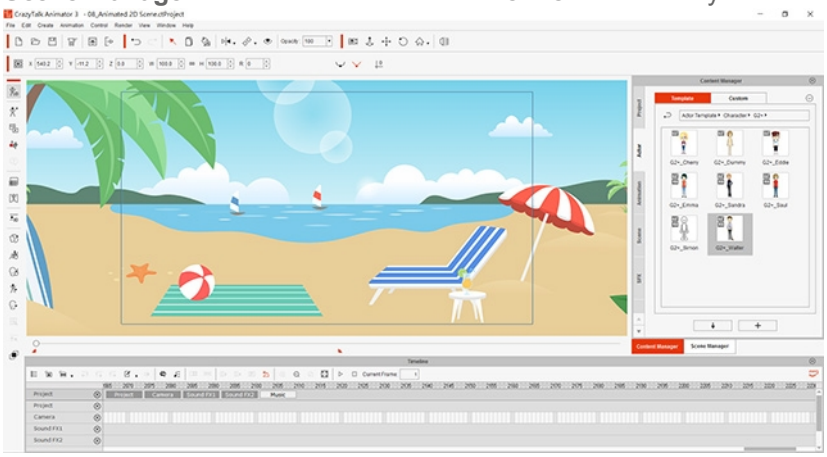
	Name	Description
1	Play Head	Show the current frame of the project. You may also quickly drag it to any desired frame.
2	Mark In/Out of Playback/Export Range	Drag this mark to set the mark in/out frame during playback or export.
3	Play/Pause (Space bar)	To play back current project.
4	Stop	To stop play back.
5	Jump to Start Frame	To jump to the cue frame of the playback, or to the start frame of the project.
6	Previous Frame	To jump one frame backwards.
7	Next Frame	To jump one frame forwards.
8	Jump to End Frame	To jump to the cue-out frame of the playback, or to the end frame of the project.
9	Loop On/Off	To toggle playback loop on/off.
10	Current Time	To show the current time/frame.
11	Project Settings	Use the **Project Settings** panel to set the total length for the current project, select the time unit and camera mode, zoom in/out of the safe area, and modify the background color or load a background image.
12	Show Timeline (F3)	To bring up the **Timeline**.
13	Voice Volume	To adjust the volume of the sound effect.
14	Music Volume	To adjust the volume of the background music.

Docking and Floating Panels

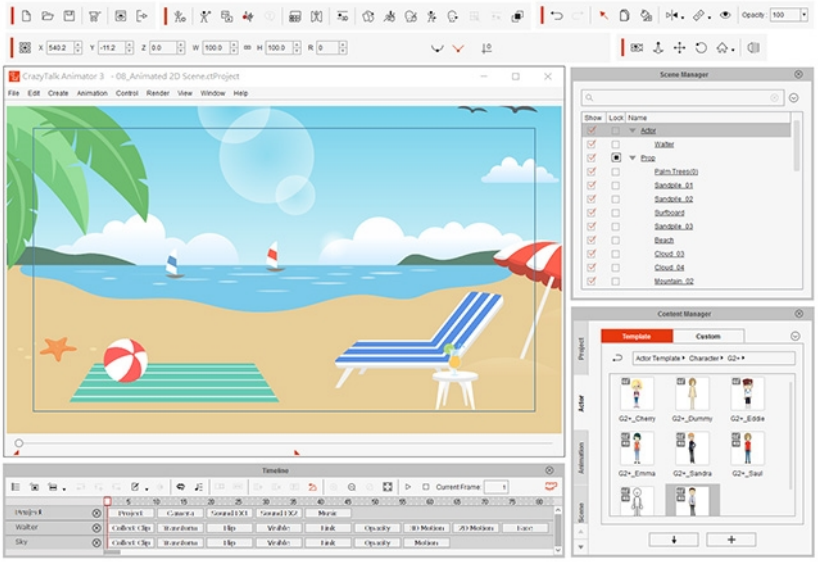
All the panels in **CrazyTalk Animator**, such as **Tool Bars**, **Content Manager** and **Scene Manager** and **Timeline** can be docked or undocked. By docking the panels, you can quickly access the tools or templates without having to hover the mouse too far; while by undocking the panels, you can get a wider and clearer working area for better viewing custom projects. You may double-click the panel zone to dock or to float a panel.

Panels Docked and Undocked

After the panels are docked, the tools on the **Tool Bars**, the templates in the **Content Manager**, the objects in the **Scene Manager** and the features in the **Timeline** can be easily accessed.



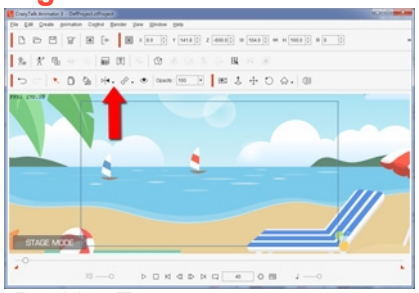
When the panels are undocked, they float above the main program and the working area enlarges to present a better view. You may then move the panels elsewhere to prevent from hindering the working area. If you are using dual-display environments, then you may move the panels to one display while keeping the main program on the other.



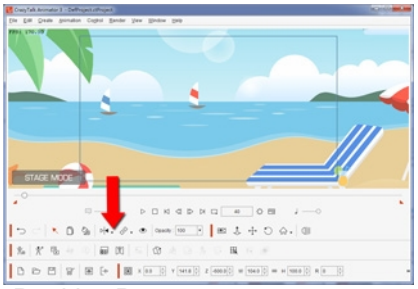
Dockable Area for Tool Bars

The tool bars can be docked to the top, bottom, left and right of the main program when you drag and drop it into the area. You may access the **Window** commands from the menu to show / hide the tool bars.

Stage Mode



Docking Top.



Docking Bottom.

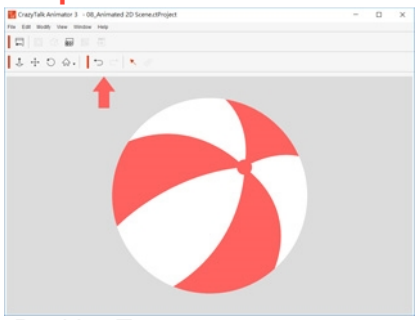


Docking Left.
(File Handles, Camera Tool Bar and Function Bar only)

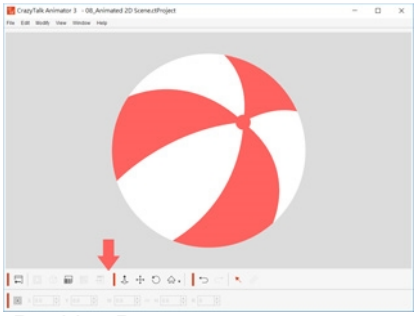


Docking Right.
(File Handles, Camera Tool Bar and Function Bar only)

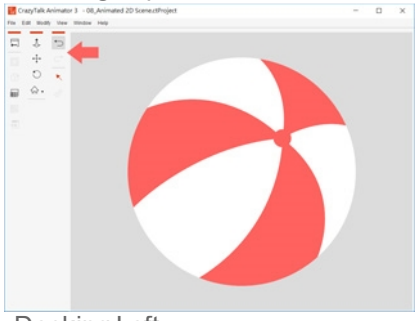
Composer Mode



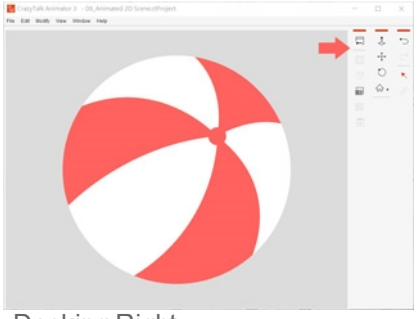
Docking Top.



Docking Bottom.



Docking Left.

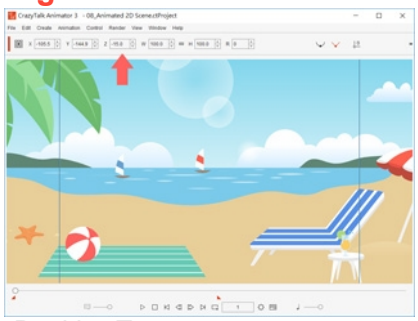


Docking Right.

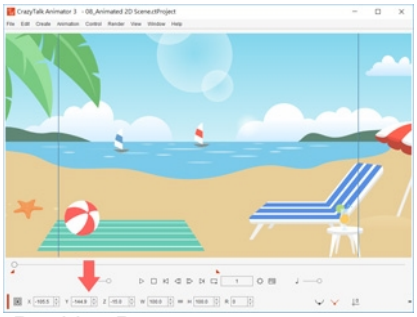
Dockable Area for Property Bars

The property bars can be docked to the top and bottom of the main program when you drag and drop it into the area. You may access the **Window** commands from the menu to show/hide the property bars.

Stage Mode

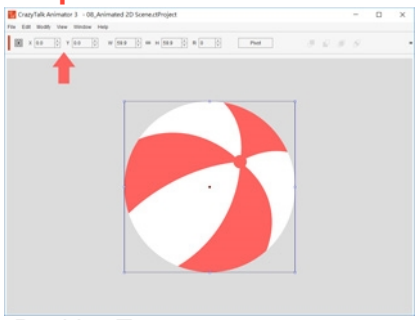


Docking Top.

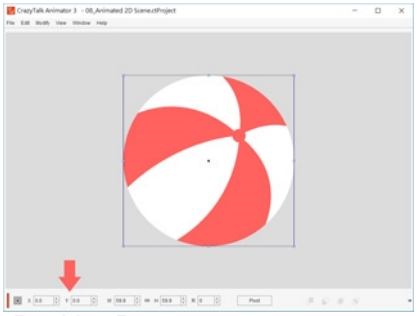


Docking Bottom.

Composer Mode



Docking Top.

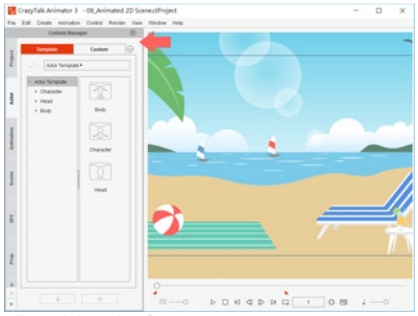


Docking Bottom.

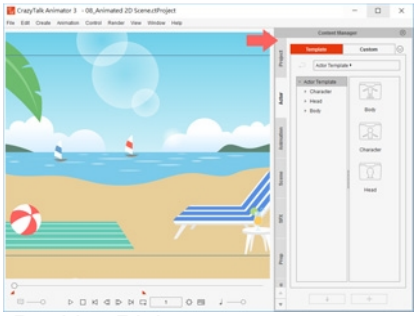
Dockable Area for Content Manager and Scene Manager

Content Manager

The **Content Manager** can be docked to the left and right of the main program when you drag and drop it into the area. You may use F4 to toggle the visibility of the **Content Manager** panel.



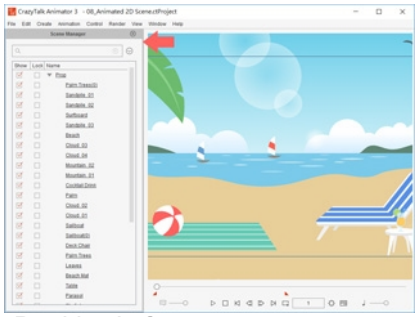
Docking Left.



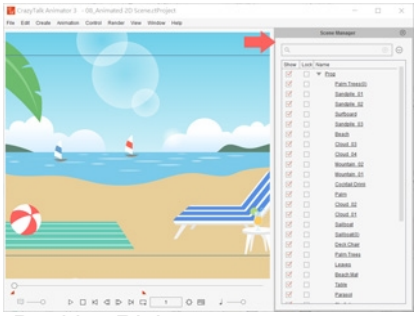
Docking Right.

Scene Manager

The **Scene Manager** can be docked to the left and right of the main program when you drag and drop it into the area. You may use F5 to toggle the visibility of the **Scene Manager** panel.



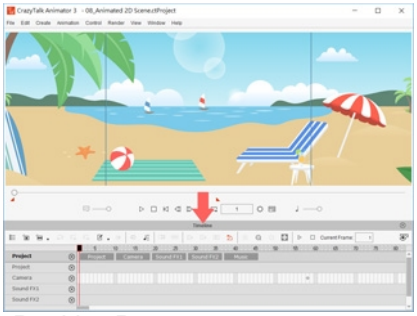
Docking Left.



Docking Right.

Dockable Area for Timeline

The **Timeline** can be docked to the top and bottom of the main program when you drag and drop it into the area. You may use F3 to toggle the visibility of the **Timeline** panel.



Docking Bottom.

Drag and Drop

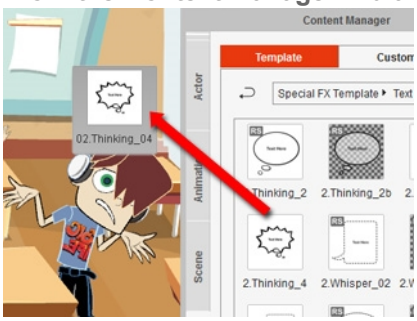
CrazyTalk Animator provides several drag and drop methods to accelerate the building of your scene.

Please refer to the Drag and Drop Table section for more information about the drag and drop behavior in **CrazyTalk Animator**.

Adding Objects

Adding objects including; characters, props, image layers, effects, texts and backgrounds, can all be done by drag-and-dropping from different sources.

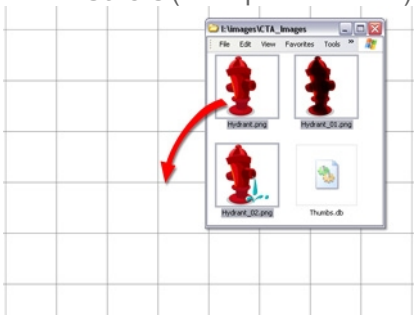
A. **From the Content Manager Library**



B. **From Source Folder**

The Supported file types:

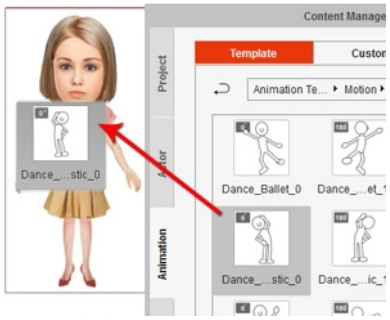
- **Image**: BMP, JPG, TGA, PNG, Gif, SWF.
- **Video**: AVI, WMV, RM, RMVB, MP4 for PC, Mpeg, ASF, ASX, MOV, FLV.
- **Others** (Transparent Videos): iWidget, popVideo.



Dragging for applying

Character in Stage Mode

You are able to drag and drop any template from the **Animation** libraries (**Motion**, **Face**, **Perform** and **Action Menu**) to any character instead of selecting the template and clicking the **Apply** button.



Drag and drop a motion template onto the character.

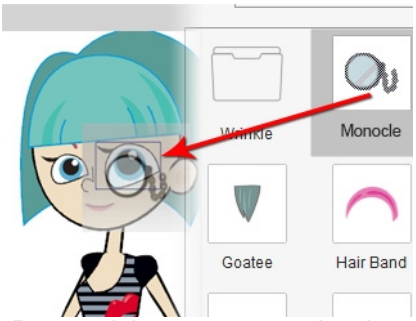


The character will start the motion.

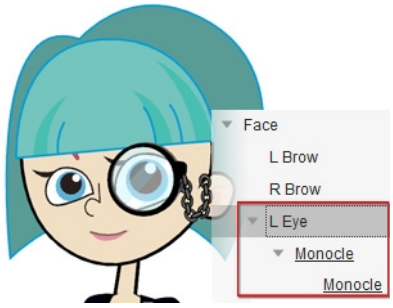
Note: You may also drag and drop from a folder to have the same results.

Character in Composer Mode

When you select a character and switch to the **Composer** mode, then you can drag and drop any props onto any body parts. **CrazyTalk Animator** will automatically attach the prop to the body part.



Drag and drop a prop onto the character.

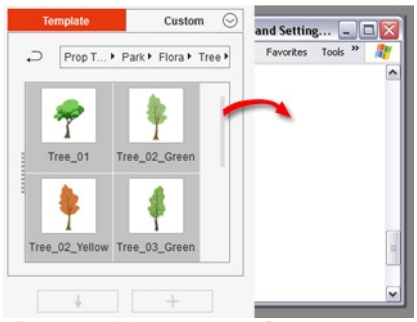


The prop instantly attaches to the body part.

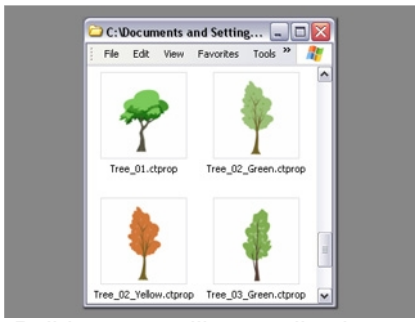
Note: You may also drag and drop from a folder to have the same result.

Assets Collection

You can drag and drop one or more assets, from the **Content Manager**, into your desired folder to create your a custom library collection.



Drag and drop assets from **CrazyTalk Animator** to a folder.



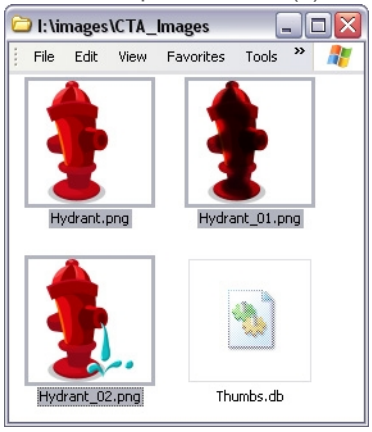
Build a custom library collection.

Advanced Usage

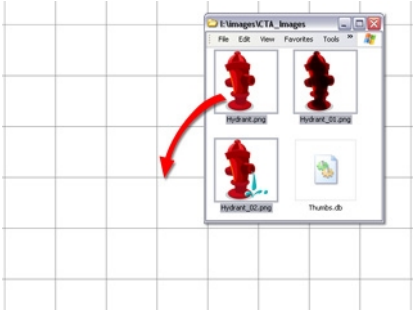
CrazyTalk Animator also provides a feature for you to create props with compound elements. You may also convert multiple images into target object elements.

Creating a Prop with Multiple Media

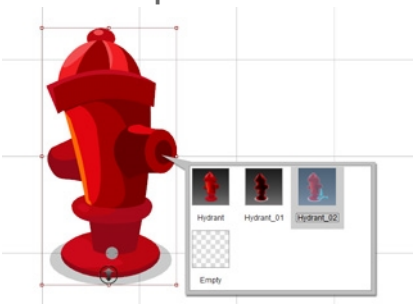
1. Select multiple media file(s) in the source folder.



2. Drag and drop into the working area of **CrazyTalk Animator**.

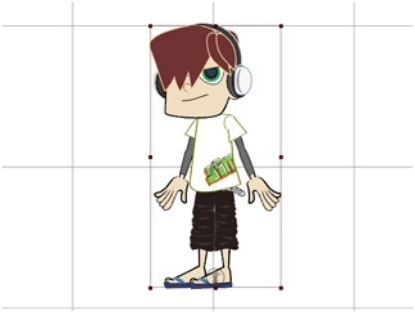


3. Click the **Prop** button to create a new prop with these media.

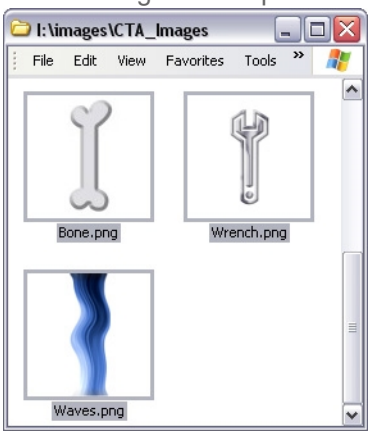


Appending Media to a Sprite

1. Select a character or a prop. Switch to the **Composer** mode.



2. Select a single or multiple media files in the source folder.



3. Drag and drop onto the target sprite in the working area of **CrazyTalk Animator**.



4. Pick the sprite and click the **Sprite Editor** button. All the media will be converted into the elements of the sprite.



Drag and Drop Table

Stage Mode

Item	File Format	Drag and Drop Target					
		Actor	Props	Text	Effect	Same item selected	Applying
Project	.ctProject	N/A	N/A	N/A	N/A	Replace Current Project	Replace Current Project
Character	.ctActor	Replace	N/A	N/A	N/A	Replace	Add new character
Head	.ctHead	Replace Head	N/A	N/A	N/A	Replace Head	N/A
Body	.ctBody	Replace Body	N/A	N/A	N/A	Replace Body	N/A
Perform	.ctPerform	Apply Perform	N/A	N/A	N/A	Apply Perform	N/A
Face	.ctFCS	Apply Facial Motion	N/A	N/A	N/A	Apply Facial Motion	N/A
Motion	.ctMotion	Apply Body Motion	N/A	N/A	N/A	Apply Body Motion	N/A
3D Motion	.ctMotion	Apply 3D Body Motion	N/A	N/A	N/A	Apply 3D Body Motion	N/A
Action Menu	.ctAction	Apply Action Menu	N/A	N/A	N/A	Apply Action Menu	N/A
Scene	.ctScene	N/A	Replace all Props under Scene Category	N/A	N/A	Replace all Props under Scene Category	Replace all Props under Scene Category
Image Layer	.ctLayer	N/A	N/A	N/A	N/A	Add new Image Layer	Add new Image Layer
Props	.ctProp	N/A	Add new Prop	N/A	N/A	Add new Prop	Add new Prop
Background	.Jpg	N/A	N/A	N/A	N/A	Add new Prop or Image Layer, or replace current background	Replace current background
Text	.ctText	N/A	N/A	N/A	N/A	Add new Text	Add new Text
Effect Object	.cteffect	N/A	N/A	N/A	N/A	Add new Effect Object	Add new Effect Object
Sound	.WAV, .MP3	Add Voice	Add Sound Effect or Background Music	Add Sound Effect or Background Music	Add Sound Effect or Background Music	Add Sound Effect or Background Music	Add Sound Effect or Background Music
CTS	.cts	Apply Voice and Facial Motion	N/A	N/A	N/A	N/A	N/A
Motion Clip	.clp	Apply Facial Motion	N/A	N/A	N/A	N/A	N/A
iClone Motion	.iMotion (**Pipeline** only)	Apply Body Motion	N/A	N/A	N/A	N/A	N/A
CTM	.ctm	Add new Character with Head Only	N/A	N/A	N/A	N/A	N/A
Video	AVI, WMV, RM, RMVB, MP4 for PC, Mpeg, ASF, ASX, MOV, FLV,	N/A	N/A	N/A	N/A	N/A	Add Prop, Image Layer or Background

Image	popVideo, SWF BMP, JPG, GIF, PNG, SWF, TGA	N/A	N/A	N/A	N/A	N/A	Add Prop, Image Layer or Back-ground
Multiple Media	Image/Video	N/A	N/A	N/A	N/A	N/A	Add Prop, Image Layer or Back-ground
Prop Anim-ation	.ctAnim	N/A	Apply Prop Animation	N/A	N/A	N/A	N/A

Composer Mode

Composer Mode - Character

Item	File Format	Drag and Drop Target	
		Actor Body Parts	Applying (No Body Part Selected)
Actor	.ctActor	Replace Current Actor	Replace Current Actor
Head	.ctHead	Replace	Replace
Body	.ctBody	Replace	Replace
Upper + Neck + Arm + ForeArm	.ctUpper	Replace	Replace
Lower + Thigh + Shank	.ctLower	Replace	Replace
Hand	.ctHand	Replace	Replace
Foot	.ctShoes	Replace	Replace
Rabbit Ear	.ctHdress	Attach to Head	Attach to Head
Tail	.ctTail	Attach to Lower Torso	Attach to Lower Torso
Face	.ctFace	Replace	Replace
Eye	.ctEye	Add or Replace	Add or Replace
Nose	.ctNose	Add or Replace	Add or Replace
Mouth	.ctMouth	Add or Replace	Add or Replace
Ear	.ctEar	Add or Replace	Add or Replace
Brow	.ctBrow	Add or Replace	Add or Replace
HairFront + HairBack	.ctHair	Add or Replace	Add or Replace
Headdress	.ctHdress	Add or Replace	Add or Replace
Tail	.ctTail	Add or Replace	Add or Replace
Shoes	.ctShoes	Add or Replace	Add or Replace
Prop	.ctProp	Attach to the Body Part	Accessories, Glasses, Caps and Hats attach to the Head Common Props attach to the Lower Torso
Multiple Media	Image/Video	Add more Elements to the Body Part	N/A

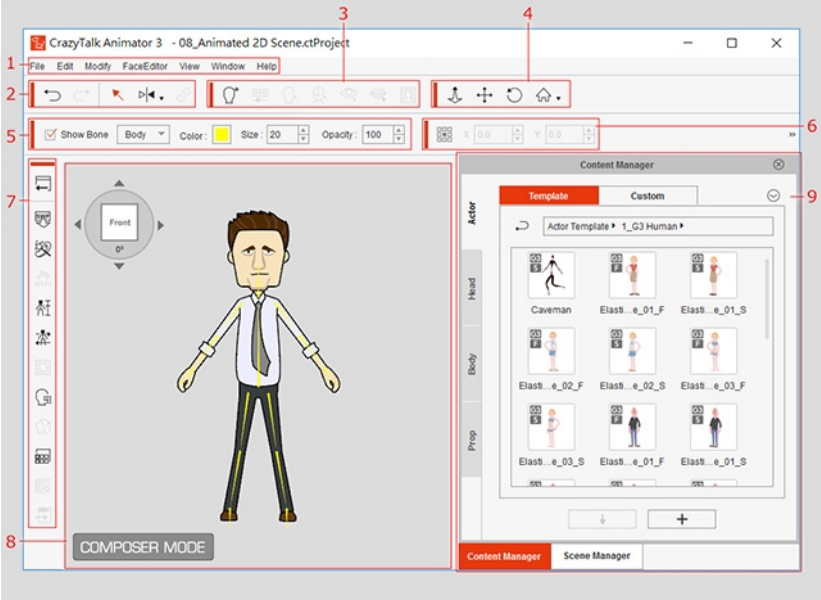
Composer Mode - Prop

Item	File Format	Composer Mode	Drag and Drop Target
		Prop	Applying (No Sprite Selected)
Prop	.ctProp	Replace Current Sprite	Add Sprite
Multiple Media	Image/Video	Add more Elements to the Prop Sprite	N/A

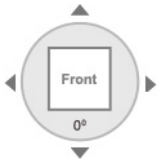
Composer User Interface Introduction – Actor

The composer user interface for actors is divided into 9 parts. Please refer to the sections below for more details about each part.

G1 and G2 Characters

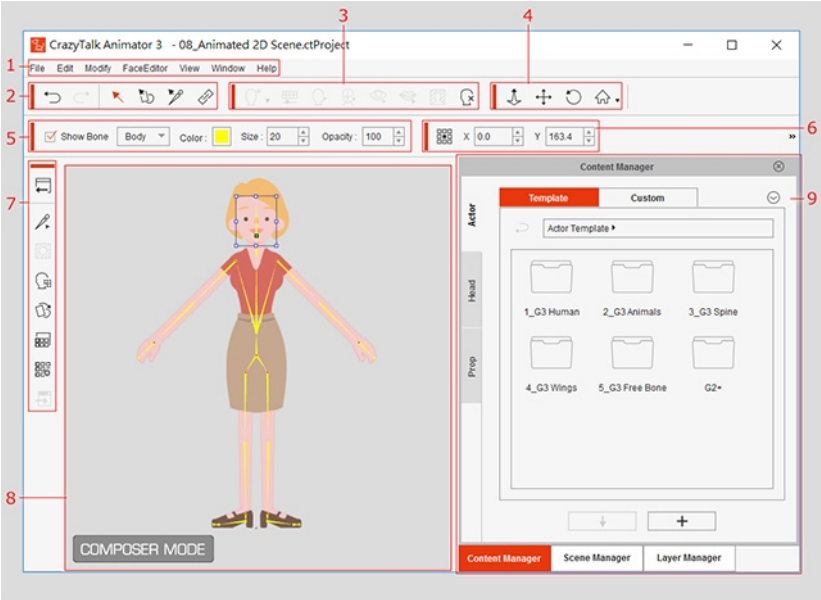


	Name	Description
1	Menu	The menu contains each command in the **Composer Mode**.
2	General Tool Bar	The tool bar is able to undo and redo actions, select sprites, attach props to sprites, show / hide connect points, or modify joint masks.
3	Create Face Bar	The tool bar can load an image to create a new face for the current actor, or customize the eyes and teeth of your actor.
4	Camera Tool Bar	The tool bar contains buttons to zoom in and out, pan or rotate the camera, or switch to different view modes.
5	Property Tool Bar	Property tools for transforming the selected sprites to enhance the details of the 2D / 3D animation result.
6	Bone Tool Bar	The tool bar can show / hide face or body bones, or change the color, size and opacity of bones.
7	Functional Tool Bar	The left-side tool bar can bring you back to the **Stage Mode**, load an actor swf file, optimize the actor details, change the actor proportion and render style, and invoke the **Vector Grouping Tool**, **Calibration**, **Validate Multi-angle Setup** and **Sprite Editor** panels.
8	**Preview Window** (Working Area)	The modification to the actor can be observed in the **Preview Window**. You may select the angle switch to view and adjust the sprite in each angle.
9	Content Manager (F4) and Scene Manager (F5)	The **Content Manager** contains embedded and custom templates, and the **Scene Manager** displays all the sprites included in the current actor.



- Click the left / right arrows to switch to the 0, 45, 90, 135, 180, 225, 270 and 315-degree view.
- Click the up / down arrows to switch to the front, back, top and bottom view.

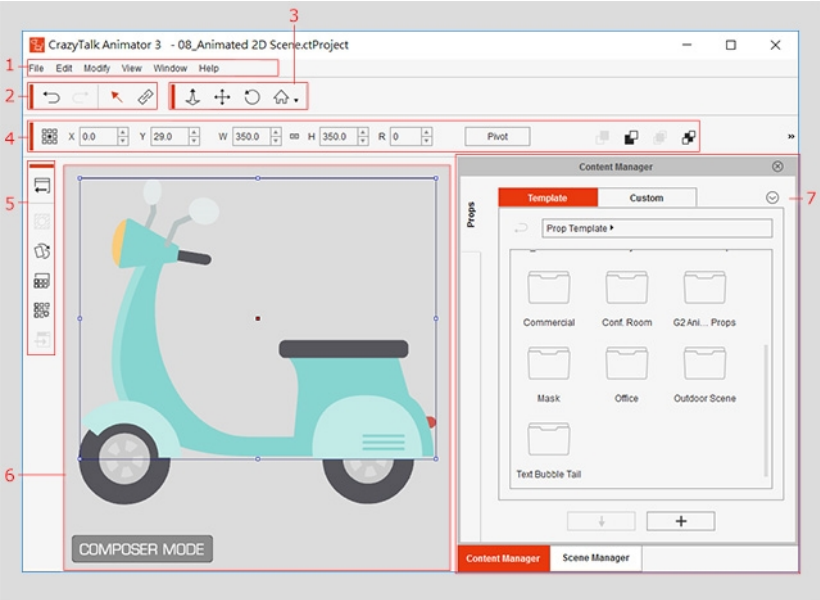
G3 and Free Bone Characters



	Name	Description
1	**Menu**	The menu contains each command in the **Composer Mode**.
2	**General Tool Bar**	The tool bar is able to undo and redo actions, select sprites, attach props to sprites, show / hide connect points, or modify joint masks.
3	**Create Face Bar**	The tool bar can load an image to create a new face for the current actor, or customize the eyes and teeth of your actor.
4	**Camera Tool Bar**	The tool bar contains buttons to zoom in and out, pan or rotate the camera, or switch to different view modes.
5	**Property Tool Bar**	Property tools for transforming the selected sprites to enhance the details of the 2D animation result.
6	**Bone Tool Bar**	The tool bar can show / hide face or body bones, or change the color, size and opacity of bones.
7	**Functional Tool Bar**	The left-side tool bar can bring you back to the **Stage Mode**, load an actor image file, optimize the actor details, change the actor proportion and render style, and invoke the Bone Editor, **Mask Editor** , **Facial Animation Setup**, **Render Style**, **Vector Grouping Tool** and **Sprite Editor** panels.
8	**Preview Window** (Working Area)	The modification to the actor can be observed in the **Preview Window**. You may select the angle switch to view and adjust the sprite in each angle. Click the left / right arrows to switch to the 0, 45, 90, 135, 180, 225, 270 and 315-degree view.
9	**Content Manager** (F4) and **Scene Manager** (F5)	The **Content Manager** contains embedded and custom templates, and the **Scene Manager** displays all the sprites included in the current actor.

Composer User Interface Introduction – Prop

The composer user interface for props is divided into 7 parts. Please refer to the links below for more details about each part.



	Name	Description
1	**Menu**	The menu contains each command in the **Composer Mode**.
2	**General Tool Bar**	The tool bar is able to undo and redo actions, select props, or attach more props to another prop.
3	**Camera Tool Bar**	The tool bar contains buttons to zoom in and out, pan or rotate the camera, or switch to different view modes of the camera.
4	**Property Tool Bar**	Property tools for transforming the selected props to enhance the details of the 2D/3D animation result.
5	**Functional Tool Bar**	The left-side tool bar can bring you back to the **Stage Mode**, and launch the **Render Style**, **Vector Grouping Tool** and **Sprite Editor** panels.
6	**Preview Window** (Working Area)	The modification to the props can be observed in the **Preview Window**.
7	**Content Manager** (F4) and **Scene Manager** (F5)	The **Content Manager** contains embedded and custom templates, and the **Scene Manager** displays all the attached props included in the current prop.

Concept of Sprite Animation

Most **CrazyTalk Animator** projects are sprite-based. The characters, the faces of characters and the props are all composited by one or more sprites.

- Sprite Concept
- Sprite, Poses and Angles
- Preparing a Custom Sprite
- Transforming Sprite Elements
- Modifying the Textures of Body Parts
- Modifying the Textures of Props
- Sprite Switch Animations
- Releasing Sprite Switches

Sprite Concept

What is a Sprite?

A **Sprite** can be best understood as a group that consists of lots different media files. Though it can have multiple elements, it only shows one of them at a time. Sort of like a slide show.



The elements of a sprite can be media files with different formats:

- **Image**: *.jpg, *.jpeg, *.bmp, *.gif, *.png, *.tga.
- **Video**: *.swf, *.avi, *.wmv, *.mpg, *.mpeg, *.mpe, *.flv, *.rm, *.rmvb, *.mp4, *.asf, *.asx, *.wm
- **Reallusion Specific Format**: *.popVideo

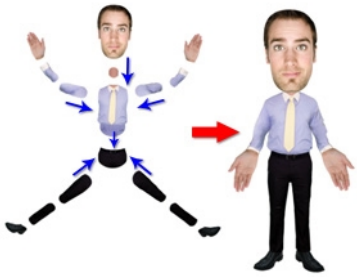
What can Sprites do in CrazyTalk Animator?

In **CrazyTalk Animator**, a character is composed of different body parts, and each body part is a sprite. The facial features of a composed head are sprites, too.

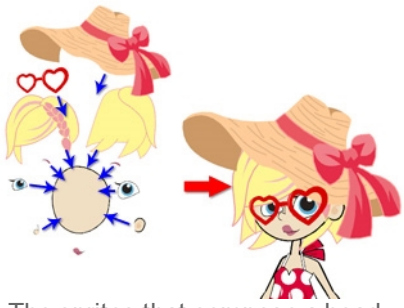
Also, each prop can be formed by one or more sprites.

Composing Objects

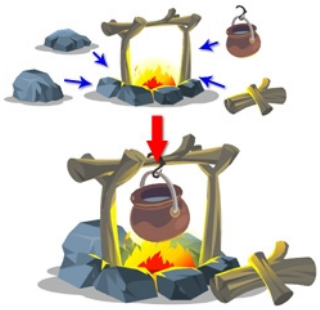
By composing different sprites together, you are able to create custom characters, faces and props.



The sprites that compose a character



The sprites that compose a head



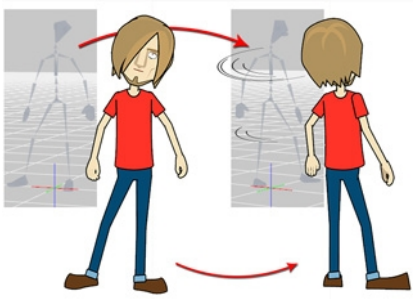
The sprites that compose a prop

Since the facial-fitted head of a character has different structures, then it does not support the usage of sprites.

Multiple Angles Animations for Characters Pro & Pipeline

In **CrazyTalk Animator**, the character is capable of performing dimensional motions and expressions, which is generated by displaying different components within sprites that compose the character's body and face.

Please refer to the Sprite, Poses and Angles section for more information.



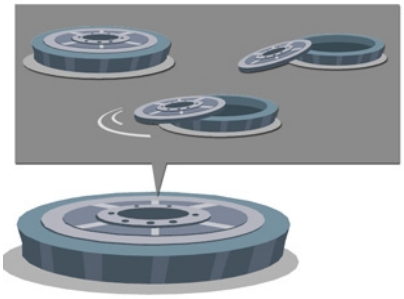
The sprites on the bones changes in accordance with the angles in order to generate the dimensional animations of the character.

Sprite, Poses and Angles

A sprite can have multiple elements. These elements can be images or videos and are divided into two types according to the target the sprite is applied to. The targets can be **Props**, **G1 Characters** and **G2 Characters**.

Sprites of Props

The images or videos in a sprite that builds up a prop are named **Elements**, as the vintage name in **CrazyTalk Animator 1**.



The prop is composed of single sprite with three **Elements**.

Sprites of Character

Each **CrazyTalk Animator** character is composed of sprites stuck to the bones of body parts; every sprite can have one or more poses for creating sprite animations.

Poses in Sprite

The images or videos in a sprite that builds up a character are called **Pose**, no matter if the character is **G1** or **G2** ones.



The upper body is composed of a sprite with multiple **Poses**.

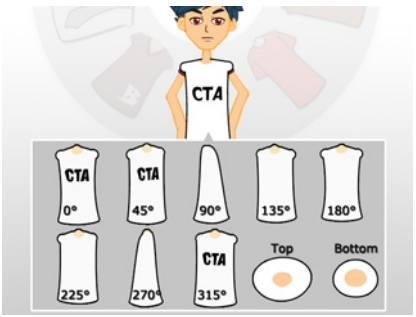


Change to different poses for creating sprite switch animation.

Angles in Poses

However, for **G2** characters that are able to perform dimensional motions, the poses must contain more media represent the pose from different 10 perspective views, and these media are thus called **Angles**. The angles from 10 perspectives are views from top, bottom, 0, 45, 90, 135, 180, 225, 270, and 315 degrees. With these **Angles**, character are able to perform not only the 2D flat motions, but also 3D dimensional motions.





The poses of a **G2** character have their own **Angle** components for correctly performing all 3D motions.

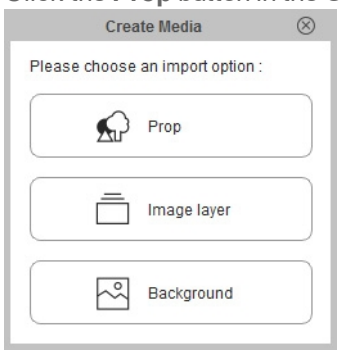
Preparing a Custom Sprite

You can load different types of media, videos or images to create a sprite. When a sprite contains a series of image or videos, then you may create Image Replacement Animations in Stage mode with setting keys.
*Please note that this feature is for the **Pipeline** and **Pro** versions only.

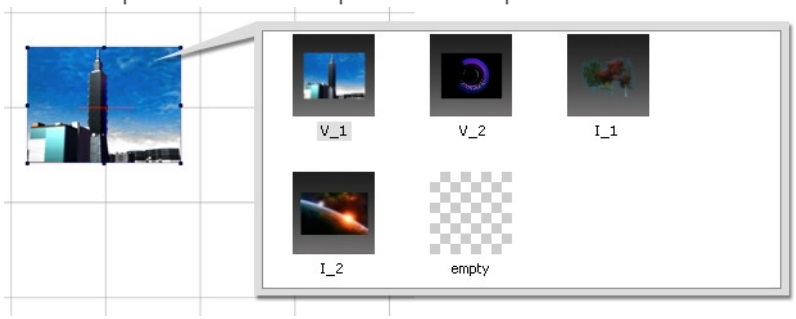
Loading Media to Form a New Sprite

Prop

1. In **Stage Mode**, click the **Create Media** button on the **Function Bar**.
2. Click the **Prop** button in the **Create Media** panel.



3. Load multiple media files. A sprite with multiple media files will be created afterward.



Two More Methods to Create a Sprite or to Add More Media to a Sprite

If you want to create a sprite, or append more media onto an existing sprite, then you may use the two methods below:

- **Sprite Editor** in actor or Composer mode.
- **Drag and Drop** from media source folders.

The added media in the sprite are named **Poses**. Any sprite can have multiple poses so that you can use these pose to generate **Sprite Animations**.

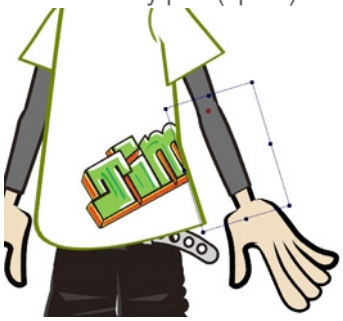
Using the Sprite Editor Pro & Pipeline

A. **Character**

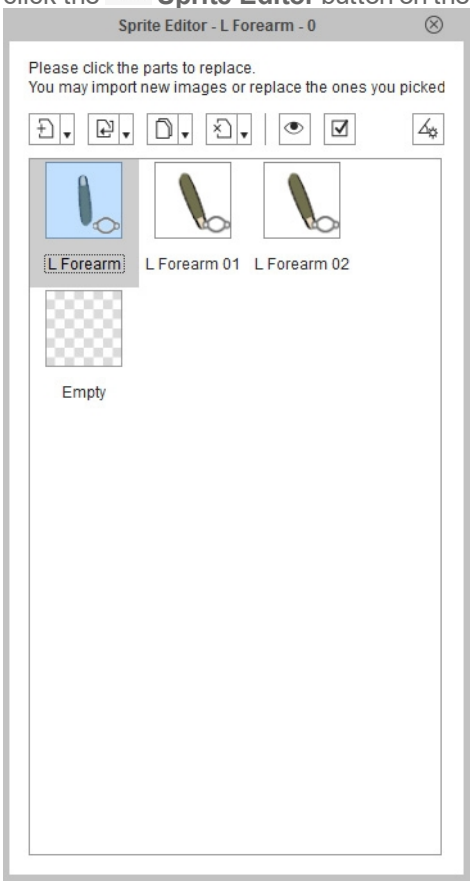
1. Select an existing character.



2. Click the **Composer** button on the **Function Bar**.
3. Select a body part (sprite).



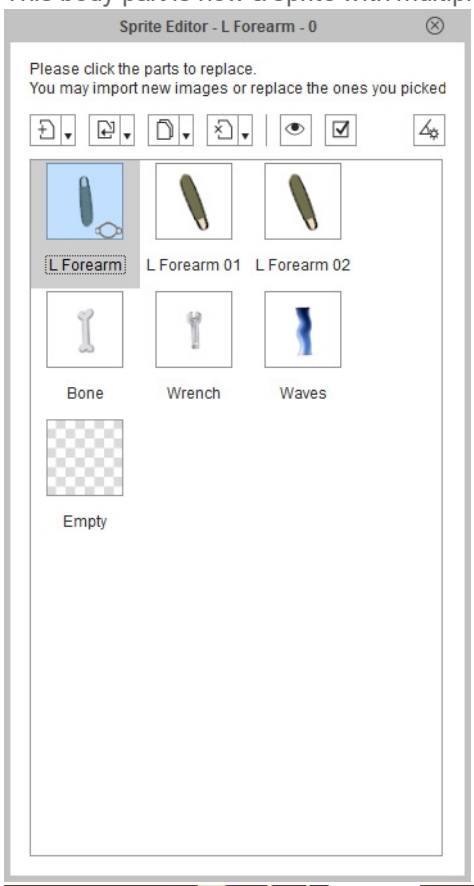
4. click the **Sprite Editor** button on the **Function Bar**. The **Sprite Editor** panel shows.

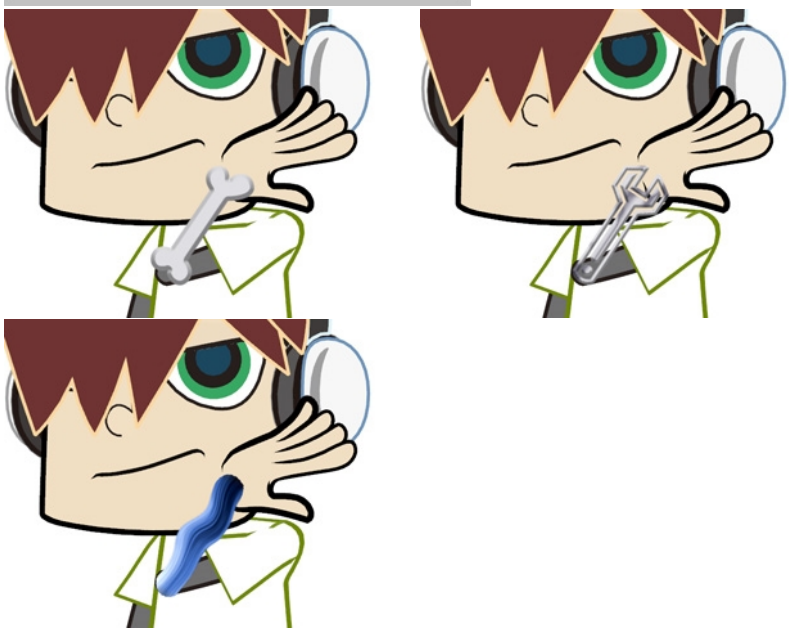


- You may click another body part without closing the **Sprite Editor**.

5. Click the **Add New Sprite** button. Load one or more media files.

6. This body part is now a sprite with multiple poses. All the poses are now listed in the panel.





The possible look of the body part

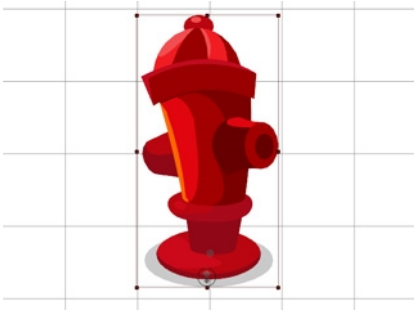
Note:

If you want to create a character that is able to perform 3D dimensional motions, then you need to add up to 10 angles for the poses. Please refer to the sections below for more information:

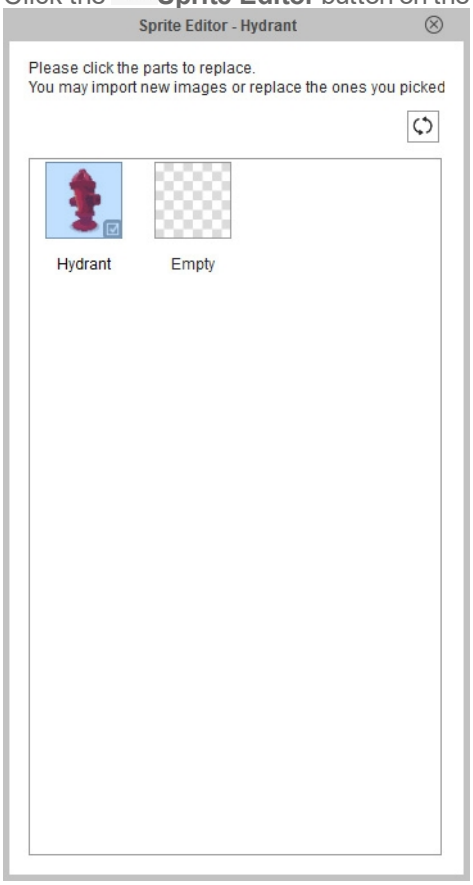
- Sprite, Poses and Angles
- Using Sprite Angle Panel

B. **Prop**

1. Select an existing prop.

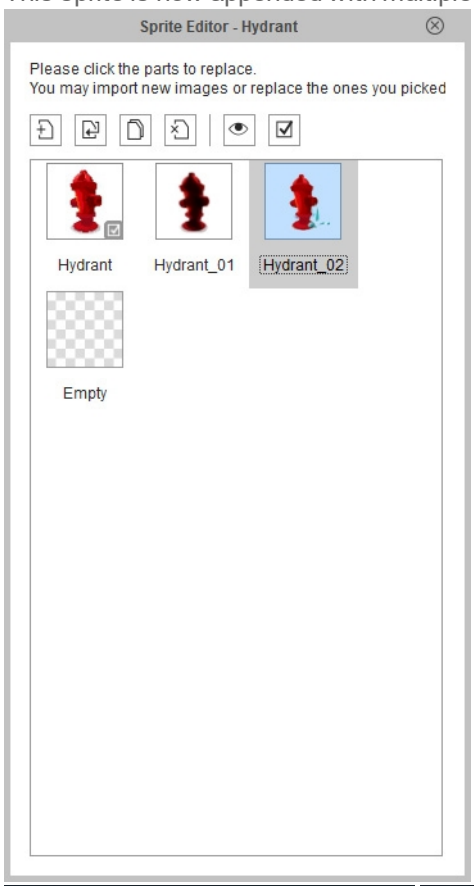


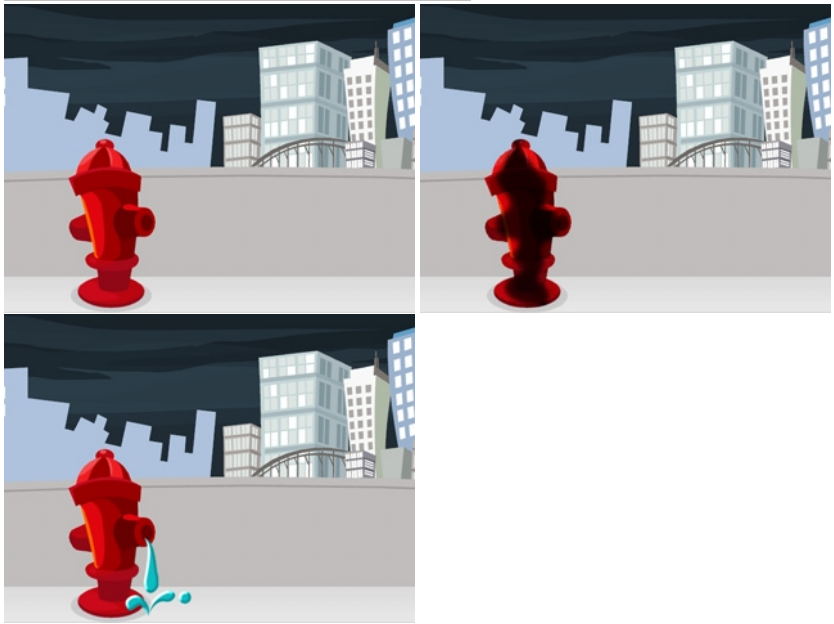
2. Click the **Composer** button on the **Function Bar**.
3. Click the **Sprite Editor** button on the **Functional Tool Bar**. The **Sprite Editor** panel shows.



4. Click the **Add New Sprite** button in the **Sprite Editor** panel. Load one or more media files.

5. This sprite is now appended with multiple media files. All the media files are now listed in the panel.





Different possibilities for a prop

Note:

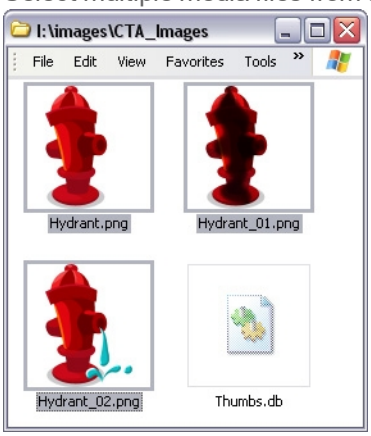
- The elements of a sprite can be media files in different formats:
  - **Image**: *.jpg, *.bmp, *.gif, *.png, *.tga.
  - **Video**: *.avi, *.wmv, *.rm, *.rmvb, *.mpg, *.mpeg, *.mpe, *.mp4, *.asf, *.asx, *.wm, *.flv, *.mov, *.swf
  - **Reallusion Specific Format**: *.iWidget, *.popVideo

- You may select a video file and click the **Preview** button to preview the results.
- Select an element thumbnail in the list. Click the **Replace Current Sprite** button to load a new file that will replace the selected one.
- Select an element thumbnail in the list and press the **Delete** key to remove the element from the list.
- No matter which media file is selected from the list in the **Composer Mode**, the sprite will always shows the first one in the **Stage Mode**.

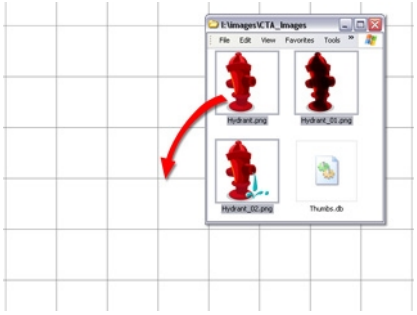
Drag and Drop from Media Source Folders

A. **Creating a Prop with Multiple Media**

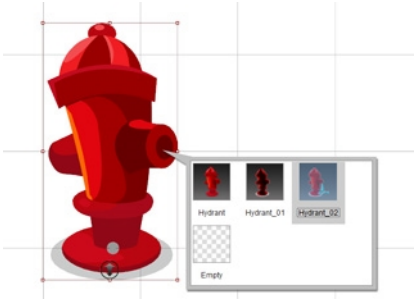
1. Select multiple media files from the source folder in **Stage Mode**.



2. Drag and drop into the working area of **CrazyTalk Animator**.

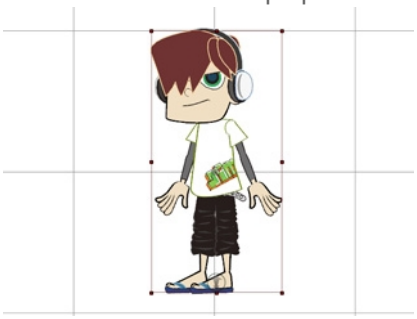


3. A new sprite prop containing several media files is generated.

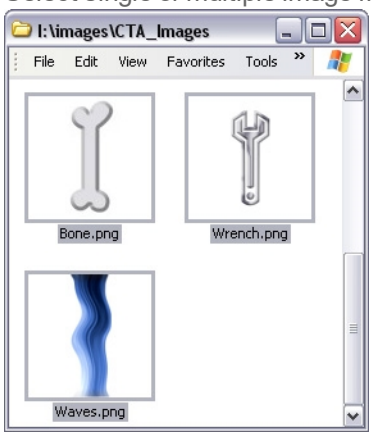


B. **Appending Media to a Sprite**

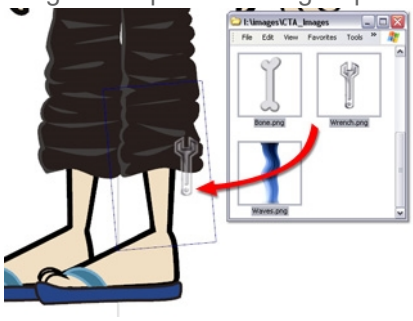
1. Select a character or a prop. Switch to the **Composer** mode.



2. Select single or multiple image files in the source folder.



3. Drag and drop onto the target sprite in the working area of **CrazyTalk Animator**.



4. Pick the sprite and click the **Sprite Editor** button. The media will then be converted into the poses of the sprite.



Note:

If you want to create a character that is able to perform 3D dimensional motions, then you need to add up to 10 angles for the poses. Please refer to the sections below for more information:

- Sprite, Poses and Angles
- Using Sprite Angle Panel

Replacing an Existing Pose or Element in Sprite

When you want to replace poses (of a character's facial features or body parts) or elements (of props) with prepared image-based or vector-based files by using the buttons at the bottom of the **Sprite Editor** panel, you may need to follow the steps below.

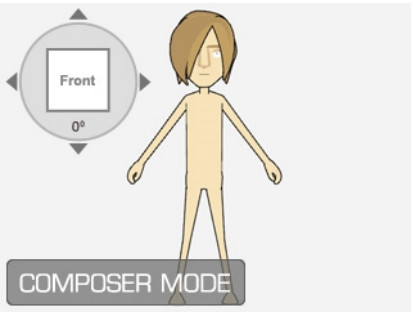
Prop's Element and Character's Single Angle of Pose Pro & Pipeline

This method replaces only one element in the sprite of a prop; and a single angle pose for a character's facial features or body parts.

1. Select an object (prop or character) and enter the **Composer Mode**.

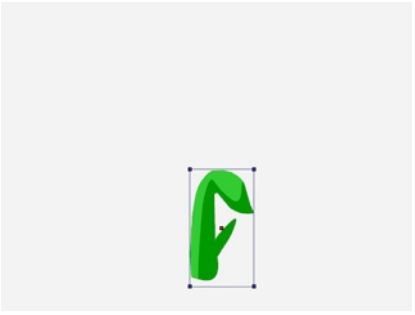


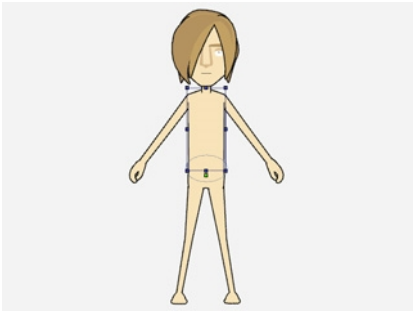
Prop in Composer Mode



Character in Composer Mode

2. Pick a sprite and open the **Sprite Editor**.

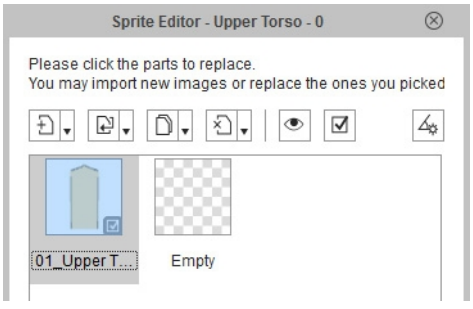




3. Select the element (for prop) or one of the poses (if there are multiple poses for the character).



The element of the prop is selected

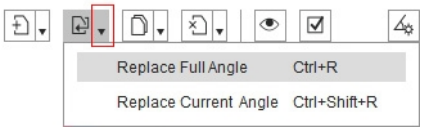


The pose of a character's body part is selected

4. Click the **Replace Current Sprite** button (for prop) or the **down arrow** >> **Replace Current Angle** (for character) at the bottom of the panel.



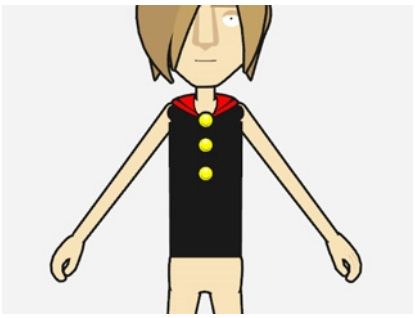
Click the **Replace Current Angle** button (for props)



Click the down arrow besides the **Replace Current Angle** (for characters) and select the **Replace Current Angle** command

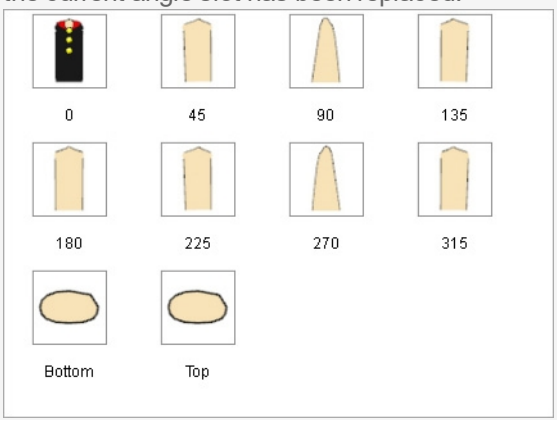
5. Load a prepared file to replace the current one.





Note:

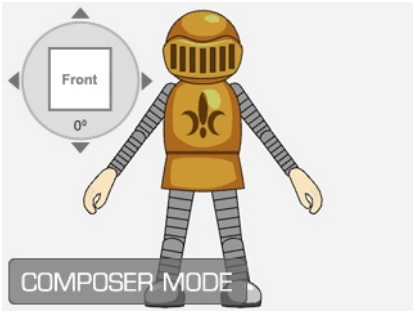
For the character, you are able to open the **Angle Table**, where you'll be able to see that only the content in the current angle slot has been replaced.



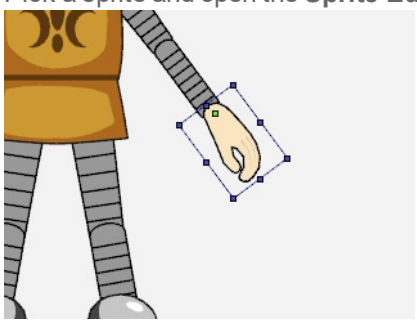
Complete Character Angle Profile Replacement Pro & Pipeline

Use this method to replace character poses that look identical at all 10 angle profiles.

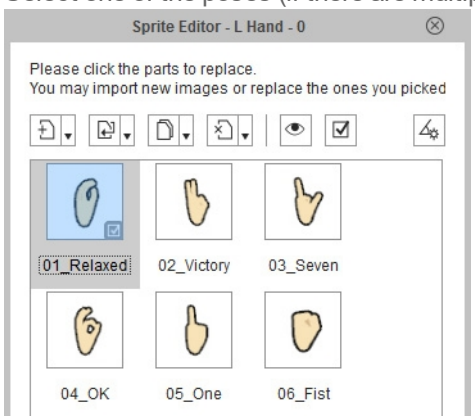
1. Select a character and enter the **Composer Mode**.



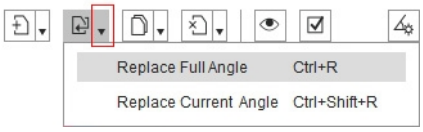
2. Pick a sprite and open the **Sprite Editor**.



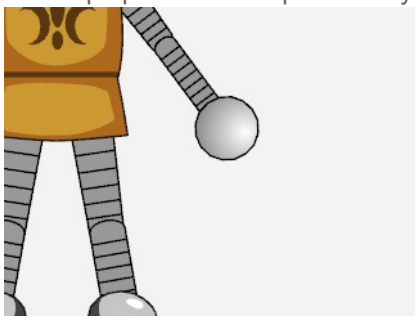
3. Select one of the poses (if there are multiple poses for the character).



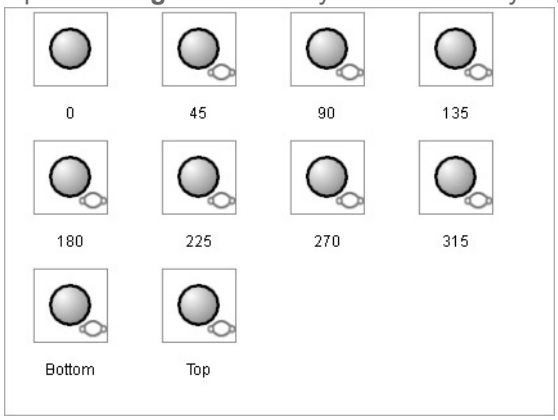
4. Click the down arrow beside the button at the bottom of the panel.
5. Choose the **Replace Full Angle** command.



6. Load a prepared file to replace every angle of this pose with the loaded file.



7. Open the **Angle Table** and you will see every angle is replaced with the newly-loaded file.



Using Sprite-Angle Panel

Pro & Pipeline

Each **CrazyTalk Animator** character is composed of sprites stuck to the bones of body parts; every sprite can have one or more poses for creating sprite animations. However, for G2 characters that are able to perform dimensional motions, these poses must contain more media from different 10 perspective views, and these media are thus called **Angles**.



CrazyTalk Animator provides **Sprite-Angle** panel so that you are able to view the angles of a pose. The benefits of using **Sprite-Angle** panel are:

- Examining angles of pose.
- Sharing media for different angles.

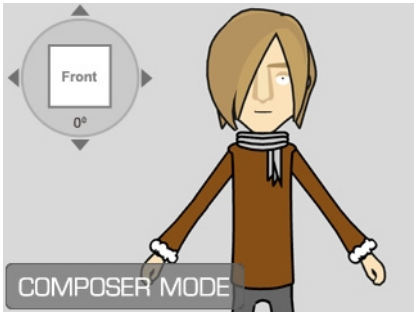
Examining Angles of Pose

After you have created a G2 character, or convert a G1 character into a G2 character, you may use the **Angle Table** to examine if any angle is missing.

Activate Sprite Angle Panel in Composer Mode

If **Composer Mode**, there are two ways to showing the **Sprite Angle** panel:

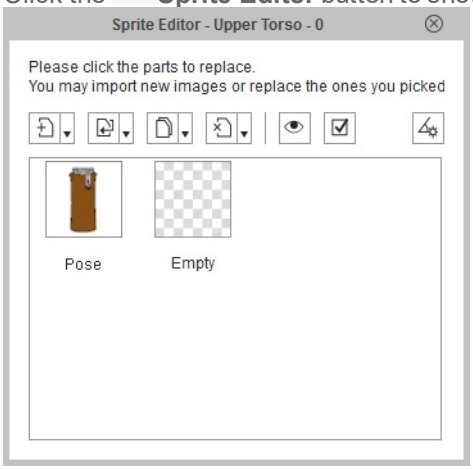
- **Through Sprite Editor**
  1. Select the character and enter the **Composer Mode**.



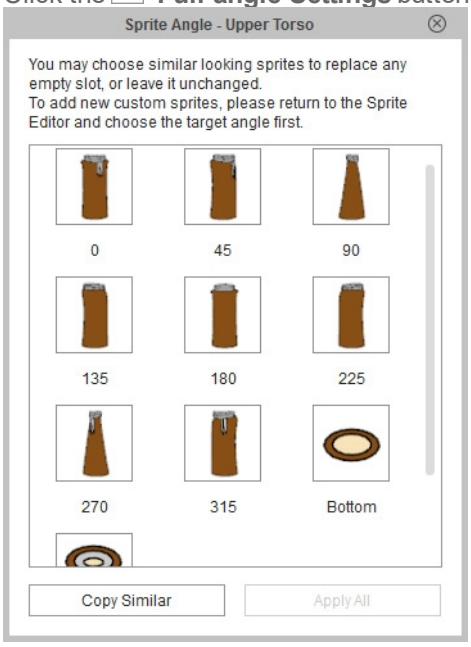
  2. Pick the body part that you want to examine.



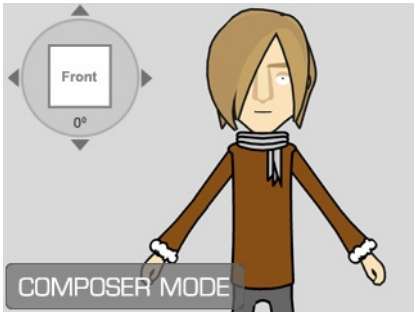
3. Click the **Sprite Editor** button to show the panel.



4. Click the **Full-angle Settings** button to display the panel for listing the angle media.



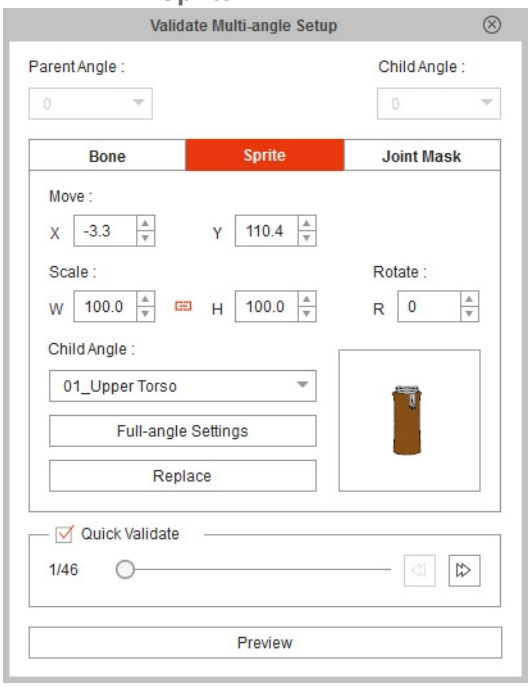
- **Through Validate Multi-angle Setup Panel**
  1. Select the character and enter the **Composer Mode**.



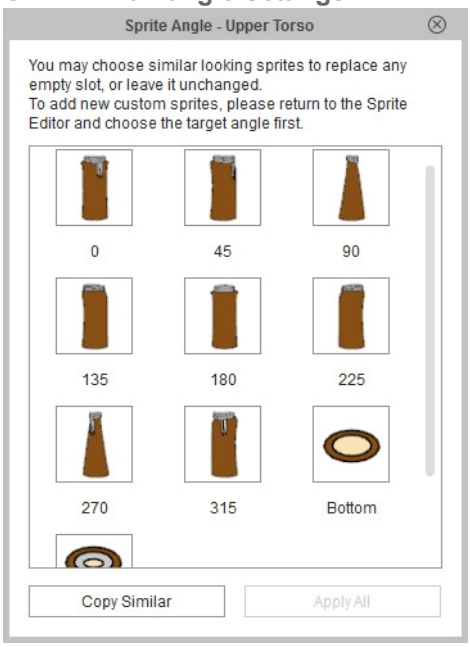
2. Pick the body part that you want to examine.



3. Click the **Validate Multi-angle Setup** button to show the panel.
4. Switch to the **Sprite** tab.



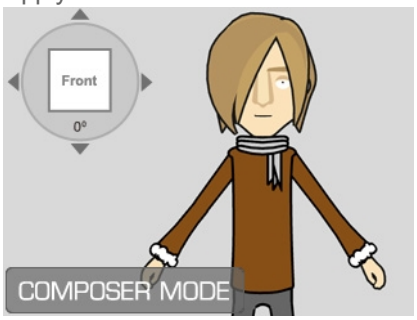
5. Click the **Full-angle Settings** button to display the panel for listing the angle media.



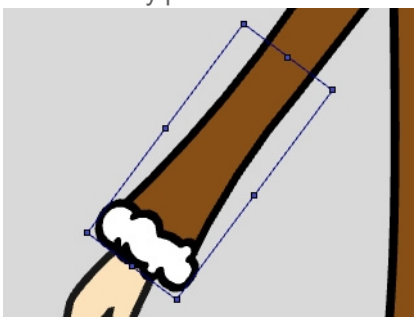
Sharing Media for Different Angles

By using the **Sprite Angle** panel, you are able to share an angle to any other which lacks one. This method assists you to save a lot of time for adding angles one by one and is useful for the body parts that appear identical in different perspectives.

1. Apply a character and switch to the **Composer Mode**.



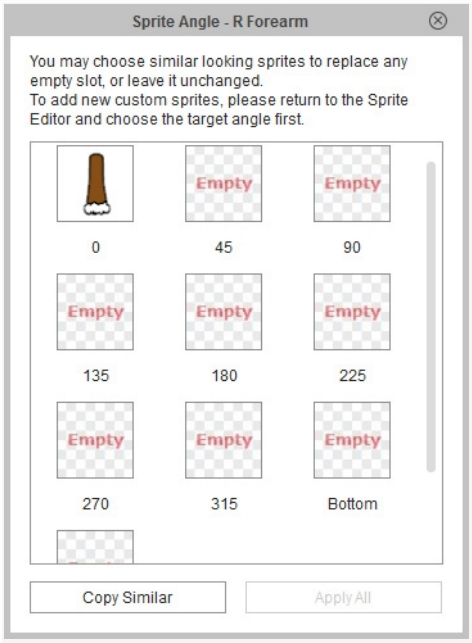
2. Select a body part.



3. Open the **Sprite Angle** as described in the previous section.

Note:

The angles slots marked as **Empty** will cause a body part missing in motion.



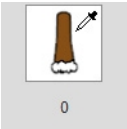
Missing angles in the table.



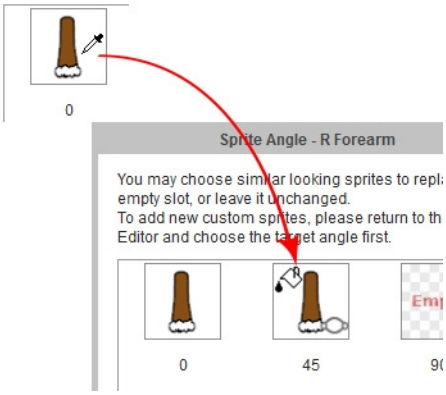
Missing body part in motion.

4. If the body part can appears to be identical in different perspectives, then click the Copy Similar **Copy Similar** button.

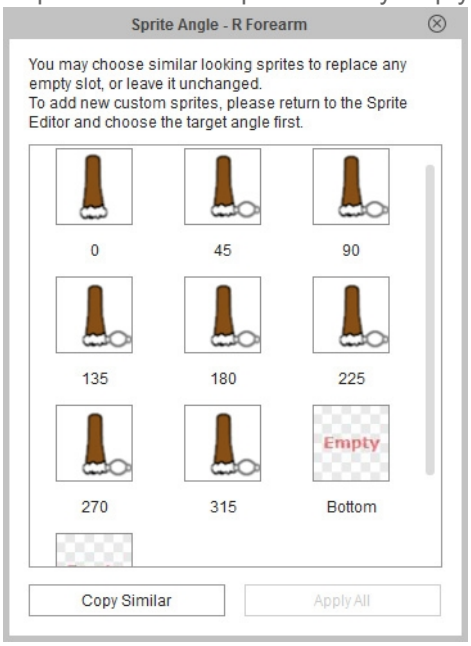
5. When the cursor turns to an eyedropper, click on the target angle for sharing.



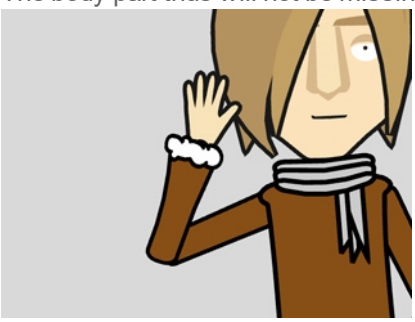
6. As the cursor turn to be a paint bucket, click on the **Empty** angle slot to fill it referring to the picked angle image.



7. Repeat the same steps until every empty angle slot refers to the target one.



8. The body part thus will not be missing in motion.



Transforming Sprite Elements

Pro & Pipeline

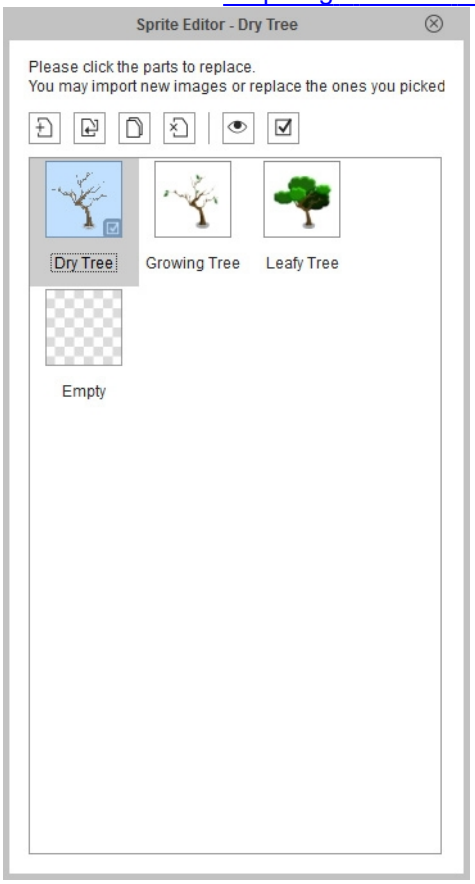
Each element in a sprite has different sizes and angles. But if you need to align, rotate or scale the elements, then you may do this in the Composer. This task is helpful for Sprite Switch Animations.

1. Please select a prop and click the **Composer** button in **Stage Mode**.

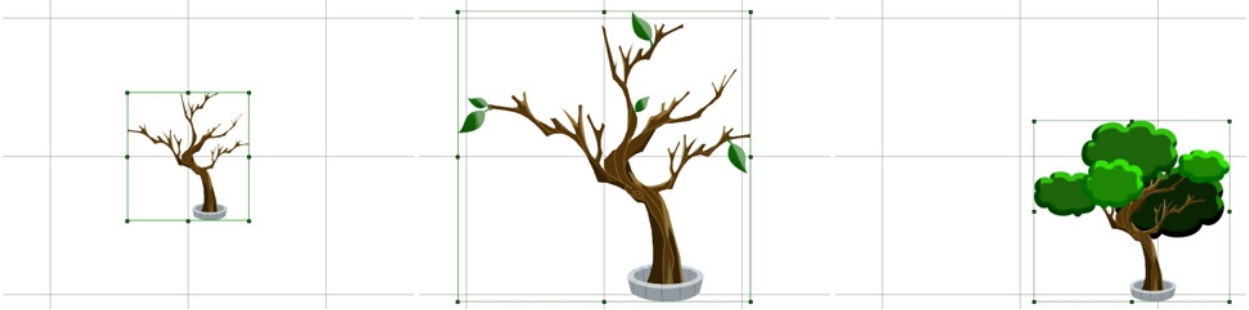


2. In the **Composer Mode**, pick the sprites of the prop.

3. Click the **Sprite Editor** button on the **Functional Tool Bar**. All the elements are listed in the panel. Please refer to the Preparing a Custom Sprite section for more information about adding more elements to the sprite.

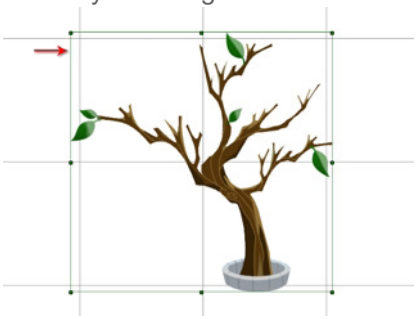


4. In the list, pick elements one by one to review their position, size and orientation.

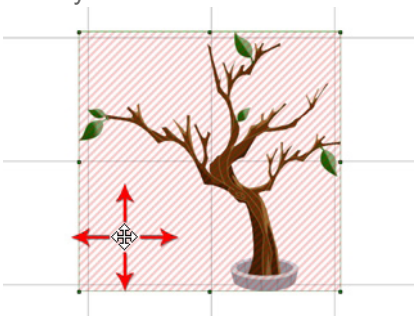


Elements with different sizes and positions

5. You may see the green transform handle box shown around the element.

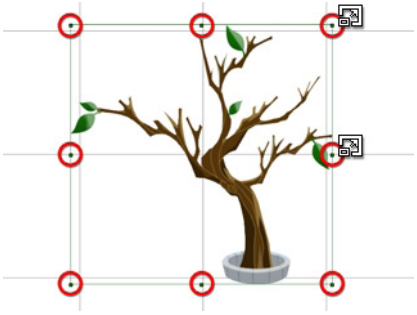


6. Move your cursor to the inside of the box. Drag to relocate the element.



The area for moving

7. Drag the eight control points around the box to scale the element.
   Please note that the four corner points proportionally scale the element while the points on the sides do not.



8. Drag the rotation area outside the box to rotate the element.



The area for rotating

9. Modify the transform point of each elements until they are all aligned.



Elements aligned

Note:

- When editing, constantly pick other elements of the sprite in order to correctly align all the elements.

Modifying the Texture of Body Parts

Pro & Pipeline

If you want to change the texture of any element in a sprite, then you need to enter the **Composer Mode**.

For **Image-based** elements, you can use any **External Image Editor** for editing.

If you want to modify the mask of an element, then please refer to the Editing the Background Mask section for more information.

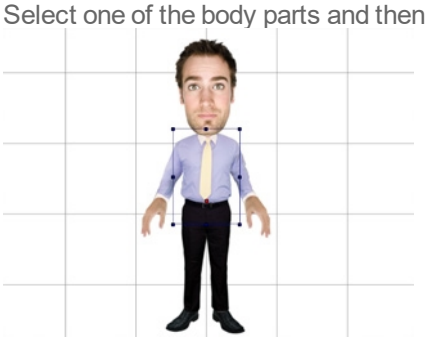
Editing Textures of Image-based Elements

If you want to use an external image editor to modify an image-based element, then follow the steps below:

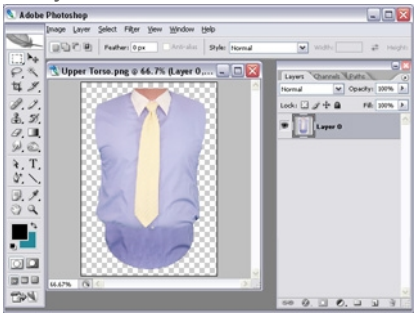
1. Pick a character in the **Stage Mode**. Click the **Composer** button to switch to the composer mode.



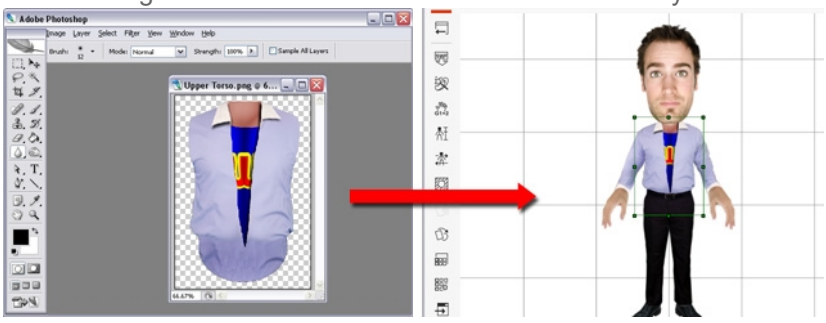
2. Select one of the body parts and then click the **Launch External Image Editor** button.



3. **CrazyTalk Animator** will then launch your specified image editor (e.g. Photoshop) with the texture opened in it ready for advanced modifications.



4. Edit the image and save. The data will then be automatically transferred into **CrazyTalk Animator**.



5. Click the **Back to Stage** button to update the character in the **Stage Mode**.



Note:

- Only image-based elements may be modified with an external image editor. If the element is video or SWF-based, then the **Launch External Image Editor** button will be disabled.

Modifying Texture of Prop Sprite Elements

Pro & Pipeline

If you want to change the texture of any element in a sprite, then you need to enter the **Composer Mode**.

For **Image-based** elements, you can use any **External Image Editor** for editing.

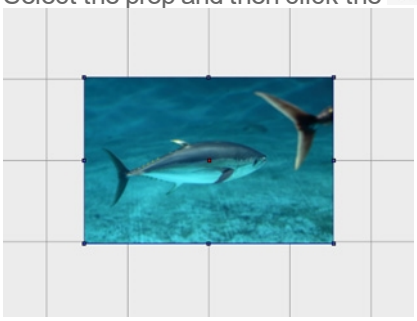
Editing Textures of Image-based Elements

If you want to use an external image editor to modify an image-based element, then follow the steps below:

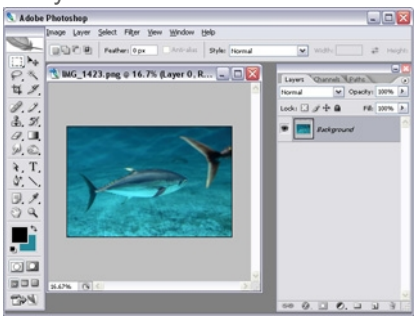
1. Pick a prop in the **Stage Mode**. Click the **Composer** button to switch to the composer mode.



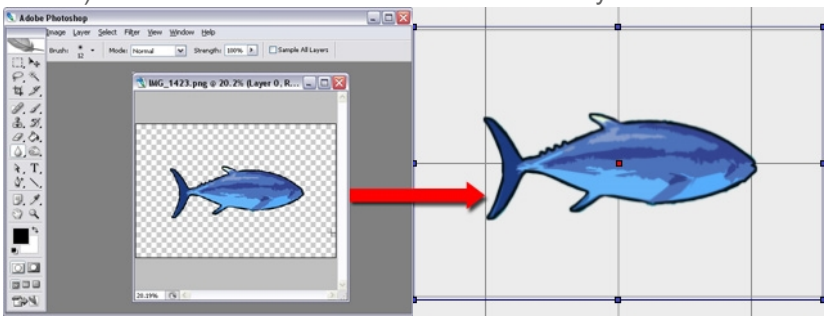
2. Select the prop and then click the **Launch External Image Editor** button.



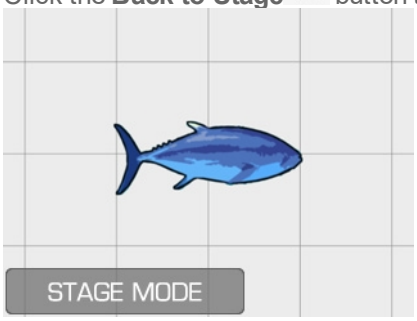
3. **CrazyTalk Animator** will then launch your specified image editor (e.g. Photoshop) with the texture opened in it ready for advanced modifications.



4. Edit the image (In this case, the background is erased, the fish's color is adjusted and applied with special effects) and save. The data will then be automatically transferred into **CrazyTalk Animator**.



5. Click the **Back to Stage** button to update the prop in the **Stage Mode**.



Note:

- Only image-based elements may be modified with an external image editor. If the element is a video or SWF-based, then the **Launch External Image Editor** button will be disabled.

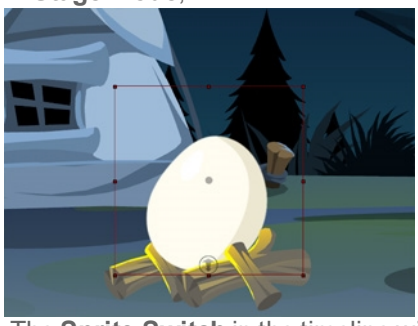
Sprite Switch Animations

Once you have a sprite that consists of multiple media, then you may use it to create sprite switching animations. By selecting one of the sprite's media in different time frames, the sprite shows different appearances when played back.

Take note that this feature supports both characters and props.

Creating Sprite Switch Animations

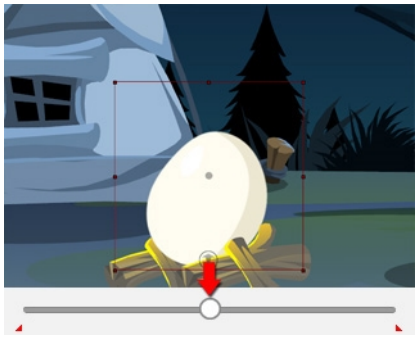
1. In **Stage Mode**, click to select a character or a prop.



The **Sprite Switch** in the timeline will be displayed in the form shown below:



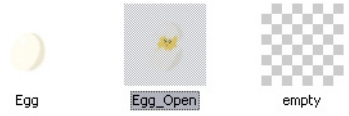
2. Click the  **Sprite Editor** button.
3. Go to another time frame.



The **Sprite Switch** in the timeline displays in the form shown below:



4. Pick one of the media files in the **Sprite Editor** panel. A switch key is automatically set.
   Please note that in this example, the picked element is an animation.



5. Play back the project. When it comes to the frame where the key is set, the picked file from the last step will show.

Releasing Sprite Switches

Since a **Sprite Switch** in the **S** sub track is a lasting status, and has the highest priority than any other switch data compacted in clips, then it will be overridden by it.

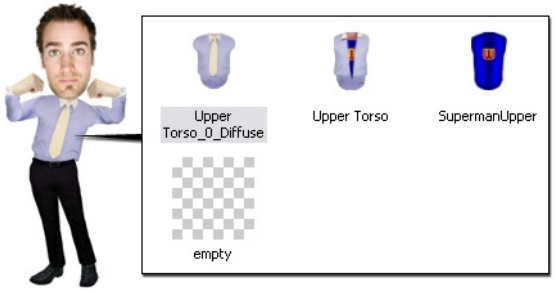
CrazyTalk Animator provides the **Release** feature to eliminate the effect in the **S** sub track until another new switch is set.

It is highly recommended to refer to the Clip and Key Priority - Motion section before you read this page.

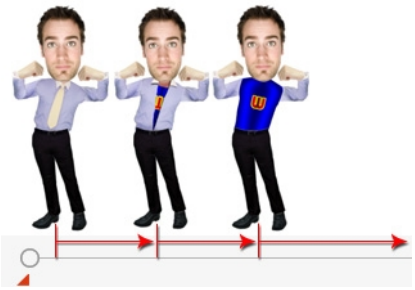
Release Key - without Motion Clip

When there is no other motion clips involves, the set of a **Release** key will use the **First** element (initial sprite status as mentioned above) in the sprite editor.

1. Given a sprite with multiple elements.



2. Set different sprite switches in various time frames. The sprite remains the same after the last switch until the end of the project.



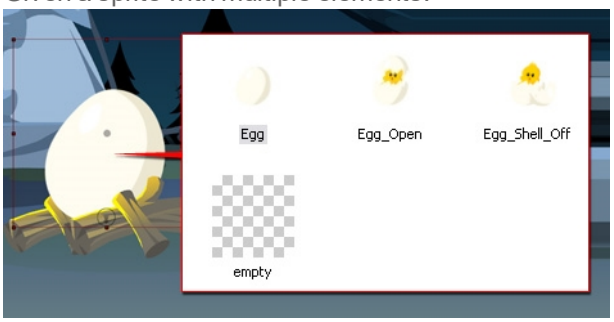
3. Go to the time frame after the last switch and set a release key by clicking the **Release** button on the **Sprite Editor** panel.
4. The sprite displays the first element since the priority of the sprite track is forced to do so in the motion track (initial sprite status).



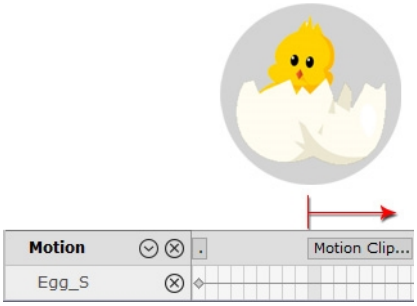
Release Key - with Motion Clip Containing Switch Effects

Since the **S** track has the highest priority, any other switch effects in a motion clip will be overridden. If you want to display the switch effects compacted in a motion clip, then you need to use the **Release** feature to temporarily hand out the priority.

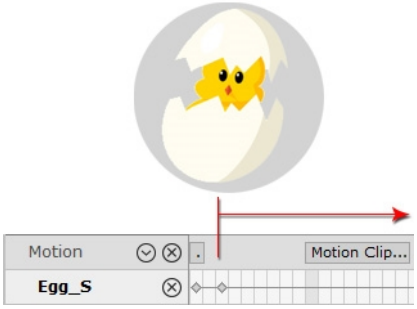
1. Given a sprite with multiple elements.



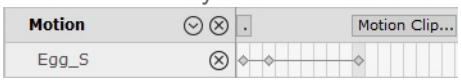
2. Apply a motion with switch effects in it.



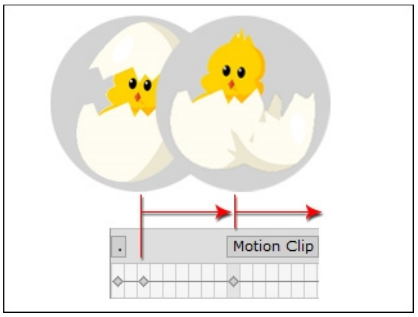
3. Set sprite switches before the motion. You will see that the switch effect in the motion clip will be overridden by the last switch in the **S** track.



4. Set a **Release** key at the start frame of the motion by clicking the **Release** button on the **Sprite Editor** panel.



5. The switch effect in the motion will be kept.



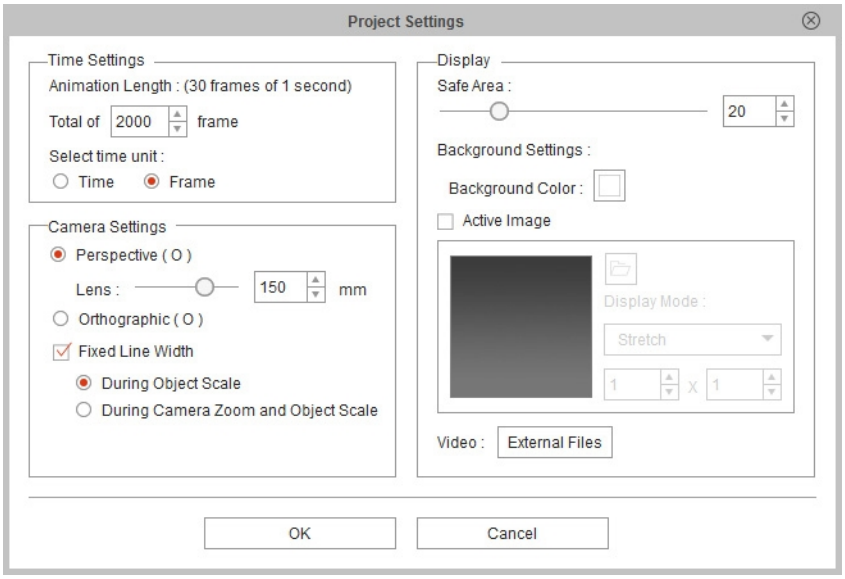
Project Settings

In the **Project Settings** panel you may adjust the length of the project, the time unit shown on the time counter, the viewing method of the camera and the background.

Click the **Project Settings** button to open the **Project Settings** panel.



Project Settings Button



Project Settings Panel

Time Setting Section

- **Animation Length**: Shows the total length of the project in frame count. The default length for each project is 900 frames. The maximum frame number is 27000.
- **Select Time Unit**: You may decide to display the time unit in either frame format or time format.

Camera Setting

The camera setting decides the viewing method of the camera.

- **Perspective** (Keyboard Shortcut: O): This method shows the Z-depth relation of each item inside. The size of the objects, in theory; alter automatically in accordance to the distance of the item.



Two items of identical size viewed 3D view



The farther item looks smaller than the front one
(**Perspective** mode)

When the camera moves, the closer objects sway faster while the farther ones sway slower.

- **Orthographic** (Keyboard Shortcut: O): This method shows the project regardless of the Z-depth of each object inside. This method is used by most image editing software since Z-depth is unnecessary for them. Therefore, the size of each object looks the same even if it is far away from the camera.



Two items of identical size viewed in 3D view



The distance does not affect the size of the item. (**Orthographic** mode)

When the camera moves, each object sways at the same speed.

- Adjust the **Lens** slider to increase or decrease the strength of the Z-depth relationships among the items.

Lens = 35 (Fish Eye effect)	Lens = 200
The Z-depth relationship is strong.	The Z-depth relationship is less.

Fixed Line Width

The setting within this group can determine the outlines of the objects in the scene to be still or ever-changing by scaling or zoom in/out.

- **During Object Scale**: This setting determines if you want the outlines to change along the scaling of the objects.



OFF
(Some body parts are scaled up)



ON
(The line widths are unified and fixed)

- **During Camera Zoom and Object Scale**: This setting determines if you want the outlines to change along the scaling, zoom in and out or z-value changing of the objects.



OFF



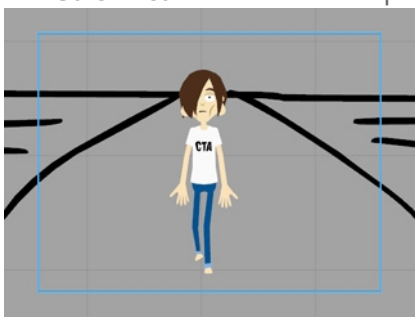
ON

Note:

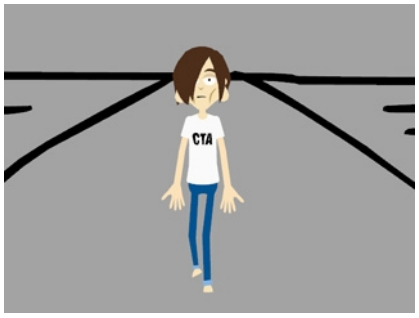
Please note that you may need to manually set the line width after one of these two settings is activated.

Safe Area

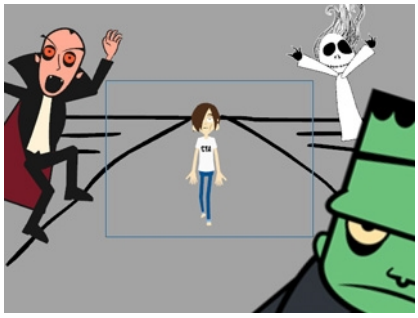
The **Safe Area** determines the exportable area on the stage. It is shown in blue rectangle as shown below:



- With the safe area, you are able to see or further edit the objects (character, props…etc.) that are outside of the stage but will be animated into the stage at specific times.

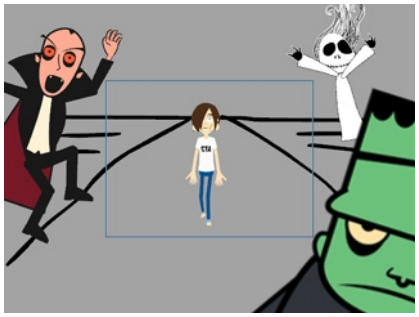


Stage without the **Safe Area** (in **CrazyTalk Animator 1**). You can only see the objects inside of the stage.

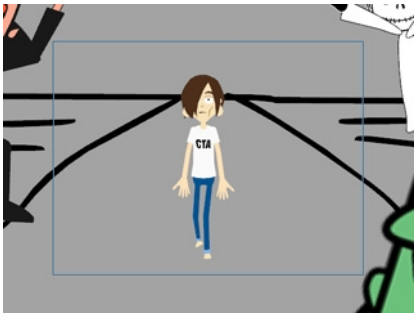


Stage with **Safe Area** (in **CrazyTalk Animator 2**). You are able to see and edit the objects outside of the stage.

- Drag the slider to show the ideal outside area.

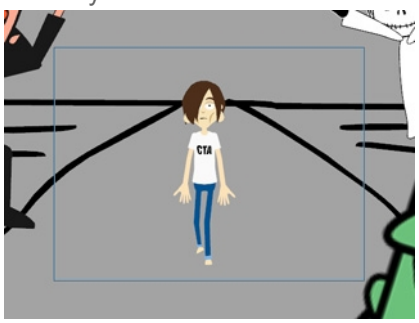


Safe Area = 100

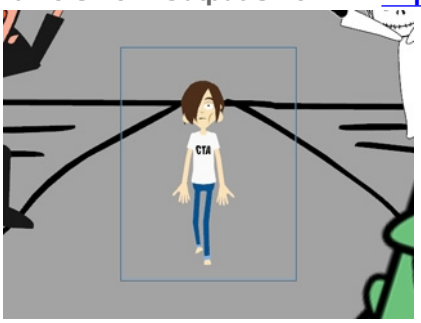


Safe Area = 50

- You may determine the size of the area by setting the **Frame Size** or **Output Size** in the **Export Settings** panel.

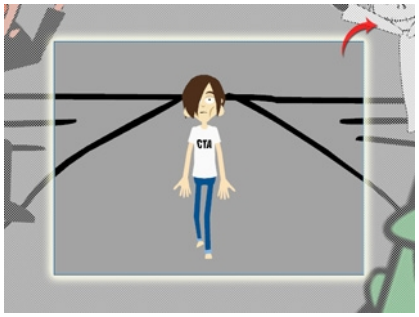
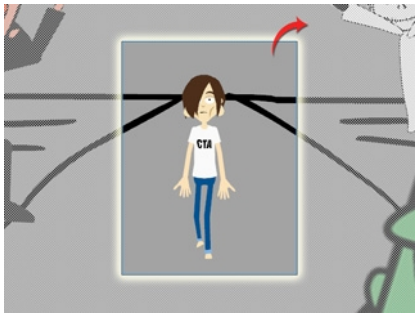


Safe Area = 50
Frame Size = 800 x 600



Safe Area = 50
Frame Size = 600 x 800

- Only the screen within the **Safe Area** can be exported to media (images, videos).

Only the objects within the **Safe Area** will be exported.

Background Setting

In this section, you may set the background of your project to a solid color or to a prepared image.

- Click the **Color Picker** to select a solid color as the background of the current project.
- Activate the **Active image** box and then click the button to load any prepared image as the background. Select from the **Display Mode** drop-down list to define the mapping method for the image background.



Prepared Image



Stretched



Fit



Tiled
2 X 4

Video - External Files

By default, **CrazyTalk Animator** compacts all loaded video files into a project file, which increases the total size of the project.

To prevent this, you may click on the **External Files** button to have all the video files saved as external files. This can solve the over-sized project issue. However, do remember to move all the video files together, along with the project file if you move the project to another folder destination.

Head Types (New for v3)

There are two main categories of heads in **CrazyTalk Animator**, **Morph-based** and **Sprite-Based**. And the **Sprite-based** head are divided into different types. You can create them by loading and fitting with an image, composing with various feature parts. Please refer to the following sections for more information:

- Morph-based Head
- Sprite-based Head
  - G1 Head with Single Angle
  - G2 Head with Multiple Angles
  - G2+ Head with Multiple Angles
  - G3 Head with Single Angle

Morph-based Head (New for v3)

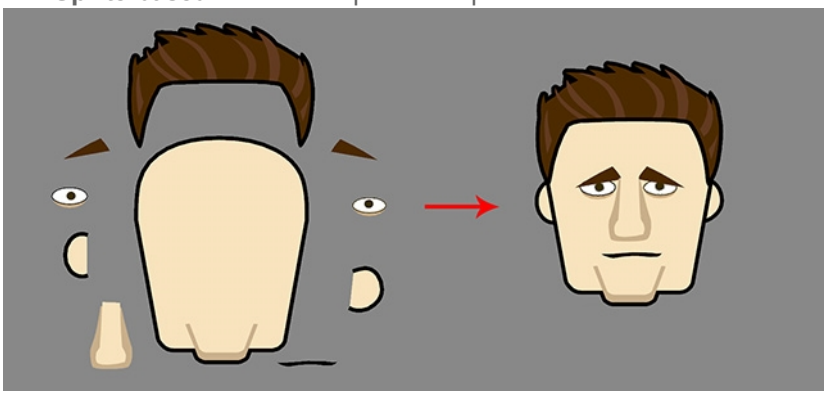
The Morph-based head is to project a face image onto a surface with dimensional and protruding shape of face. The eye-balls and teeth are then placed behind the surface as shown below:



This type of head can be created or edited by the **Face Creator**.

Sprite-based Head (New for v3)

The **Sprite-based** head is composed of sprites of a face and different facial features.



You are able to create and modify this type of head by means of the **Sprite Editor** in the **Composer Mode**.

Please note that the elements in each sprite can be:

- Image - In **JPG**, **JPEG**, **BMP**, **GIF**, **PNG**, **TGA** formats.
- Video - In **AVI**, **WMV**, **RM**, **RMVB**, **MPEG**, **MPG**, **MPE**, **MP4**, **ASF**, **ASX**, **WM**, **FLV**, **MOV** and **popVideo** formats.
- Vector images - In **SWF** format.

Therefore, the appearances of the face can be **Image**, **Vector** or **Mixed**.

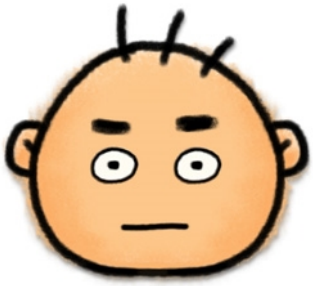


Image Sprite-based Head



Vector Sprite-based Head

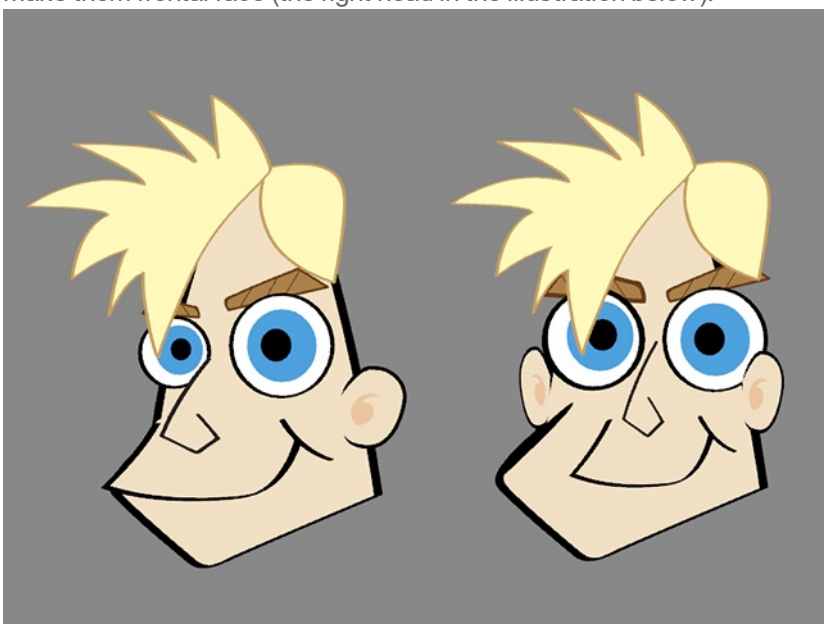


Mixed Sprite-based Head

You can get more facial sprites from "Facial Component Library - Comical Style".

G1 Head with Single Angle (New for v3)

The **G1** (generation 1) head can be found in **CrazyTalk Animator Version 1**. It is designed only to single direction (315 degrees by default, the left head in the illustration below). However, you are able to transform the facial features in order to make them frontal face (the right head in the illustration below).

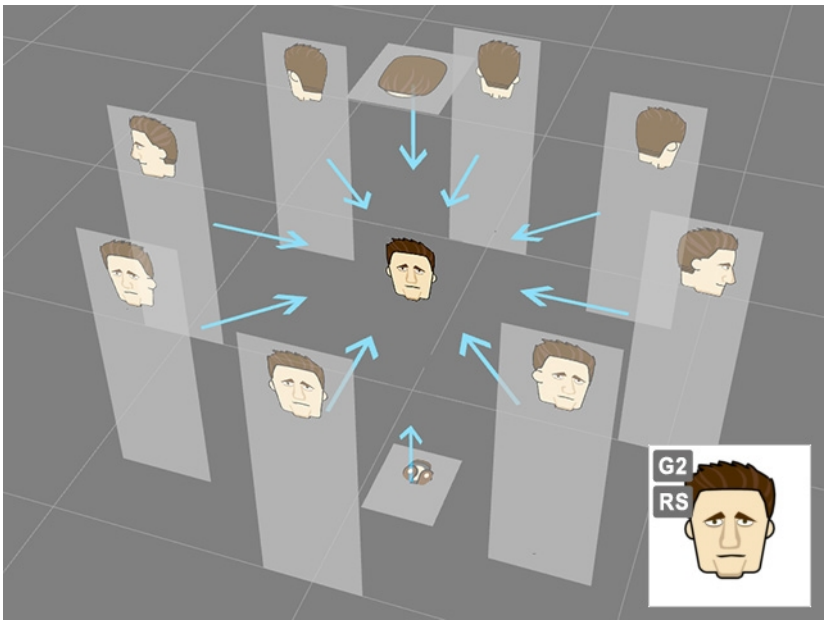


If you apply this type of head to **CrazyTalk Animator Version 2 or above**, The head will be put into different slots of 10 angles. Therefore, no matter which angle you turn the character to, the head looks identical. Please refer to the G2 Head with Multiple Angles section for more information.

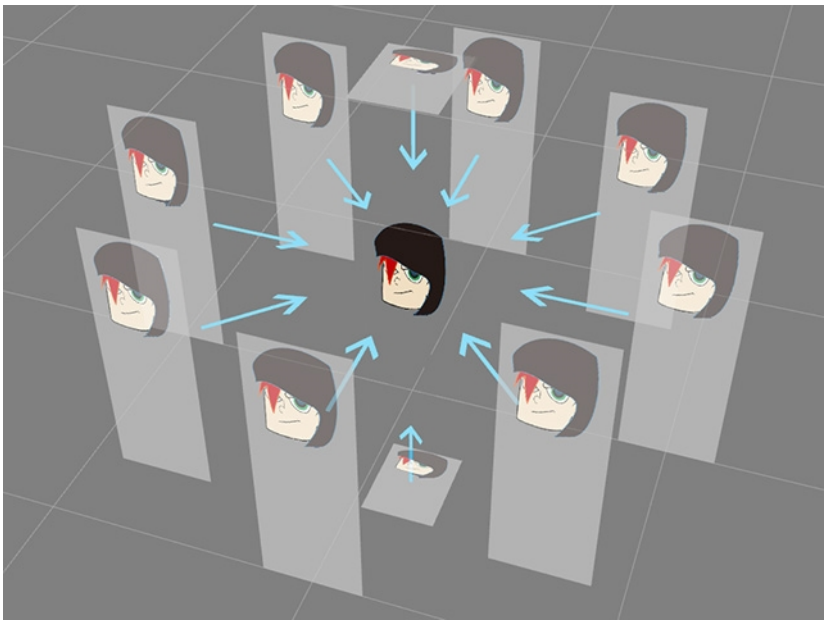
Most of the **G1** sprite-based heads of this type you see in the **Content Library** of **CrazyTalk Animator version 2 or above** are the heads being converted, even if it is marked **G1** at the corner of their thumbnails.

G2 Head with Multiple Angles (New for v3)

The default **G2** (generation 2) heads are created by **CrazyTalk Animator Version 2 or above**. It is designed to have 10 angles in order to have the character face to different direction when you turn the character. The thumbnails of this type of heads will be marked with **G2** at the corner as shown below.

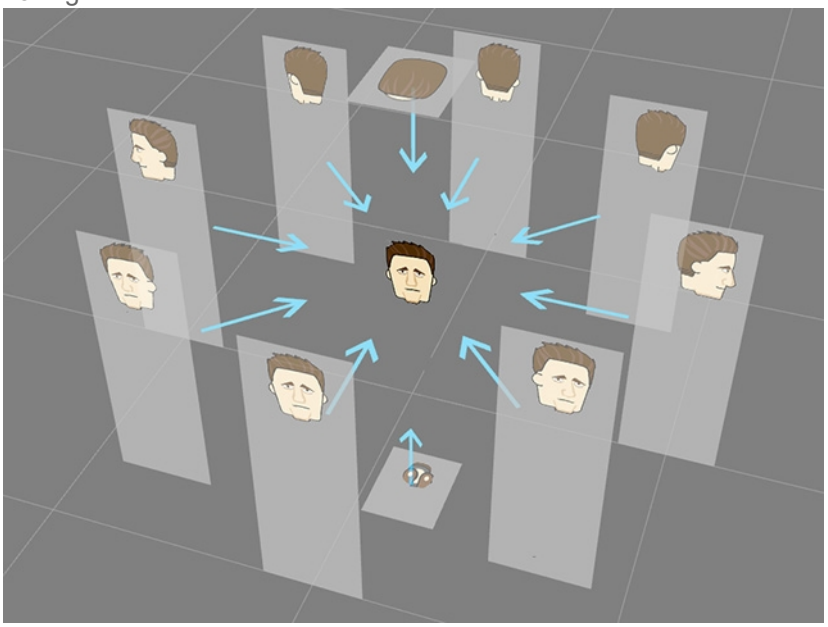


However, if the head is converted from the **G1** head, then **CrazyTalk Animator Version 2 or above** only inserts the **G1** head into 10 angles, which causes the character's heads looks the same even if you turn the character to different directions.

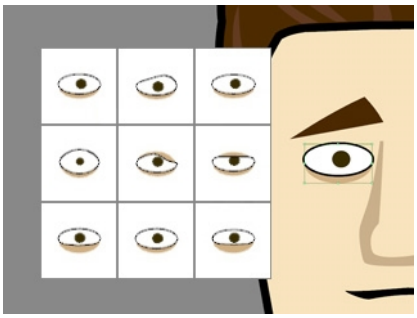


G2+ Head with Multiple Angles (New for v3)

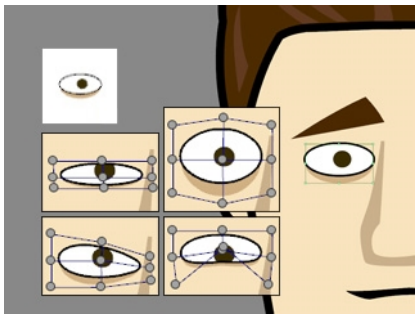
The default **G2+** (generation 2+) heads are created with **CrazyTalk Animator Version 3, or above**. It is designed to have 10 angles for the head in order to have the character face different directions when you turn the character.



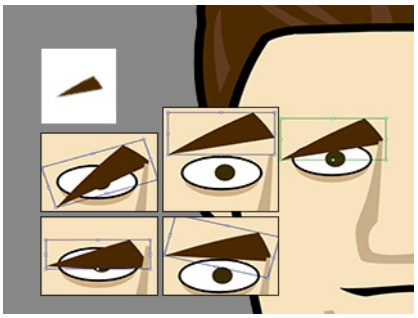
The differences between the **G2** and the **G2+** heads are the expression poses of the facial features. The expression poses for the **G2** head are composed of different sprites with different images. The **G2+** expression poses however, can be deformed, transformed, or both, from one sprite with the **FFD** (**free form deformation**) method and transforming bounding box. This method saves you time from preparing many pose images, by simply replacing them with deformed similar ones.



G2 Head with individual expression poses



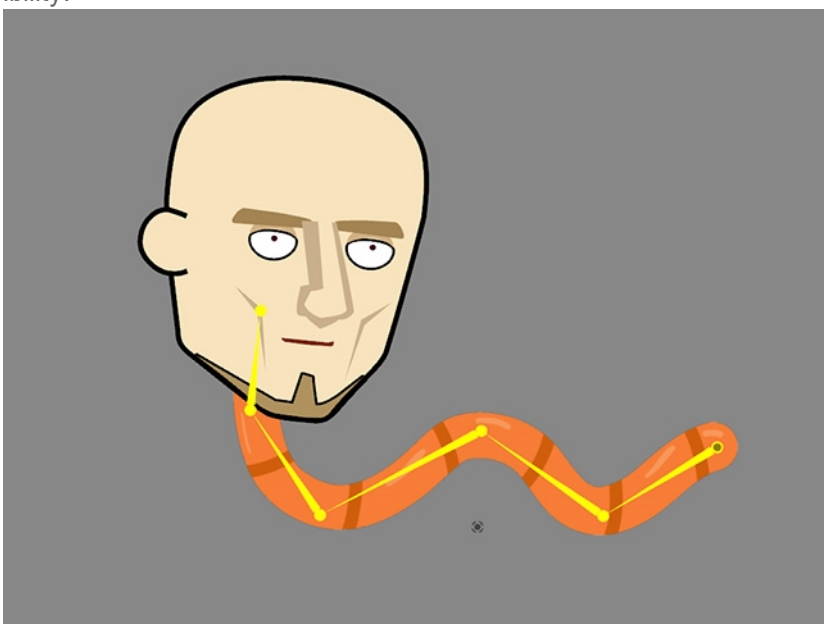
G2+ Head with base expression pose and deformed instances.



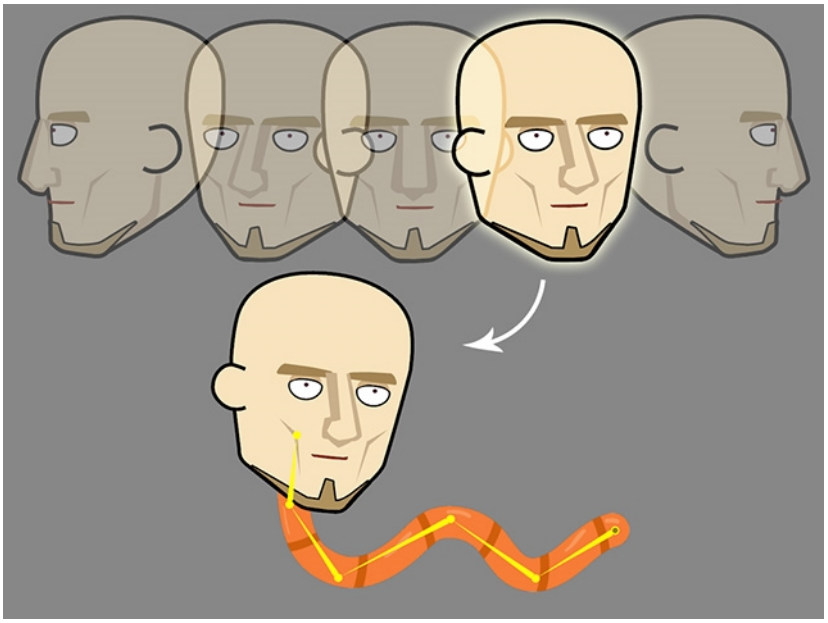
G2+ Head with base expression pose and transformed instances.

G3 Head with Single Angle (New for v3)

The default **G3** (generation 3) heads are created with **CrazyTalk Animator Version 3, or above**. It is created by facing only one direction. Therefore, although it is much more like the **G1** head with a single angle, it can have more angle flexibility.

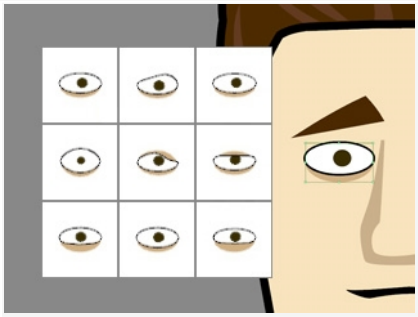


In addition to using the template from the **Content Manager**, you can also extract a face from one of the angles of the **G2** head to form a desired **G3** head.

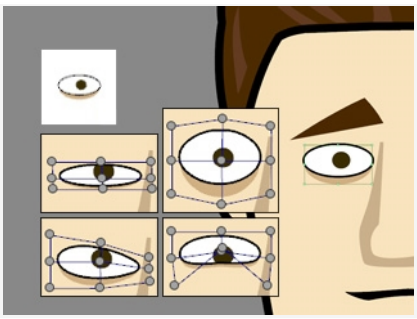


Note:

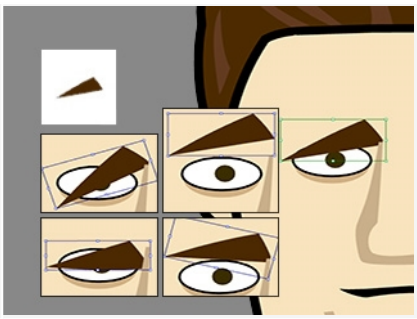
The expression poses of a **G3** head can have either individual sprites, or be derived from the deformed and / or transformed sprite.



G3 Head with individual expression poses



G3 Head with instances derived from deformed expression poses.

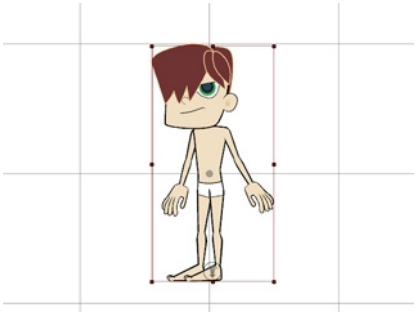


G3 Head with instances derived from transformed expression poses.

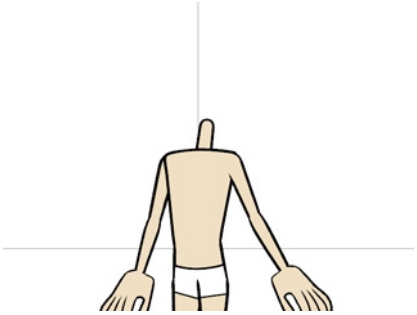
Using Predefined Sprites to Compose a Face

CrazyTalk Animator contains facial feature libraries with lots of templates (predefined sprites) inside for compositing faces.

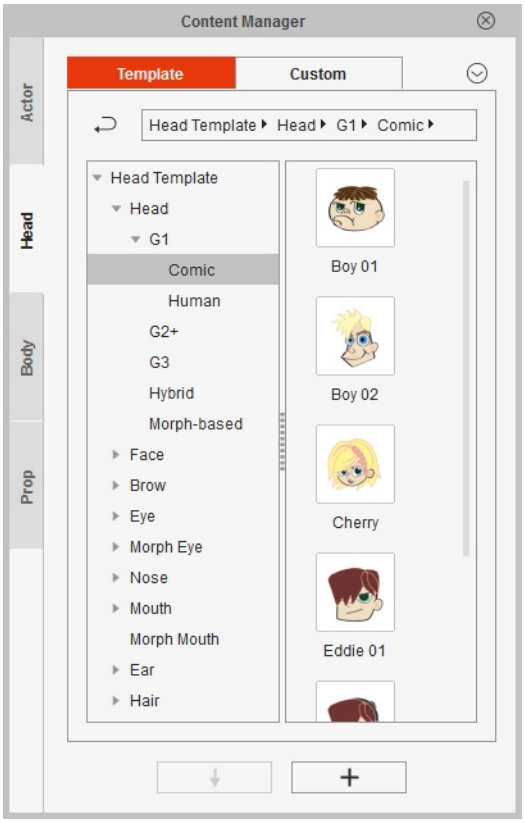
1. You must first select a character.



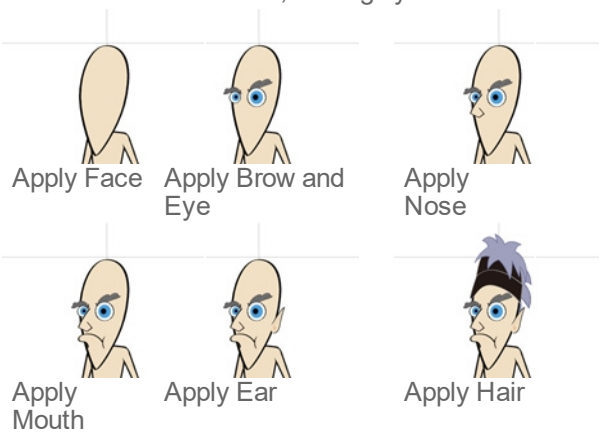
2. Click the **Composer** button to switch to the **Composer Mode**.
3. You may also delete the entire head to create a new one.



4. Select the **Head** content folder from the **Head** tab in the **Content Manager**.



5. Apply desired template from the **Face** and **Hair** libraries. Please note that there is no specific order to applying the facial features. However, it is highly recommended that you first apply the **Face** before the others.



Note:

- Get more facial sprites from the "Facial Component Library - Comical Style".
- If you need to transform the facial features, then refer to the Transforming Facial Features section for more information.

Creating Facial Sprites with Frontal Angle

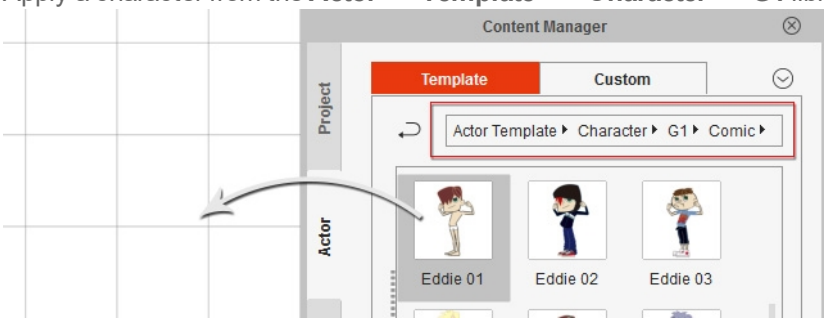
Pro & Pipeline

When the characters in your scene always face , talk and make any expression directly to the camera, you only need to create facial features that are single and frontal.

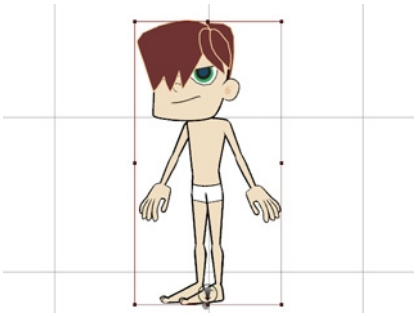
To build up facial features for a **G1** character, you need to follow the steps below.

* Please note that these steps are suitable for Image-based, Vector-based or Hybrid head types.

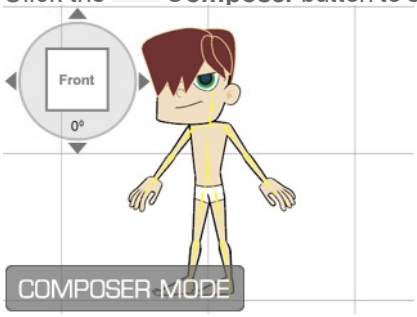
1. Apply a character from the **Actor** >> **Template** >> **Character** >> **G1** library (in this case, the **Eddie 01**).



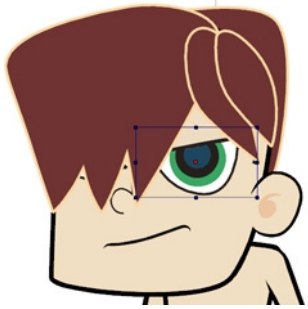
2. The G1 character is loaded and auto-selected.



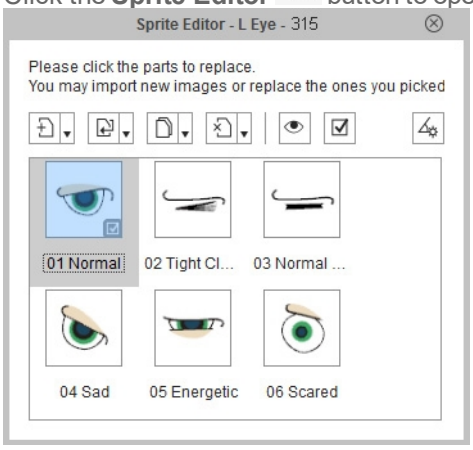
3. Click the **Composer** button to switch to the **Composer Mode**.



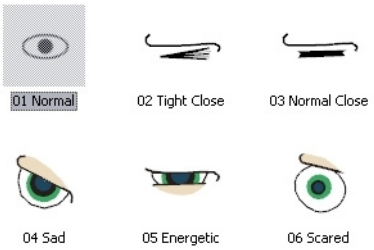
4. Select the sprite of a facial feature (in this case, one of the eyes).



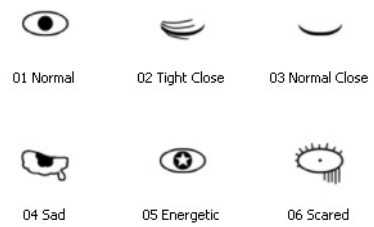
5. Click the **Sprite Editor** button to open the panel.



6. Make sure the pose is selected and click the **Replace Current Sprite** button.
7. Select a prepared media file and click the **OK** button to replace the original one.



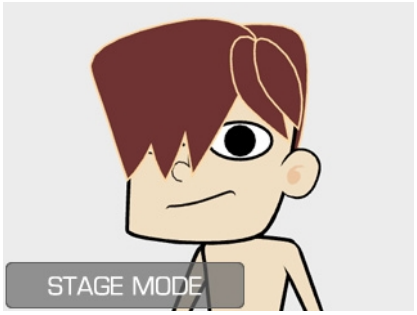
8. Pick any of the other poses and repeat step 6 to 8 until all prepared media are imported to replace the original ones.



Note:

In order to have the eyes be able to roll, you need to create them in specific rules. please register the **Pipeline** edition of **CrazyTalk Animator 2** under your **Reallusion** member account to gain access to the whitepaper in your personal member page.
How to Register | Log in.

9. Click the **Back to Stage** button to bring the new eyes back to the stage.



Note:

Please note that the G1 eyes **CAN NOT** be added into the custom eye library.

Creating Facial Sprites with Multiple Angles

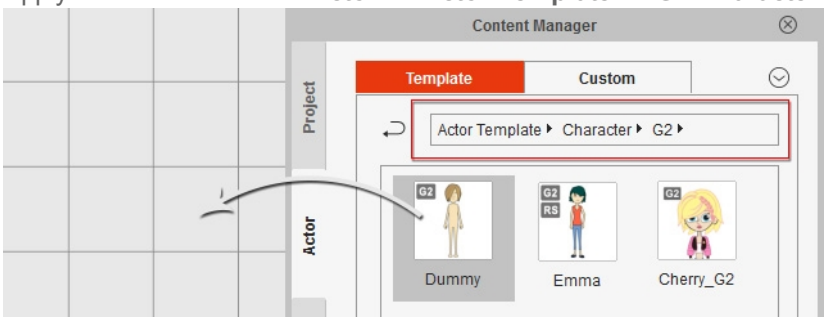
Pro & Pipeline

In order to have the facial feature match the angle of the character, especially when the character's head rotates, you need to create facial sprites with pose composed of multiple angle views. The workflow is much like how you create a multi-angle body part.

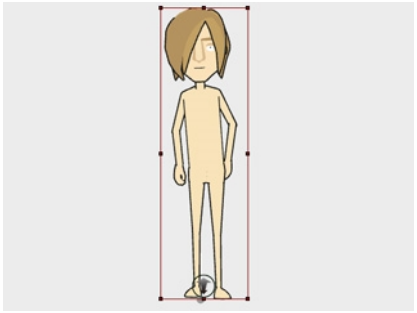
* Please note that these steps are suitable for Image-based, Vector-based or Hybrid head types.

Step 1: Applying Dummy Character for Replacement

1. Apply a character from the **Actor** >> **Actor Template** >> **G2 Character** >> **Replace Dummy**.

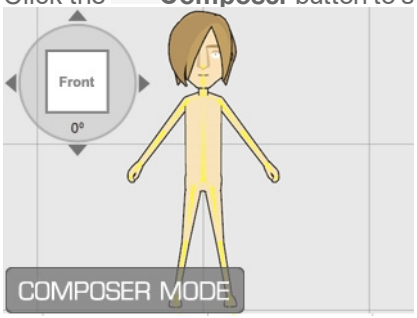


2. The basic G2 character is loaded for replacement procedure and is auto-selected.



Step 2: Replacing the Angles of Specific Facial Features

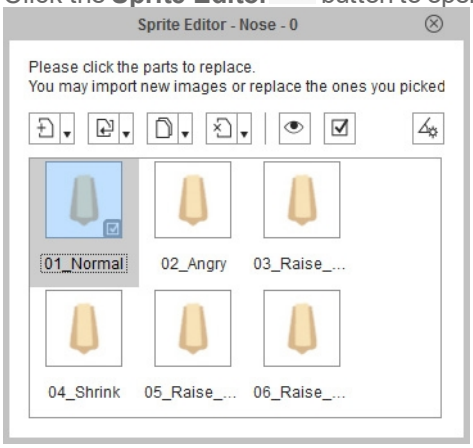
1. Click the **Composer** button to switch to the **Composer Mode**.



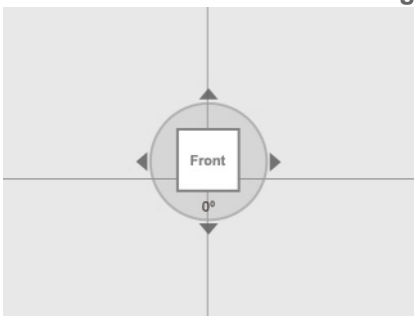
2. Select a sprite of a facial feature (in this case, the nose).



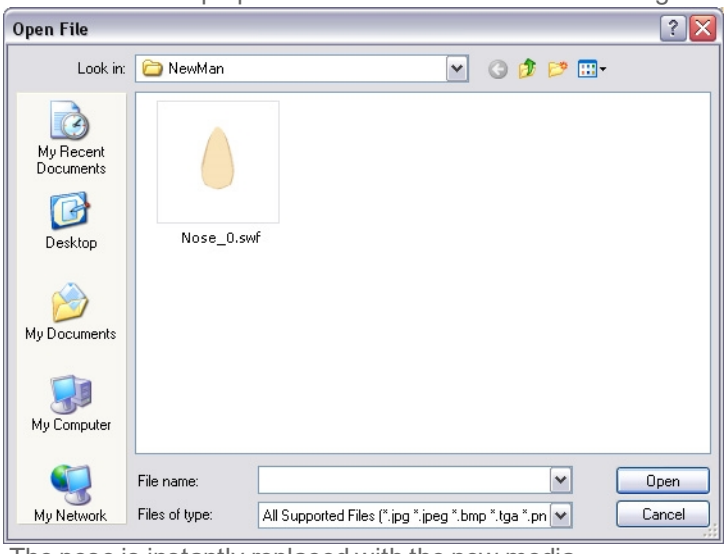
3. Click the **Sprite Editor** button to open the panel.



4. Click the 4 arrow buttons of the **Angle Switch** to determine an angle (in this case, 0 degree).



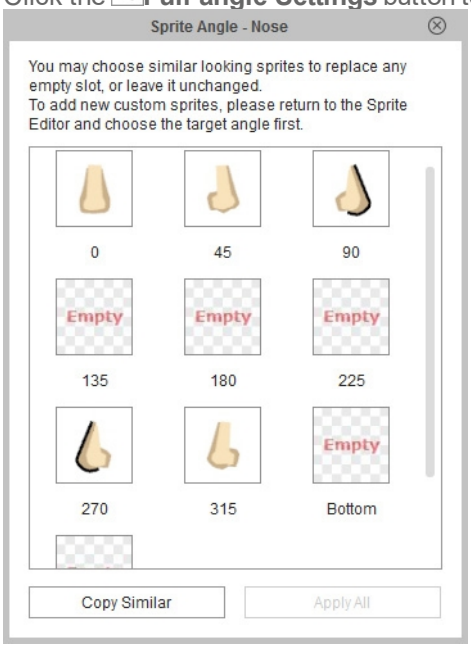
5. Pick the pose in the **Sprite Editor** and click the **Replace Current Sprite** button.
6. Select one of the prepared media file that matches this angle and click the **Open** button.



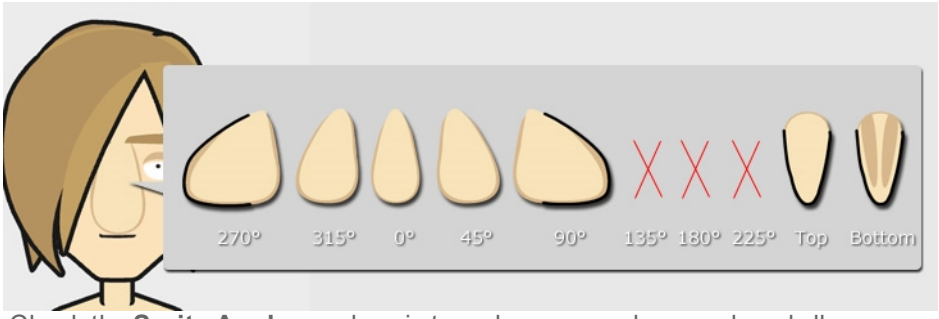
The pose is instantly replaced with the new media.



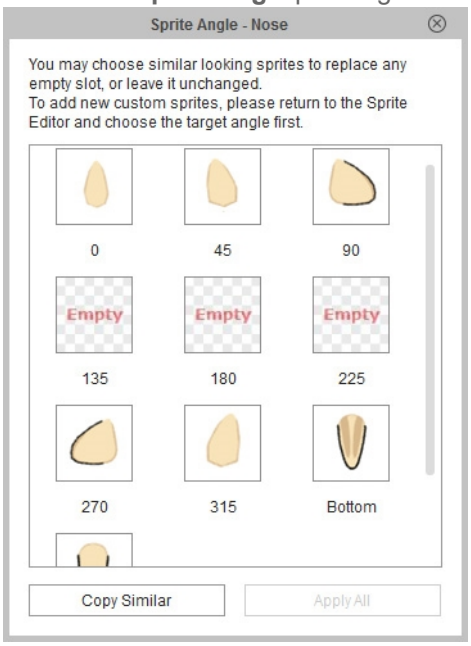
7. Click the **Full-angle Settings** button to display all media that compose this pose.



8. Repeat steps 4 to 7 until media of different degrees are loaded to replace 5 angles in the table.



Check the **Sprite Angle** panel again to make sure you have replaced all necessary angles.



Note:

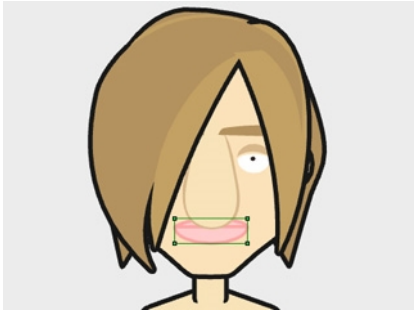
- Please note that the slots for 135, 180 and 225 degrees can be empty because the character is actually face back and the facial features are hidden.
- The slots for top and bottom can be empty or filled up, depending on the protruding statuses of the facial features.

Step 3: Replacing Other Facial Features

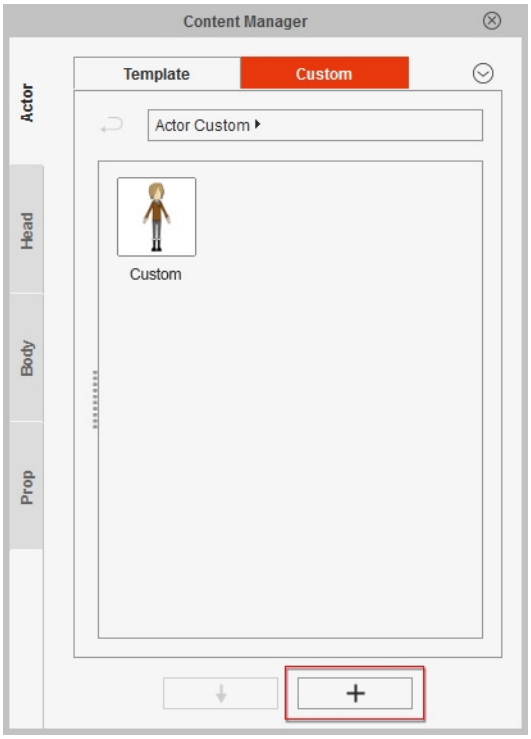
1. Pick any of the other facial features.



2. Repeat same steps in the previous section to replace the angles in the sprite.



3. Perform the same steps until the facial sprites of the character are completely replaced.
4. Click the **Add** button under the **Content Manager** to save the custom character.



5. Click the **Back to Stage** button to bring the new character back to the stage.

Note:

If you are a **Pipeline** version user, you may also use the **Validate Multi-angle Setup** panel to quickly replace the media.

- Introduction of Validate Multi-angle Setup Panel
- Using Sprite Tab

Attaching Accessories to a Face

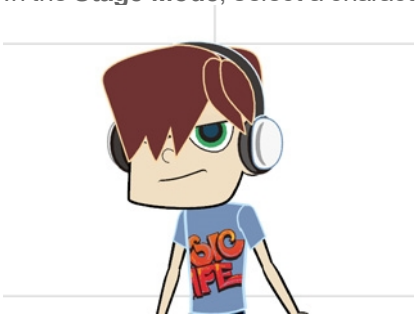
You can make accessories by attaching props to any part of a character's body. Now Animators can accessorize their characters at will.

Note:

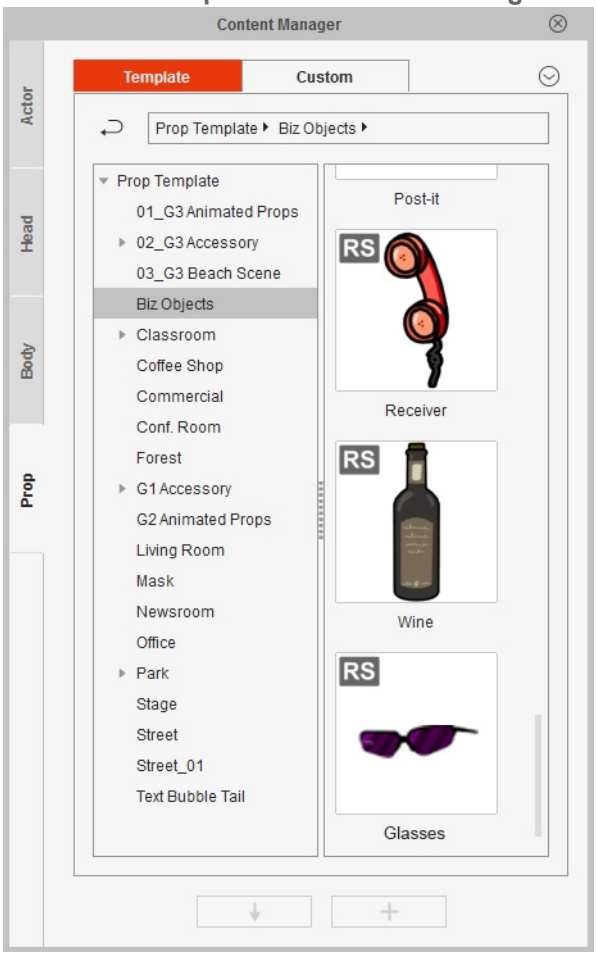
- Please attach accessories to the **Face** instead of specific facial features in order to avoid unexpected results.
- Multi-angle accessories are not supported in this version yet.

Wearing Accessory

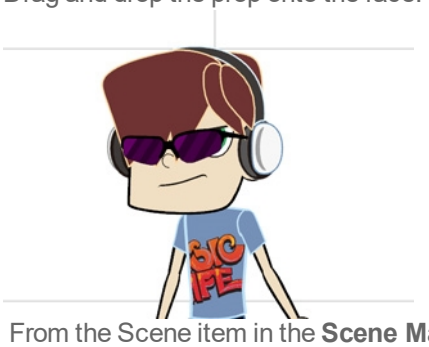
1. In the **Stage Mode**, select a character and click the **Composer** button.



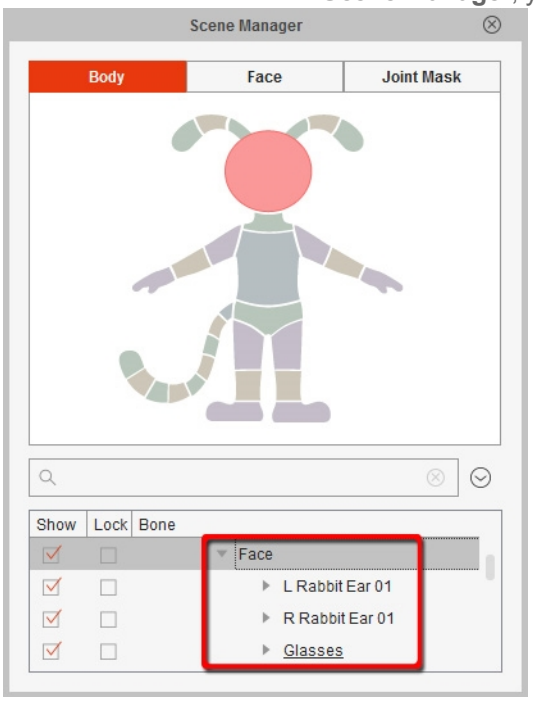
2. Switch to the **Prop** tab in the **Content Manager**.



3. Drag and drop the prop onto the face. Doing this will cause it to attach to the face and become an accessory.



From the Scene item in the **Scene Manager**, you can see that the accessory is already a sub-node of the face.



4. Click the **Back to Stage** button and update the character. Whenever the character performs, the accessory will move accordingly.



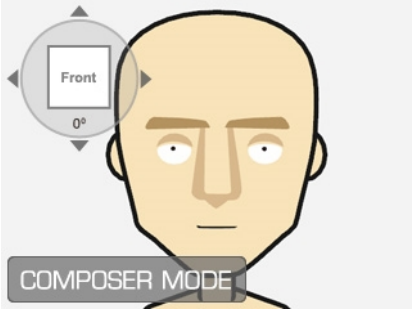
Mirroring Symmetrical Facial Features

When you want to create facial features for G2 characters, you need to prepare a lot of files for filling up the poses and angle slots within the **Sprite Editor** and the **Angle Table**. However, if the character you want to create is left-right symmetrical, then you may use the **Mirror** function provided to quickly duplicate and copy one side to the other.

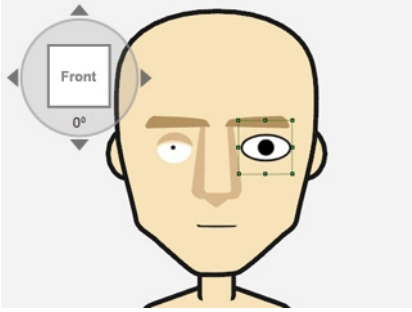
The mirror method can only be applied to individual facial features or to the symmetrical facial features (eyebrows, eyes and ears).

Mirror-creating Single Symmetrical Facial Features

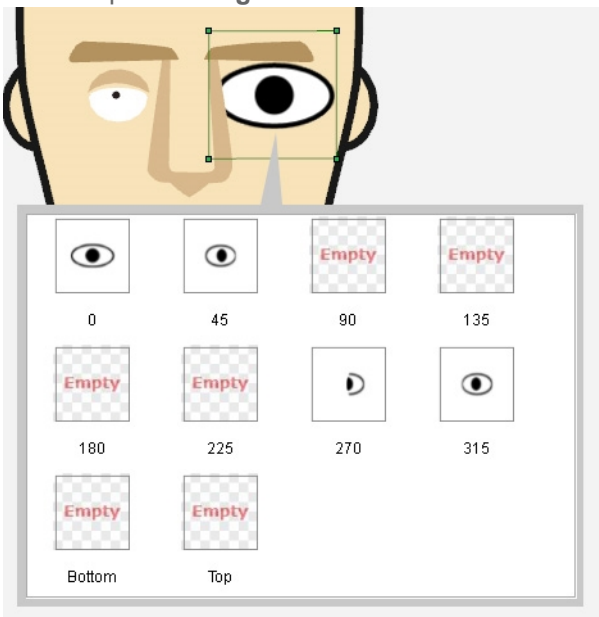
1. Apply a character from the **Actor** >> **Actor Template** >> **G2 Character** >> **Replace Dummy** and enter the **Composer Mode**.
   (please note the front and back hair pieces are removed for better observation)



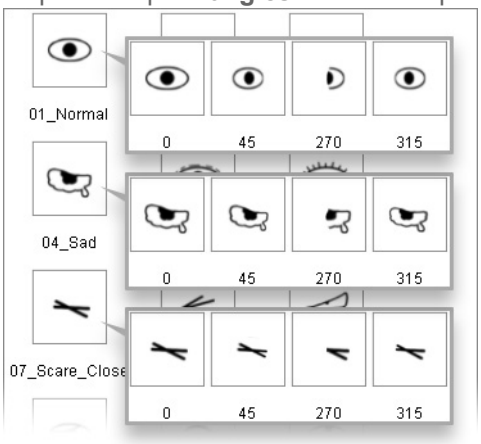
2. Select one of the symmetrical facial features (in this case, the left eye) and load a prepared file to replace the original one via the **Sprite Editor**. Pro & Pipeline
   (Transform the element if necessary)



3. Rotate the character to other angles (45, 270, 315) and insert the prepared files for the facial feature at all angle profiles.
   Please open the **Angle Table** to make sure that necessary angle slots are filled. Pro & Pipeline



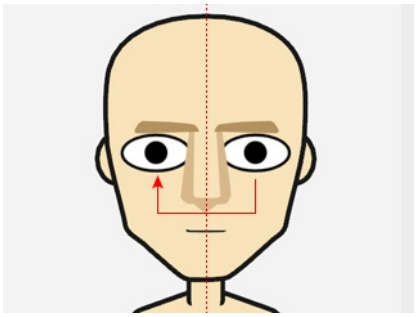
4. Since the facial feature contains multiple poses for creating expressions on the face, you need to repeat the same steps to fill up the **angles** for the other poses in the **Sprite Editor**. Pro & Pipeline



5. Close the **Sprite Editor**.
6. Click on the down arrow button next to the **Mirror** button to show its drop-down menu.
7. Choose the **Mirror Selected Sprite** option from the menu.

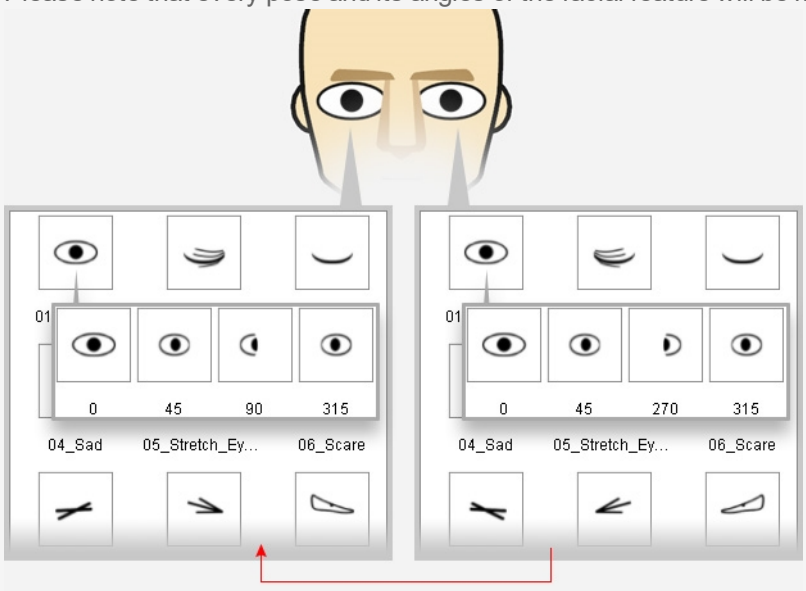


8. The selected facial feature will be duplicated and mirror to the sprite on other side of the face.



Note:

- Please note that every pose and its angles of the facial feature will be mirrored as well.

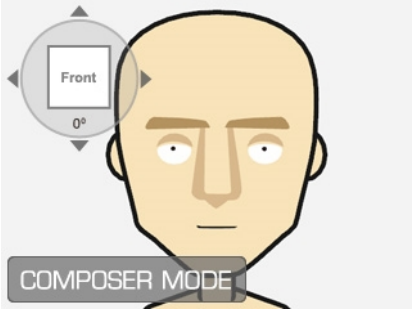


- If the sprites are mirrored while some of the pose or angle slots are left un-filled, the corresponding slots will be empty as well. You may then fill up them and perform the **Mirror** function again.

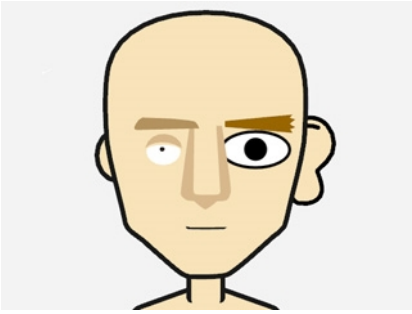
Mirroring Symmetrical Facial Features

In addition to mirroring single sprites, you are able to mirror the symmetrical facial features and limbs of the characters simultaneously, which saves time when duplicating facial features and limbs. In this section, the symmetrical facial features are illustrated only, but after the function is executed, the limbs are duplicated and mirrored as well.

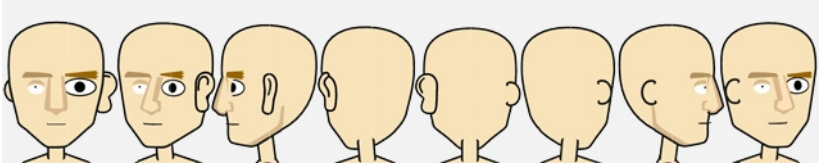
1. Apply a character from the **Actor** >> **Actor Template** >> **G2 Character** >> **Replace Dummy** and enter the **Composer Mode**.
   (please note the front and back hair pieces are removed for better observation)



2. Replace the facial features of a side (in this case, the left eyebrow, eye and ear) with prepared files via the **Sprite Editor**. Pro & Pipeline



3. Rotate the character to other angles and insert the prepared files for the facial features of the same side.



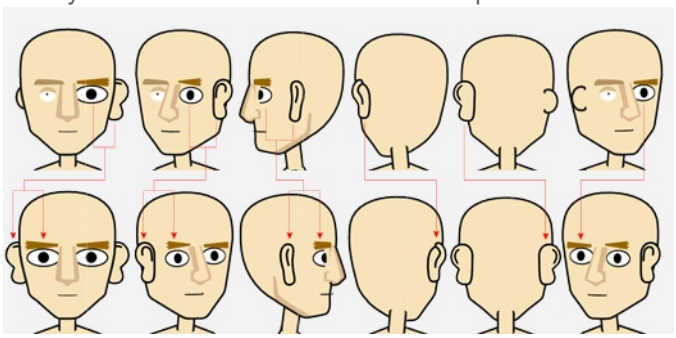
4. Close the **Sprite Editor**.
5. Click on the down arrow button next to the **Mirror** button to show its drop-down menu.
6. Choose the **Mirror to Actor Left** from the menu.



Note:

If you customize the right limbs of the character, then choose **Mirror to Actor Right** and vice versa.

7. The symmetrical facial features will be duplicated and mirror to the other side of the character.



Note:

- The items that are mirrored include:
  - **Transformation of Sprite**
  - **Poses in Sprite**
  - **Individual Transformations of Poses**
  - **Angles of Each Pose**
  - **Individual Transformations of Angles**
  - **The Joint Mask Settings**
  - **The Layer Settings**
- Please note that this mirror method will duplicate and mirror every bilateral sprites including the **Eyebrow**, **Eye**, **Ear**, **Upper Arm**, **Lower Arm**, **Hand**, **Thigh**, **Shank** and **Foot**.
- If the sprites are mirrored while some of the pose or angle slots are left un-filled, the corresponding slots will be empty as well. You may then fill up them and perform the **Mirror** feature again.

Pose Sharing and Individual Transformations for Facial Features

Pro & Pipeline

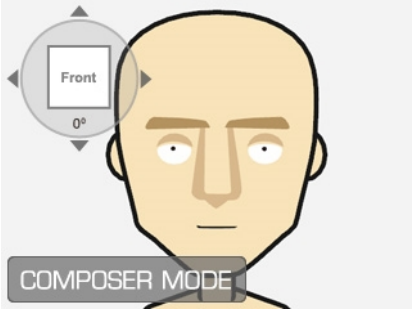
The Pose sharing method can be applied to the sprites that contain multiple poses for creating different expressions; However, it is suitable for the poses that have little or no changes.

Thus, this method can be best used for the **eyebrows**, **nose** or another facial features whose appearance does not change much with a character's expression. These particular facial features simulate expression changes by simply transforming their positions.

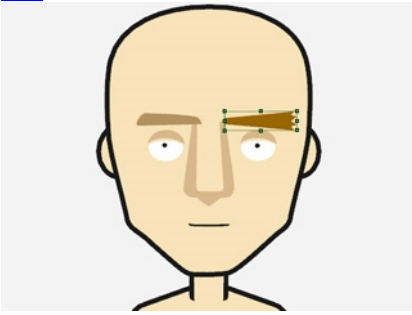
Pose Sharing

In this section, the eyebrow is taken as an example for describing the usage of the **Pose Sharing** feature.

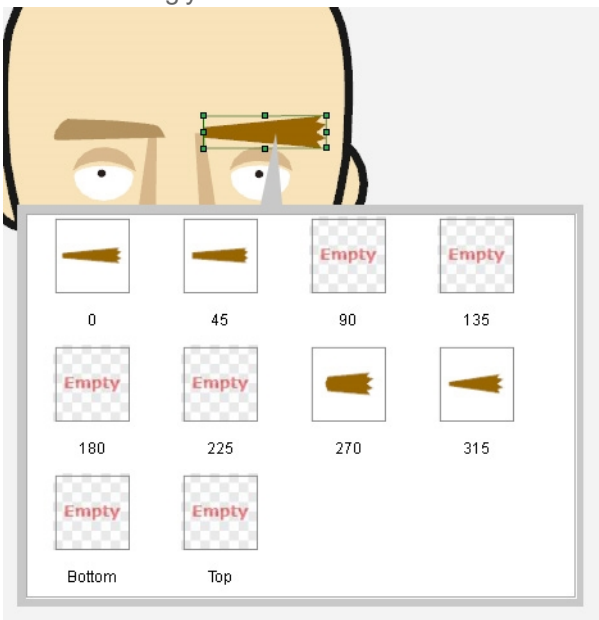
1. Apply a character from the **Actor** >> **Actor Template** >> **G2 Character** >> **Replace Dummy** and enter the **Composer Mode**.
   (please note the front and back hair pieces are removed for better observation)



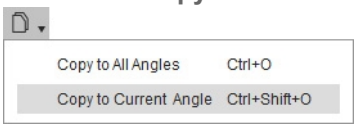
2. Select one of the eyebrows (in this case, the left one), load and transform a prepared file to replace the original one via the **Sprite Editor**.



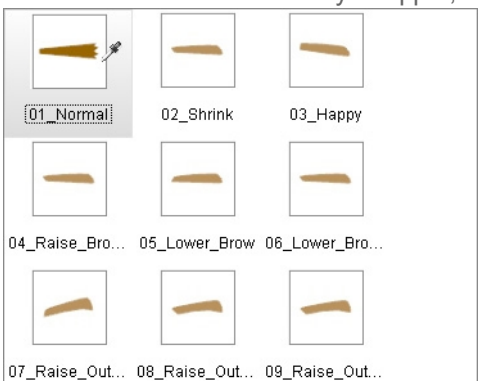
3. Rotate the character to other angles (45, 270, 315), insert and transform prepared files for the facial features. Please open the **Angle Table** to make sure that necessary angle slots are filled and you may need to transform them accordingly.



4. Click on the down arrow button next to the **Copy Sprite** button to show its drop-down menu.
5. Choose the **Copy to Current Angle** from the menu.



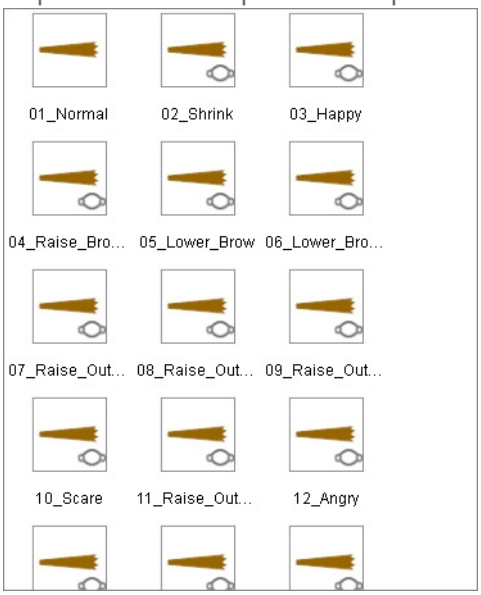
6. While the cursor turns to an eyedropper, click on the pose slot replaced in the previous steps as the source.



7. The cursor will turn to a paint bucket. Click on the other pose slot(s) as targets for pasting the retrieved content from the source slot.



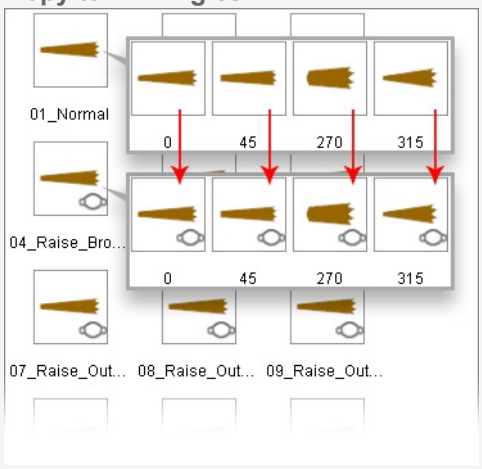
8. Repeat the same steps until each pose slot is replaced with the content from the source slot.



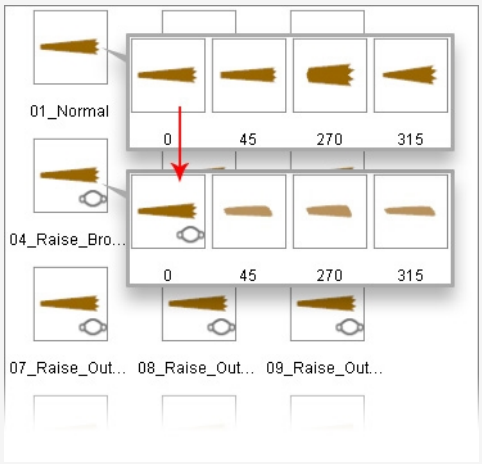
Note:

The commands in the **Copy Sprite** drop-down menu determine the content to be shared:

- **Copy to All Angles**: This command shares every angle of this pose to another pose slot.

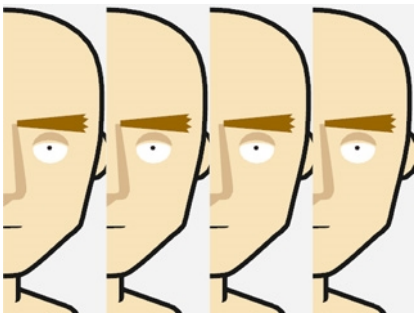


- **Copy to Current Angles**: This command shares only the current angle of this pose to another pose slot.



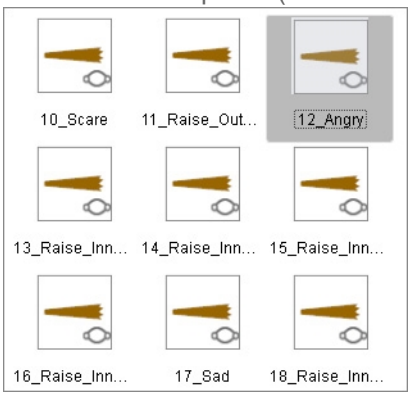
Individual Transformation

After the pose is shared to different slots, you may need to transform them in order to create different expressions when you puppeteer your character. This is because the transform positions of each pose will be identical after the Copy Sprite function is performed.

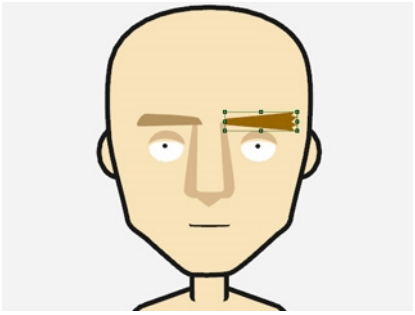


Scared, **Angry**, **Sad** and **Happy**

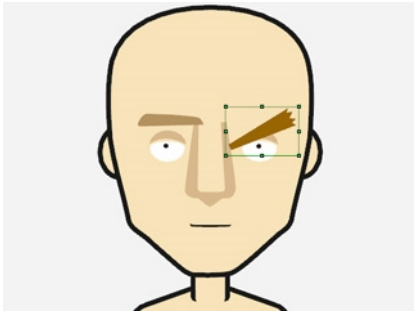
1. Make sure the **Sprite Editor** is opened.
2. Select one of the poses (in this case, the 12_Angry is selected).



3. Transform (move, rotate or scale) the pose according to the name of the pose.

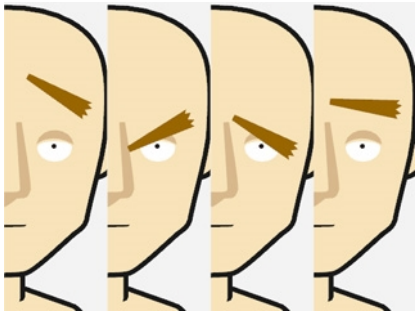


Before transformation



After transformation for **Angry** pose

4. Repeat the same steps until every pose is ideally transformed.



Scared, **Angry**, **Sad** and **Happy**

Note:

If you need to change the appearances of the facial features via transformation, align the poses to the bone or relocate the pivots of the facial feature simultaneously, then refer to the Simultaneously Transforming Multiple Poses and Relocating Pivots for Facial Features sections for more information.

Creating a Face from a Photo

There are two methods for you to create a head (face) from an image. Once a head is fully created in **CrazyTalk Animator**, then the converted image character will be able to talk with expressions. Please note that only image characters whose heads have been fully created will be able to have expressions on their face.

The supported image formats are: **JPG**, **BMP** and **PNG**.

Whenever you see the  **Create Face** button enabled in **Stage Mode** or **Composer** mode, then you will be able to create a new face from a photo with the **Face Creator**.

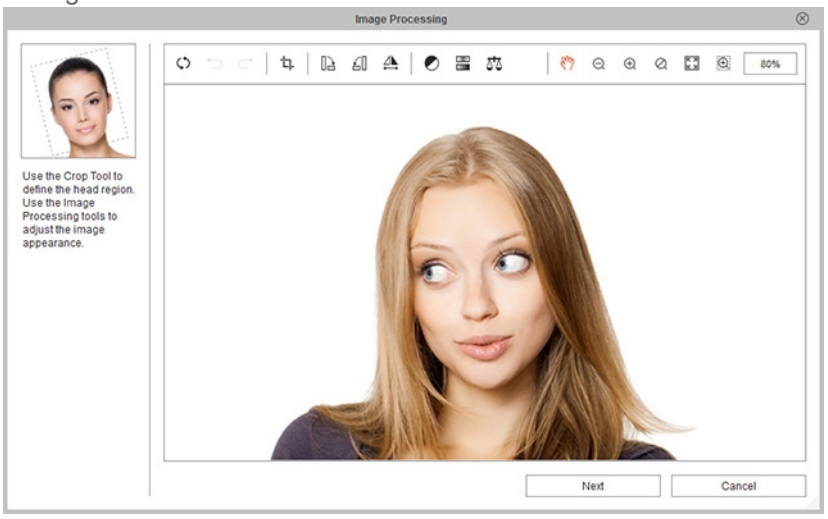
There are three steps in the **Face Creator**.

* Please note that these steps are suitable for Morph-based head type.

1. Image Processing
2. Automatic Image Fitting
3. Face Fitting

Image Processing

The image processing tools allow you to enhance the quality of selected images. You may rotate and crop them in order to work with a portion of the original image source. This allows you to focus on facial details in order to create more accurate talking characters.



You may use the tools on the left side of the image processing menu to adjust the area, quality, and color settings of the image.

Cropping an image

Click the **Crop Tool** button to select the specific area. This can be useful when you want to crop a face from a group photo, or remove a large background area that is not needed. Cropping the image allows you to remove the excess background area and enlarge the facial image you wish to work with. This does not change the original image size.

Drag a marquee around the image by using the mouse to create a crop box. Use the corner handles of the marquee to rotate the crop box. Use the mouse to move the crop box across the image as desired. Click the **Apply** button when done. Click the **Cancel** button to cancel the current crop box and restart.

Rotating an image

Click the **Rotate 90 CW** or **Rotate 90 CCW** buttons to rotate the image by 90 degrees in the clockwise or counter clockwise direction.

Mirroring an image

Click the **Mirror** button to mirror the image on the horizontal axis. This function is useful for images obtained from scanners or cameras.

Automatically adjusting color levels

Click the **Smart Level** button to automatically adjust the color levels of the image. **CrazyTalk** analyzes the color levels and adjusts the brightness, contrast, hue and saturation levels to achieve optimum image quality.

Manually adjusting color levels

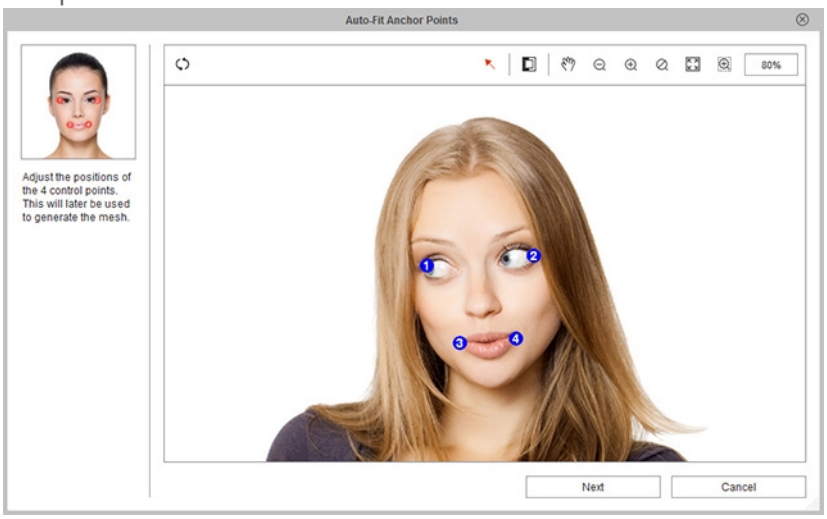
Click the **Color Level** button to manually adjust the brightness, contrast, hue and saturation levels of the image. Use the sliders in the menu box to adjust the values, or enter the numerical values for each parameter in the boxes next to the sliders.

Adjusting color balance

Click the **Color Balance** button to manually adjust the color balance. Drag the sliders to adjust the **Cyan - Red**, **Magenta - Green**, and **Yellow - Blue** levels. The box next to each property shows positive and negative values; depending on the position of the slider. The center value is zero. Select the **Highlights** radio button to apply color settings to the image's brighter areas. Click the **Midtones** radio button to apply color settings to the image's normal areas. Select the **Shadows** radio button to apply color settings to the image's darker areas.

Automatic Image Fitting

The 4-point auto fitting for the basic anchor points allows you to create a **CrazyTalk Animator** model in just a few clicks. This process is entirely automatic and requires no complex frame fitting techniques. Once you create a basic frame to fit the face, then you can use the fitting tools to increase the definition of the wire frame by simply adjusting the additional frame points.



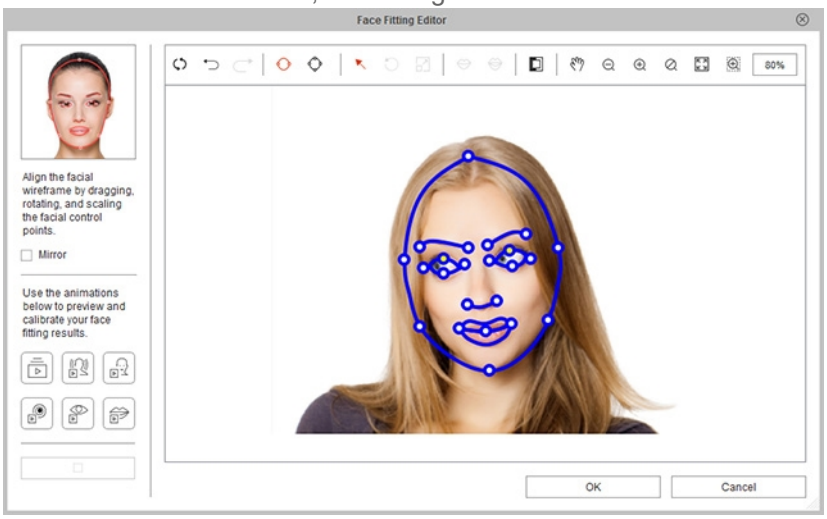
CrazyTalk Animator has its own embedded estimation of the four points which define the eye and mouth areas. If you wish to move the positions, then you may click and move the numbered indicators 1, 2, 3 and 4, on the image. Do this to adjust the fitting process as displayed in the reference image. Click the **Reset** button at any time to cancel your actions and start over.

Note:

Adjust the four points as accurate as possible to get the best fit for the eyes and mouth, but do not worry about precise details at this time. Refer to the Facial Wireframe Modes and Replacing Face Image section for more information.

Face Fitting

The **Face Fitting** step assists you to set wireframes to frame up the facial features as precise as possible since when the actor starts to talk and move, the settings of the wireframe affect the result most.



Basic Tools

- **Wireframe Color**: Click this button and cycle through different wire frame colors. This can be used if both the original image and the wire frames colors are the same color, as it would make it difficult to view and make corrections.
- **Select**: Click this button to pick and move components of the wire frame. This button is pressed and activated by default.
  - You may move the wires or the individual wire frame points.
  - Move the frame points get a wire shape more suited to the face contours.
  - To move multiple points simultaneously, hold the **Ctrl** key and click the desired control points. The selected control points will turn red. Release the **Ctrl** key and then move the points to the desired location.
- **Rotate**: Select a wire frame or multiple frame points and click this button to rotate them.
- **Scale**: Select a wire frame or multiple frame points and click this button to resize them.

Zoom Tools

- **Pan**: After you zoom in the image, you may press down this button and drag the image in order to pan to the desired area for modifying.
- **Zoom Out**: Click this button to zoom out the image for observing more of the image.
- **Zoom In**: Click this button to zoom in the image for better observing and modifying the details.
- **Actual Size**: Click this button so the image will be shown in its original resolution.
- **Fit to Window**: Click this button so that the image will be zoom in or zoom out in order to just fit into the preview window.
- **Drag and Zoom**: Press down this button and drag a rectangle around the desired area of the image in order to zoom in to the area for better observing and modifying the details.

Previewing with Calibration Buttons

- s Click the **Calibration** buttons to play back a short script intended for calibration.



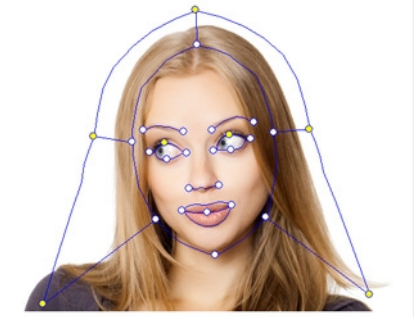
- Click the **Stop** button to stop the playback.

Facial Wireframe Modes

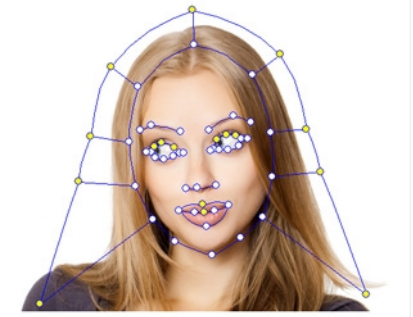
You may click the **Basic Facial Mode** or **Detailed Facial Mode** button to view the wire frame around your character. You may also drag the control points, or lines, to fit a character's face more precisely.

Fine-Tuning the Wireframes

1. By default, the **Basic Facial Mode** button is pressed.
2. Use the basic tools described in the last section to roughly frame up the wire frames as close to the facial-feature contours (skull, eyebrows, eyes, nose and mouth) as possible.
3. Click to press the **Detail Facial Mode** button to show more wire frame control points.
4. Thoroughly move the control points to make the wire frames even closer to the facial features.



Basic Facial Mode



Detailed Facial Mode

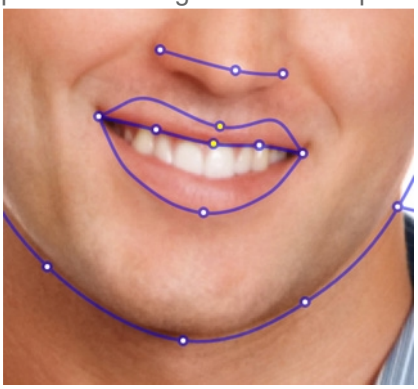
Note:

Please refer to the Hair Mesh Layer section for more information.

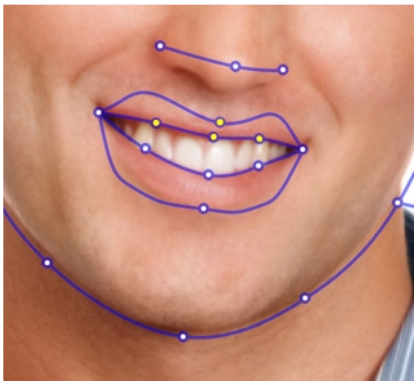
Wireframes for Opened Mouth

If the character in the image you have loaded is with opened mouth, then the position of the middle wire can not be determined; you need to do the following steps:

1. Make sure that the **Detail Facial Mode** button is pressed down.
2. Press down the **Open Mouth Points** button.
3. Move the wire with **Yellow** control points to match the edge of the upper lip; while the one with **White** control points to the edge of the lower lip.



Close Mouth Points



Open Mouth Points

Note:

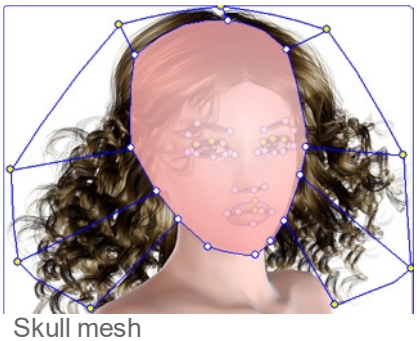
If you want the actor to close up the mouth, then you need to activate the **Force to Close** feature in the **Teeth Settings** panel.

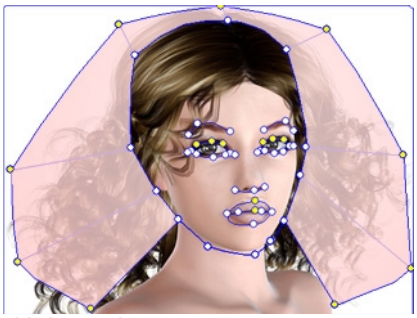
Hair Mesh Layer

Character heads in the photos may not always be oval-shaped due to hair styles or accessories like hats, or even ears (of animals). **CrazyTalk Animator** provides a **Hair Mesh Layer** so that you may separate the ranges of the skull, and of the objects attached, into different layers.

With this design, broken face issues may be minimized when the character talks and moves. Even if the character's expressions are not exaggerated, sometimes the objects framed within the hair mesh layer may move a bit.

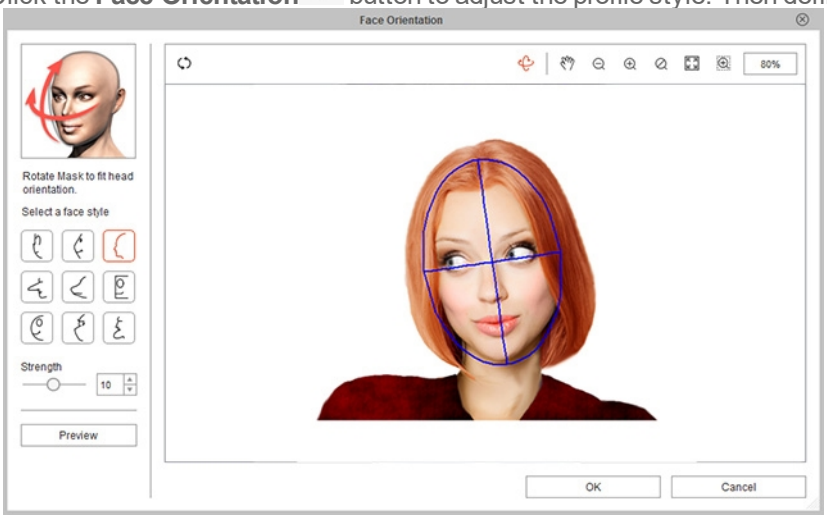

Character with fluffy hair


Skull mesh


Hair mesh

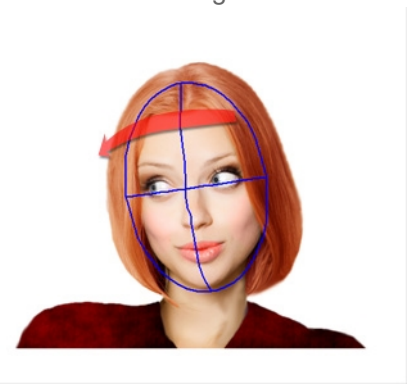
Specifying Face Orientation and Style

Click the **Face Orientation** button to adjust the profile style. Then define the face orientation of the character:



Defining the 3D Face Orientation

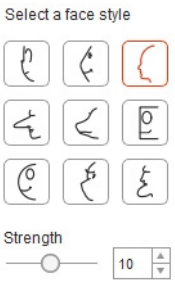
- Utilize the **Rotate** tool to fit the angle of the character's face. This will ensure that the 3D mesh of the head will match the facial angle of the character in the photo.



Rotate the mesh to fit the face angle

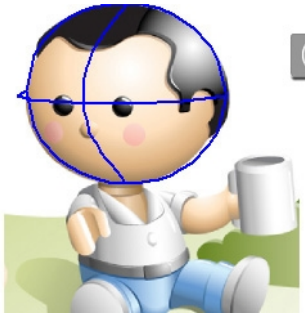
Selecting Appropriate Face Style

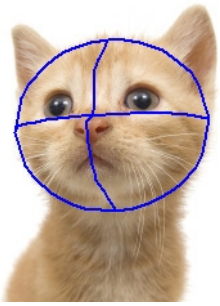
1. Select one of the 9 basic profiles to fit your character.



2. Drag the **Strength** slider to adjust the intensity of the profile. The higher the value, the more accentuated the profile and motion of the character will be.
3. Press the **Preview** Preview button and move your mouse to preview the head motion in the main viewport. If the motion is not as desired, then re-adjust the **Strength** value or try another profile style.

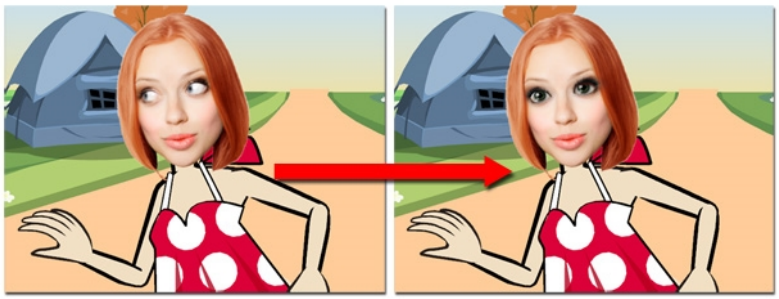
Examples:





VividEye Technology

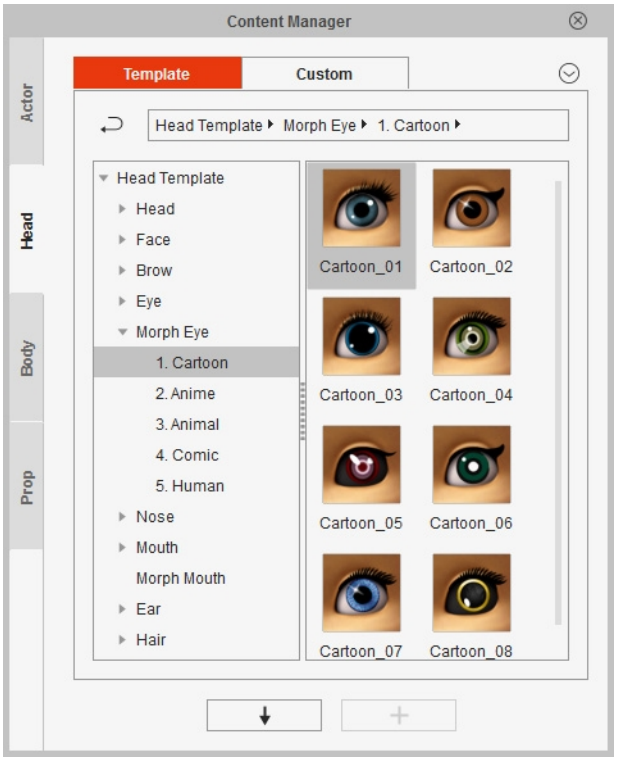
CrazyTalk Animator introduces **VividEye Technology** in a layer-based concept. The 6 Layers (Eyeball - Iris, Eyeball - White, Eye Light, Eye Shadow, Eyelash and Makeup) in the **VividEye** Settings greatly increase the realism of virtual eyes. Original eyes from the source image cannot roll, so it is important to add virtual eyes to the animation.



Using VividEye

The six layers superimpose to create the appearance of natural eyes:

1. Change the **Content Manager** to **Head** >> **Morph Eye** library. You will see 5 categories of eye templates. Access into one of the folders.



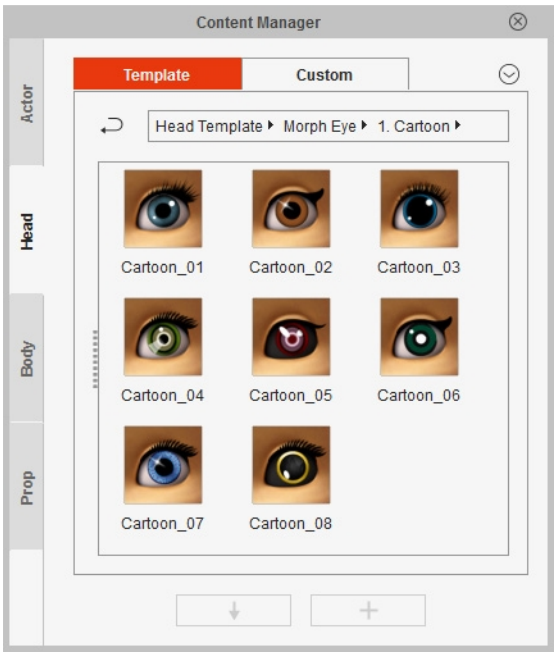
2. Double click on the desired template to add virtual eyes to the actor. Please refer to the Eye Template Gallery section for more information.

3. Click the **Eye Settings** button on the **Create Face Bar** to access the **Eye Settings** panel.
   - Eyeball Transform
   - Eyeball Iris Color and Eyeball Whites
   - Eye Light
   - Eye Shadow
   - Eyelash
   - Makeup

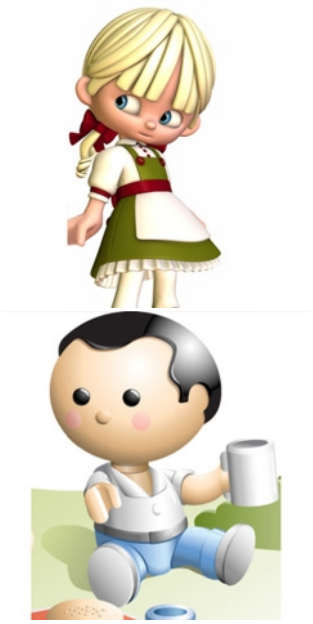
Eye Template Gallery

CrazyTalk provides a virtual eye template gallery to match the design style of the **VividEye** templates.

Cartoon Character



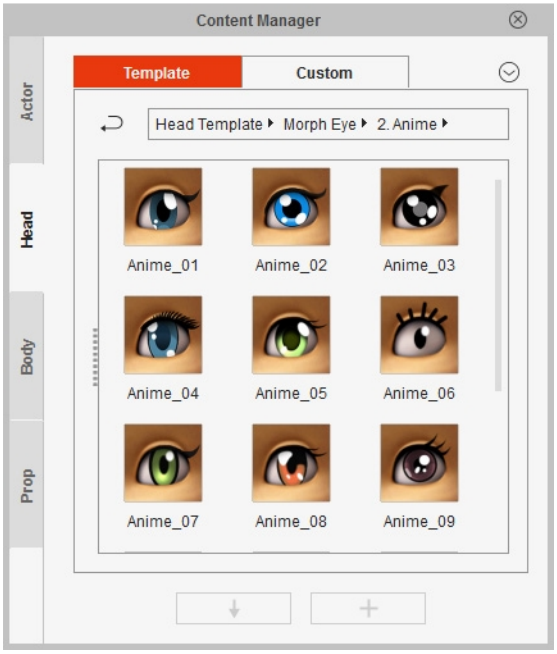
Original Eyes



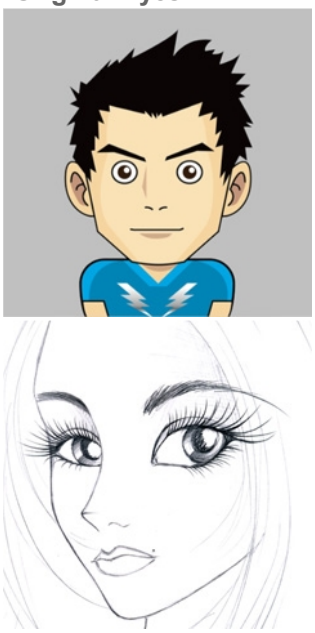
Virtual Eyes Applied



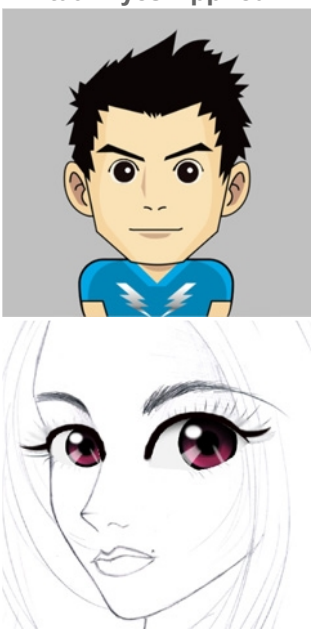
Anime Character



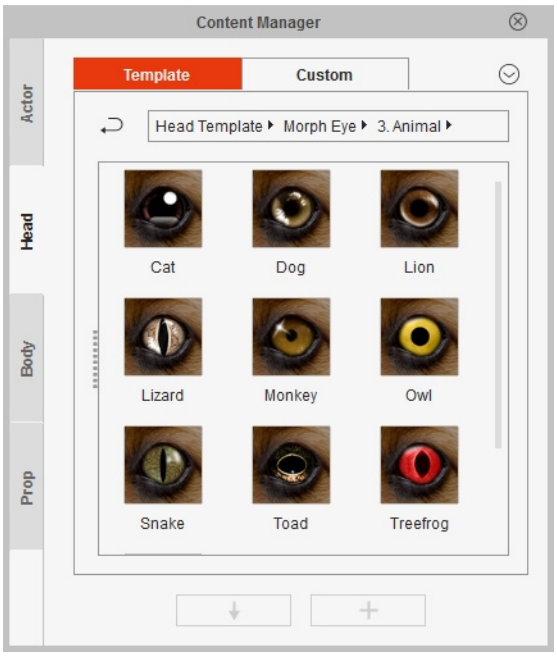
Original Eyes



Virtual Eyes Applied



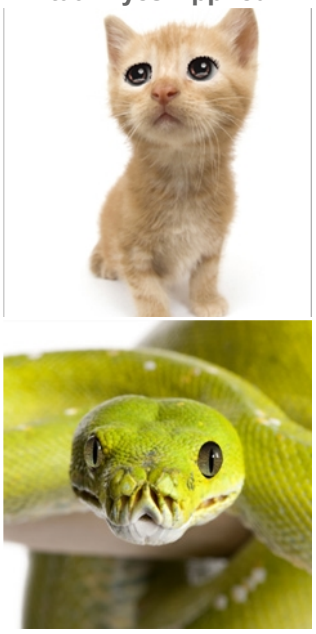
Animal



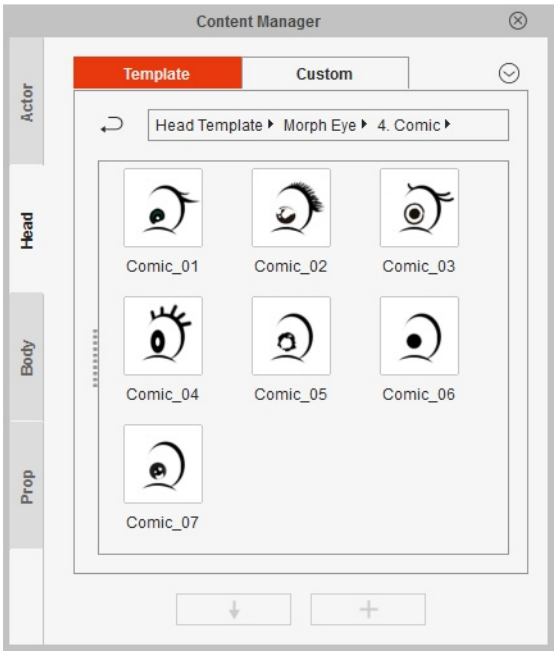
Original Eyes



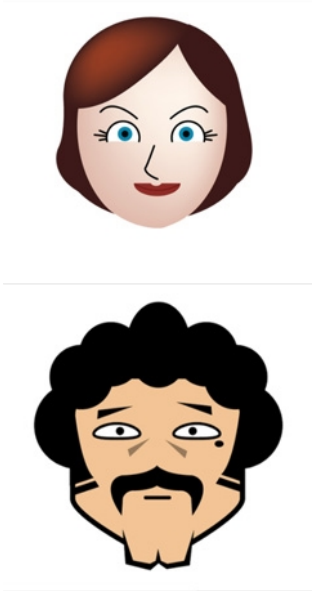
Virtual Eyes Applied



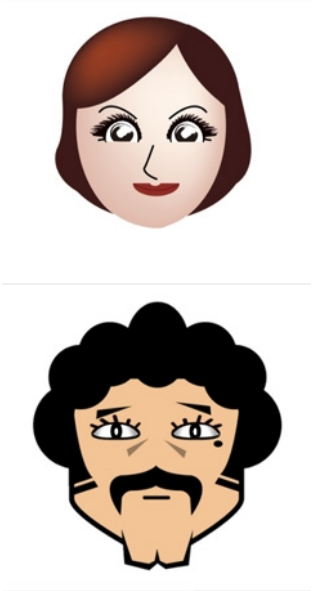
Comic Character



Original Eyes



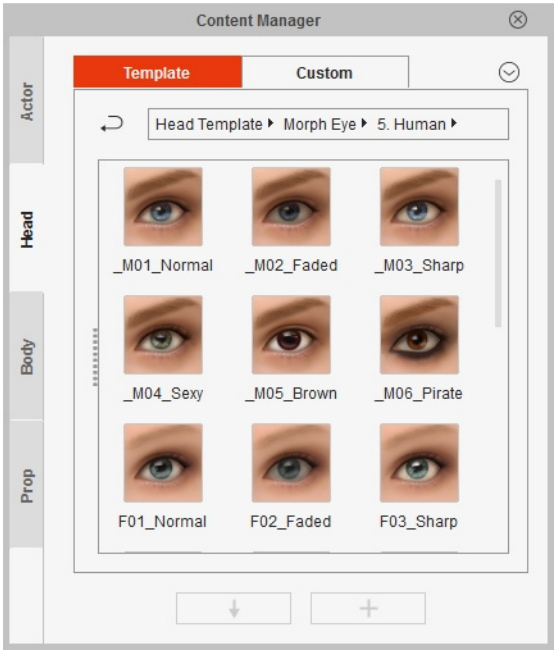
Virtual Eyes Applied



Human

This gallery contains natural eye templates for male, female and additional female color cosmetics. **CrazyTalk Animator 2** has enhanced visual results by taking advantage of FaceFilter's makeover techniques and content. Inside you will find more realistic samples made from real human images with different lighting conditions and makeup effects.

- Male-pattern groups include contents prefixed with the letter "M", which have less focus on eyelashes.
- Female-pattern groups include contents prefixed with the letter "F", which contain various styles of eyelashes and highlighted eye makeups.
- A content suffixed with a string "Brown" is designed for Asian style eyes.



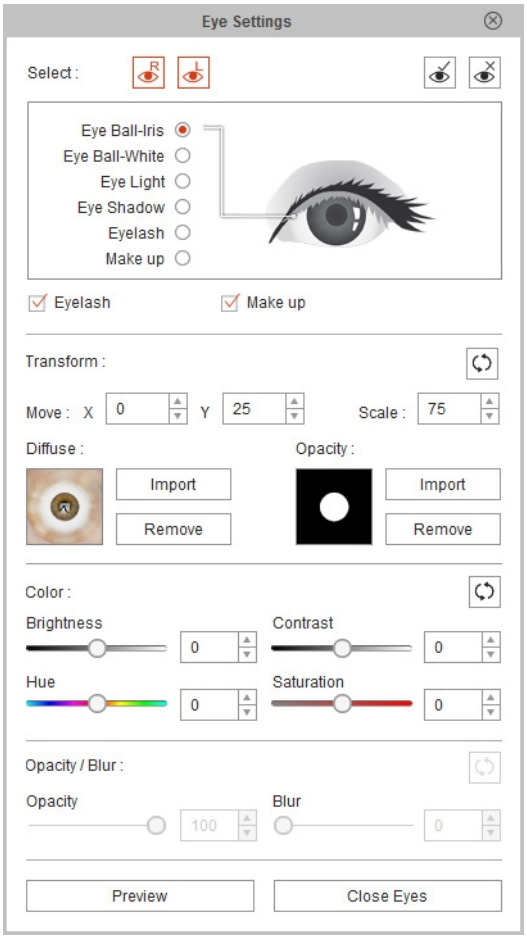
Original Eyes **Virtual Eyes Applied**



Eyeball Transform

After applying an eye template, you may adjust the size and the location of the eyeballs.

1. Click the **Eye Settings** button on the **Create Face Bar** to access the **Eye Settings** panel.



2. Press down the **Left** and/or **Right** buttons to determine whether you want to adjust individual or both eyes.



Left eye | Right eye | Both eyes

3. Choose the **Eyeball - Iris** or **Eyeball - White** radio button.
4. In the **Transform** section, adjust the **Move** Move : or **Scale** Scale : values to decide the size of the eyeball.



Original Eye-ball



Eyeball size changed



Eyeball position changed

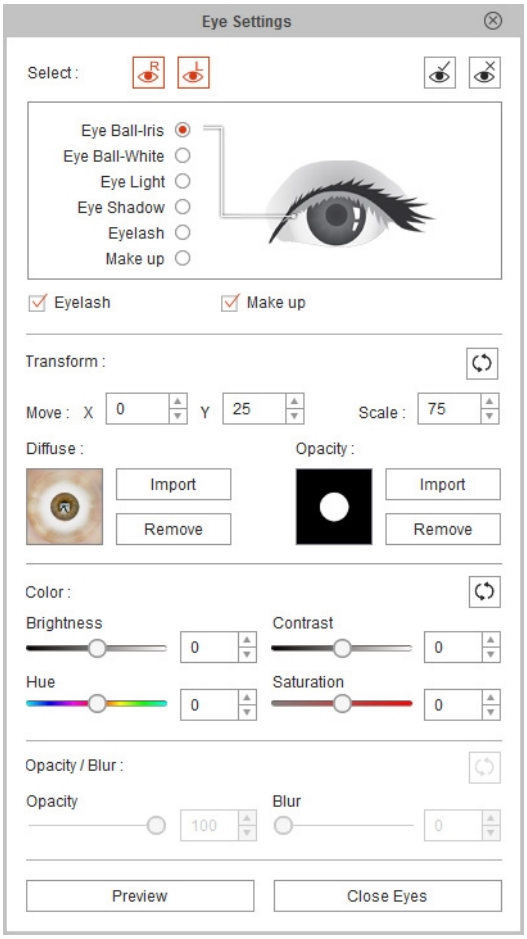
Note:

You may click and keep the **Check Eyes** button pressed to compare with the original.

Eyeball Iris Color and Eyeball Whites

You may customize the color of the eyeball by changing the diffuse color of the iris and adjusting the whiteness.

1. Click the **Eye Settings** button on the **Create Face Bar** to access the **Eye Settings** panel.



2. Press down the **Left** and/or **Right** buttons to determine whether you want to adjust individual or both eyes.



Left eye | Right eye | Both eyes

3. Choose the **Eyeball - Iris** or **Eyeball - White** radio button.
4. In the **Color** section, adjust the values for **Brightness**, **Contrast**, **Hue** and **Saturation**.



Original Eye-white and Iris color



Eye-white color changed



Iris color changed

Note:

You may click and keep the **Check Eyes** button pressed to compare with the original.

Eye Light

The **Eye Light** simulates the specularity effect on the eyeballs, which implies the light direction. This feature facilitates you in creating sparkling, crystalline, or turbid eyeballs.

You can also use custom light shapes by loading a grayscale image into the **Opacity** channel.

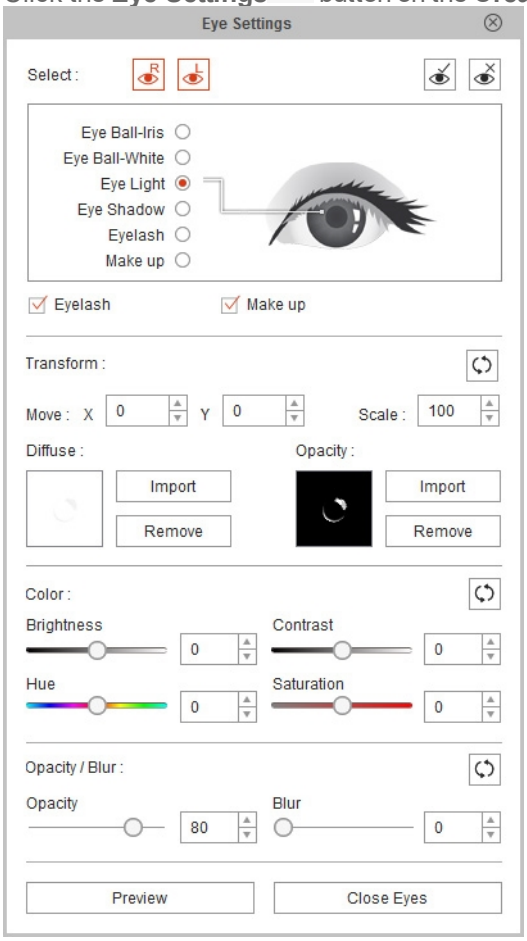
Design the Light Shape

There are three sections in the panel involved in the designing of light shapes; the **Opacity** channel, the **Transform**, and the **Opacity/Blur** sections.

1. You must apply an eye template from the eye gallery first.



2. Click the **Eye Settings** button on the **Create Face Bar** to access the **Eye Settings** panel.



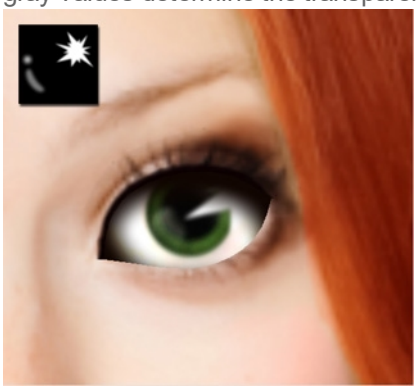
3. Press down the **Left** and/or **Right** buttons to determine whether you want to adjust individual or both eyes.



Left eye | Right eye | Both eyes

4. Choose the **Eye Light** radio button.

5. In the **Opacity** channel, click the **Import** button to load a grayscale image that will decide the shape of the eye light and imply the direction of the light. The black part will get cut out; the white part will be fully displayed; the gray values determine the transparency (alpha) level of the object.



6. In the **Transform** section, adjust the position and the size of the eye light.



7. In the **Opacity/Blur** section, adjust the value of the **Opacity** and **Blur** to decrease the overall-sharpness appearance.





Original Eye Light shape



Eye Light shape changed

Eye Shadow

The **Eye Shadow** features the strength of the sphere effect on the eyeballs. You may decide the size of the shadow, the color of the **Diffuse** image, and the opacity and blurriness of the **Opacity** channel.

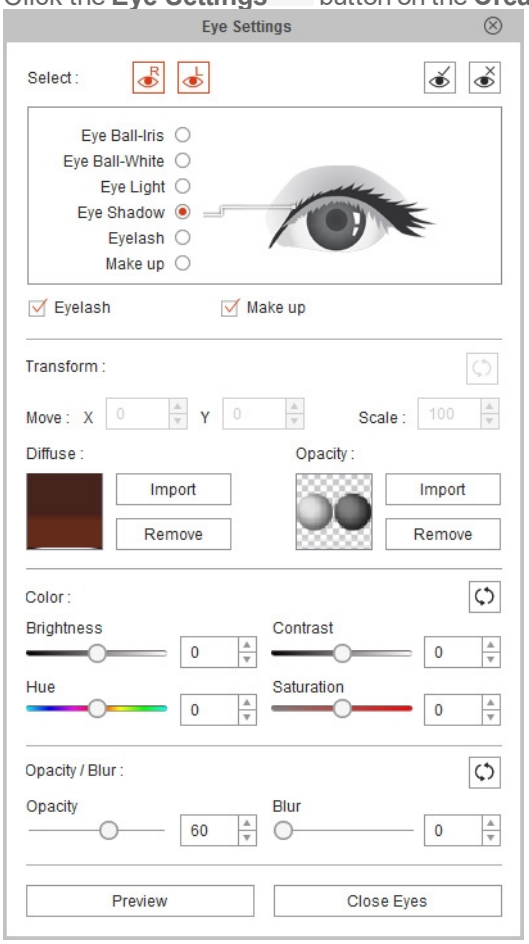
Set the Sphere Sense of the Eyeball

If you need to set the sphere-feeling of the eyeball, then you may adjust the **Eye Shadow** to increase/decrease the sensation.

1. You must apply an eye template from the eye gallery first.



2. Click the **Eye Settings** button on the **Create Face Bar** to access the **Eye Settings** panel.



3. Press down the **Left** and/or **Right** buttons to determine whether you want to adjust individual or both eyes.

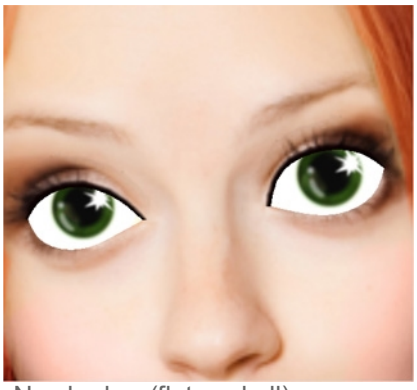


Left eye | Right eye | Both eyes

4. Choose the **Eye Shadow** radio button.
5. Adjust the sliders in the **Opacity/Blur** section.



Heavy shadow (spherical eyeball)

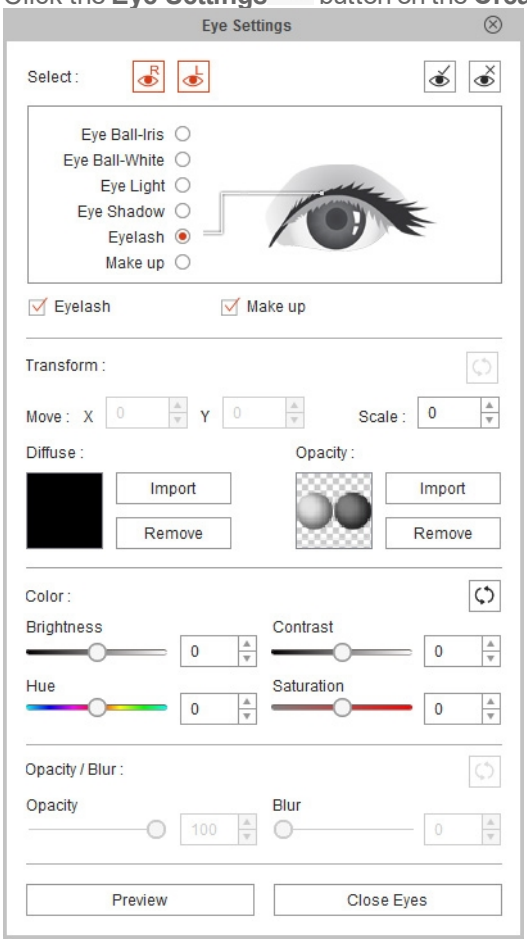


No shadow (flat eyeball)

Eyelash

CrazyTalk Animator offers you **Eyelash** effects to generate a more vivid appearance in the eyes. You may apply the **Eyelash** effect to mimic mascara, and enhance the eyelashes of the actor. Notice that female eye templates contain longer eyelashes.

1. You must apply an eye template from the eye gallery first.
2. Click the **Eye Settings** button on the **Create Face Bar** to access the **Eye Settings** panel.



3. You may determine if you want the actor to have eyelash or not by activating or deactivating the **Eyelash** check box.


Without Eyelashes


With Eyelashes

4. Choose the **Eyelash** radio button.

5. In the **Color** section; adjust the value of **Brightness**, **Contrast**, **Hue** and **Saturation** to change the color of the eyelashes.



Note:

Click and keep the **Click to Close Eyes** Close Eyes button pressed in order to view the **Eyelash** with closed eyes.

Length of Eyelash

You can decide the length of the eyelashes by adjusting the **Scale** Scale : value.



Normal eyelashes

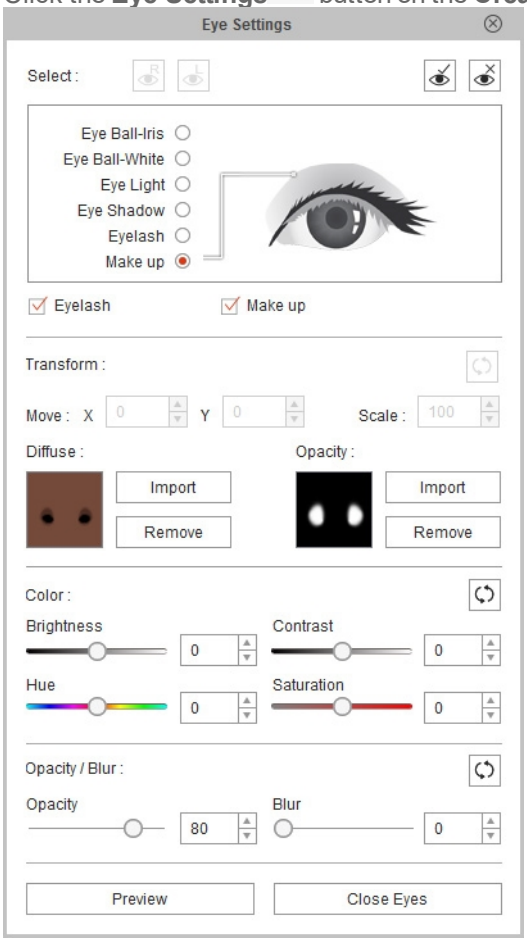


Longer eyelashes

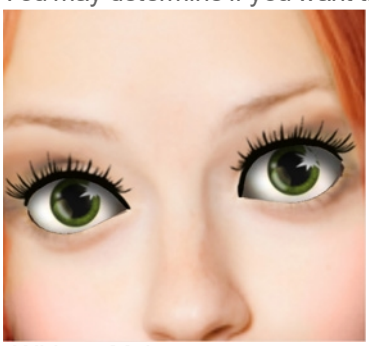
Makeup

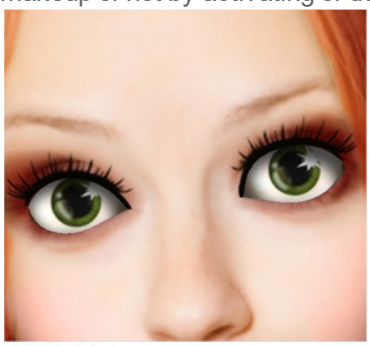
CrazyTalk Animator offers **Makeup** effects to generate vivid eyes. With the **Makeup** feature, you may generate various make-up styles such as; Smokey, golden shimmering or bruised eyes. You can also use it to conceal or cover creases or defects on the actors' eyelids. Distortions and stretching issues, created when actors close their eyes, can also be covered with **Makeup** effects.

1. You must apply an eye template from the eye gallery first.
2. Click the **Eye Settings** button on the **Create Face Bar** to access the **Eye Settings** panel.



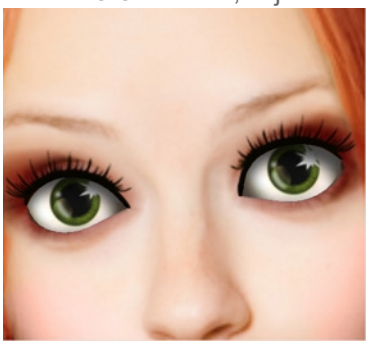
3. You may determine if you want the actor to have makeup or not by activating or deactivating the **Makeup** check box.


Without Makeup


With Makeup

4. Choose the **Makeup** radio button.

5. In the **Color** section, adjust the values for **Brightness**, **Contrast**, **Hue** and **Saturation**.



6. In **Opacity/Blur**, adjust the **Opacity** and **Blur** values to define the clarity of the makeup.

Note:

Click and keep the **Click to Close Eyes** Close Eyes button pressed in order to view the **Makeup** with closed eyes.

Benefits of Makeup

In **Select Mode**, you may use the **Alt** key to accelerate the camera switch operation.

Adding Eye Cosmetics and Eyelashes



Original image

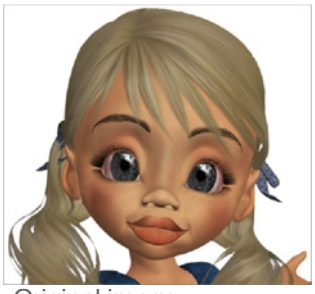


With Makeup

Changing Eye Shapes

You can use the **Makeup feature** to act as eyelids when you change the eye shapes. The following example turns big eyes into natural-looking small eyes.

1. Use an actor with properly fitted wire frames.

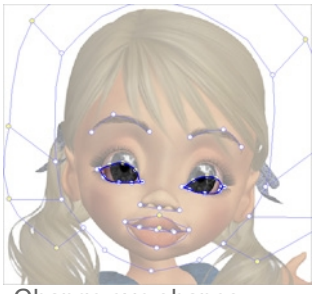


Original image



Well-fitted Eye wires

2. Change the eyes' wires to change the shape of the eyes. You may see the new eyelids mapped over the original image.


Change eye shapes


Result

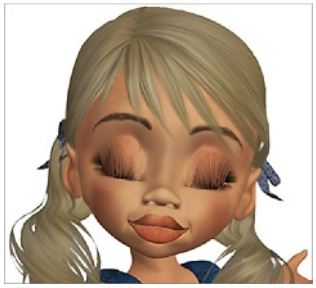
3. Apply the **Makeup** effect to conceal the original eye image.


Eye shadow applied


Eyelash applied

Concealing Image Stretch Issues on Eyelids

When the actor's eyes close, you may sometime see an image-stretch issue. With the **Makeup** effect, you can cover the stretching image with solid color.


The eyelid image stretches as the actor blinks without makeup.


Apply a makeup effect to conceal the stretching image.

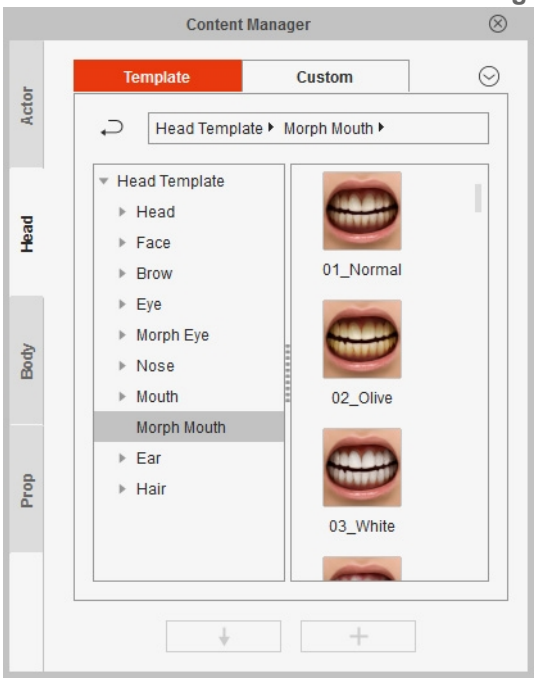
Mouth Settings

Every character in **CrazyTalk Animator** is able to talk. You may apply a virtual mouth with teeth, along with modifying the mouth color and lips settings on the character.

Applying Mouth Template

There are various types of teeth templates designed for real human, non-human creatures, or comic characters. **CrazyTalk Animator 2** has enhanced the visual results and provides more unique templates for different age group (adult, child, or toddler) and teeth conditions (well or poorly aligned).

1. Switch to the **Head** tab in the **Content Manager**, and find the **Morph Mouth** content folder.



2. Apply one of the templates from the **Template** library.



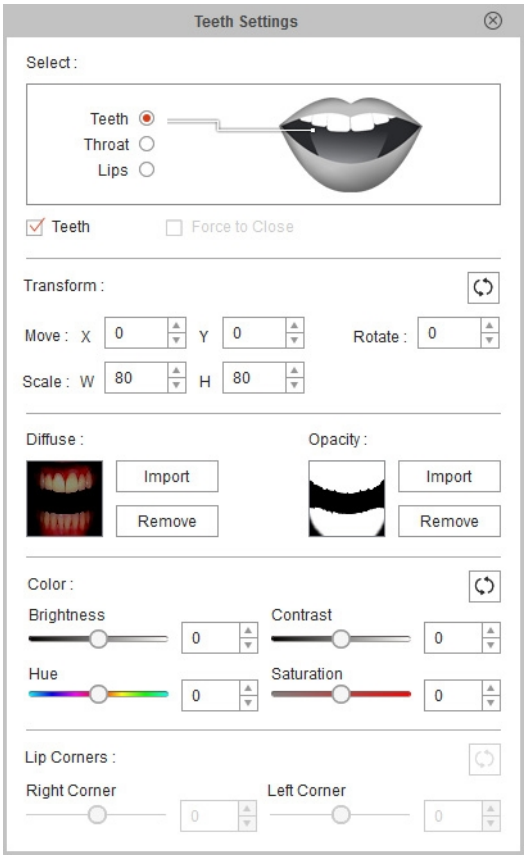
3. Click the **Teeth Settings** button on the **Create Face Bar** to access the **Teeth Settings** panel.
   - Teeth
   - Creating Custom Teeth
   - Throat
   - Lips

Teeth

After you apply a virtual mouth, you may then modify the location, orientation and the color of the teeth inside the mouth.

Teeth Location and Angle

1. Click the **Teeth Settings** button on the **Create Face Bar** to access the **Teeth Settings** panel.



2. To set the size of the teeth, use the **Scale** Scale : feature. Adjust the **X**/**Y** values to adjust the width and height of the teeth.



Oversized Teeth



Scaled Teeth

3. To specify the position of the teeth in the mouth, use the **Move** Move : parameters. Adjust the **X**/**Y** values to relocate the teeth.



Location offset



Location adjusted

4. Use the **Rotate** value to decide the orientation of the teeth and match the angle of the mouth.



Angle not fixed



Angle fixed

Teeth Color

You can change the teeth color in the **Color** section. Move the **Brightness**, **Contrast**, **Hue**, and **Saturation** sliders to adjust the teeth color. Alternatively, enter a number in the boxes next to the slider bar to change the parameter value.



Yellow teeth

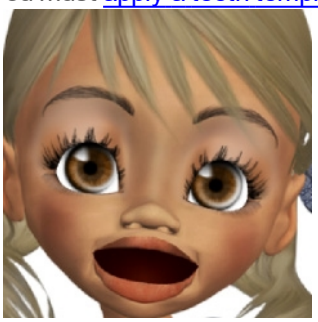


Teeth whitened

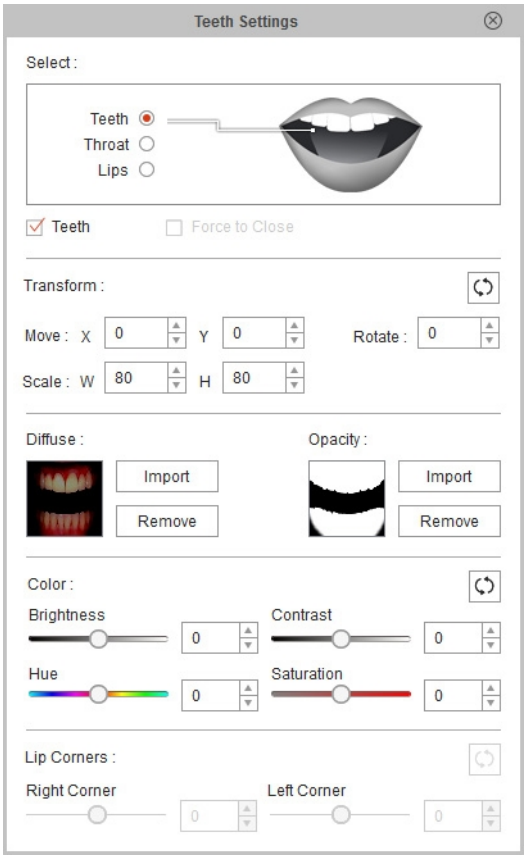
Creating Custom Teeth

You may create your own character's teeth by importing a custom teeth image:

1. You must apply a teeth template from the teeth gallery first.



2. Click the **Teeth Settings** button on the **Create Face Bar** to access the **Teeth Settings** panel.



3. Choose the **Teeth** radio button.
4. In the **Diffuse** channel, click the **Import** button to load the texture image for the virtual teeth. (jpg, bmp, png are supported, 256 x 166 pixels recommended)

   The teeth image, in **PNG** format, containing alpha channel.
   (The part displayed in the check board pattern area)

   Note:

   - If you import an image in 32-bit **BMP**, then the black part in the image will be converted into the alpha channel. If your image is not in 32-bit **BMP** or **PNG**, then you must load the grayscale image to decide the display area of the teeth.

- The part with alpha channel will be transparent and it will reveal the inside mouth color.



5. In the **Transform** section, fine tuning the position and orientation of the teeth to match the angle of the mouth.
6. In the **Color** section, adjust the color of the teeth.



Before adjusting the teeth color

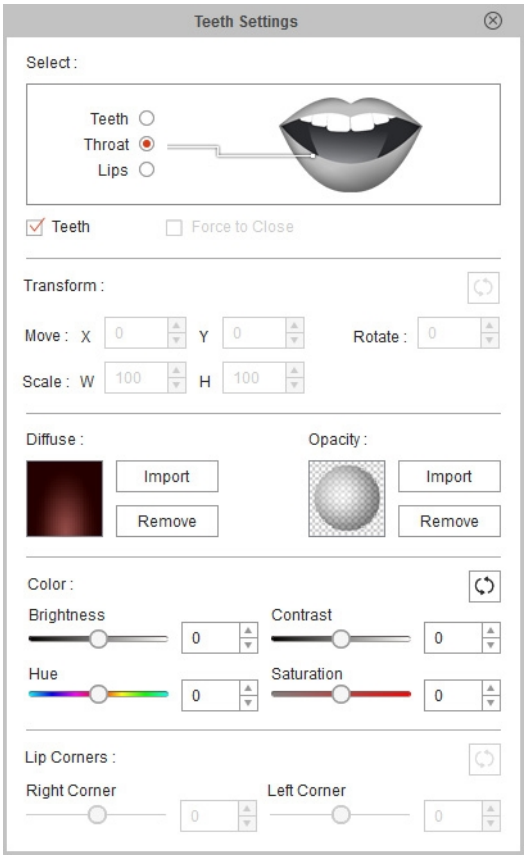


After adjusting the teeth color

Throat

CrazyTalk Animator lets you modify the inner mouth and throat color for when mouths need to be opened wide. After you apply a virtual mouth, you may then modify the oral color.

1. Click the **Teeth Settings** button on the **Create Face Bar** to access the **Teeth Settings** panel.



2. Choose the **Throat** radio button.
3. In the **Color** section, adjust the value of the **Brightness**, **Contrast**, **Hue** and **Saturation**.


Narrow throat


Deep throat

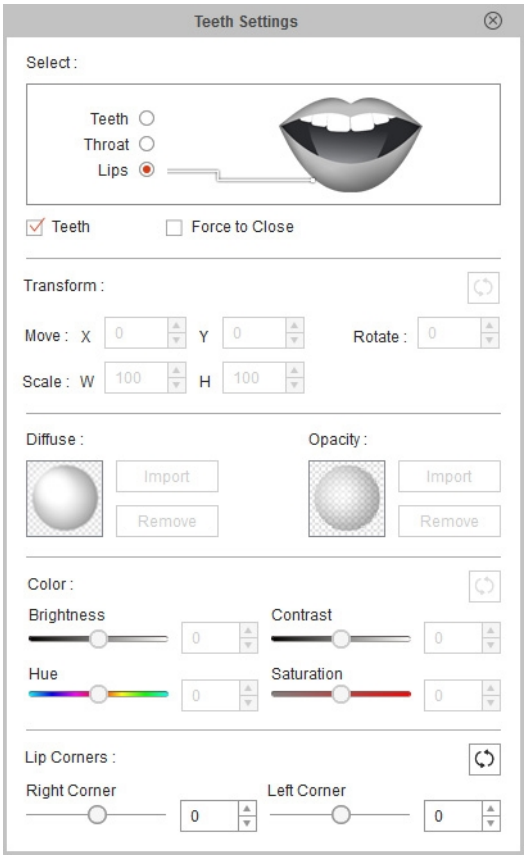
Lips

Most of the time, characters in photos smile. However, the mouth shape may not be as natural as you might expect when characters talk in **CrazyTalk Animator**. This is because the height of the lip corners. You may use the lip settings to lower the lip corners and keep the mouth line as flat as possible.

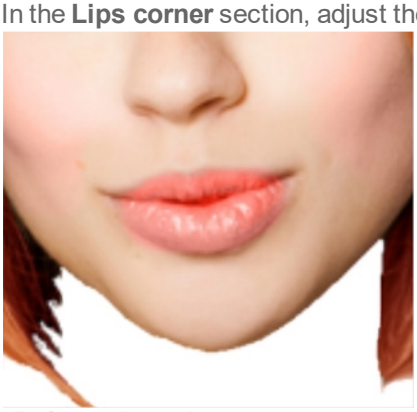
After you apply a virtual mouth, you may modify the corners of the lips.

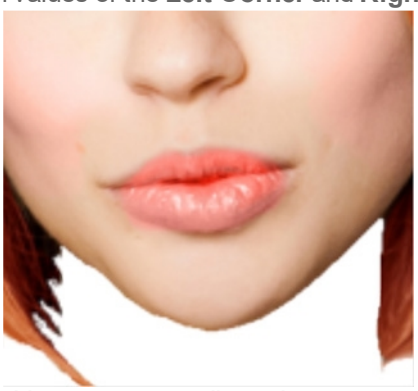
Leveling the Lip Corners

1. Click the **Teeth Settings** button on the **Create Face Bar** to access the **Teeth Settings** panel.



2. Choose the **Lips** radio button.
3. In the **Lips corner** section, adjust the position values of the **Left Corner** and **Right Corner**.

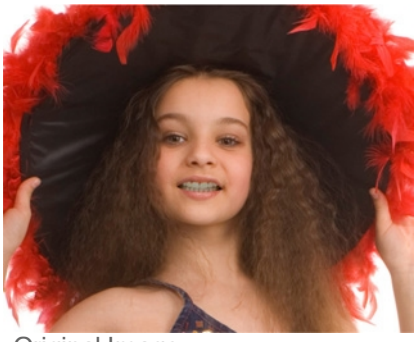

Before adjusted


Lip corners are adjusted

Closing Actor's Mouth

If the character in the original image is with opened mouth, then you may need to close it with the **Force to Close** feature.

1. Make sure that the control points for the open lips are correctly specified when adjusting the wire frame.
2. Activate the **Force to Close** box to close the character's mouth.



Original Image



Force to Close: **ON**

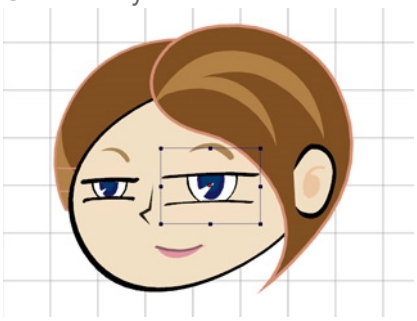
Transforming Facial Features

In order to stylize your characters, you may move and scale each body part and facial feature. Characters with same parts may easily morph into different ones. Before starting to customize a character, you first need to select a character. Then click the **Composer** button to enter the **Composer Mode**.

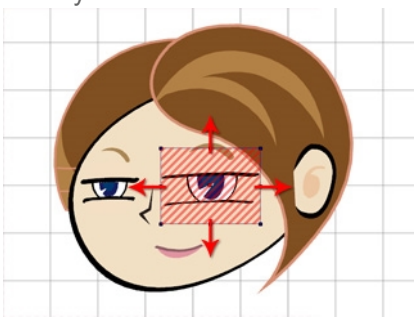
Stylizing Facial Features

The appearance of the character can be easily changed with transformed facial features. Please note that this method only applies to the **Sprite-based** head.

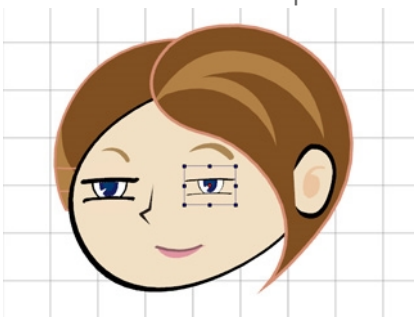
1. Click on any facial feature. A transform handle box will then appear around the selected feature.



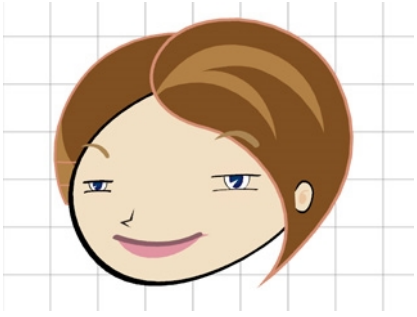
2. Move your cursor to inside of the box, and drag to relocate the feature.



3. You may drag the eight control points around the box to change the size of the feature.
   Please note that the four points on the corners will help change the size while maintaining the current ratio.



4. You may rotate to preview the results in the **Stage Mode**. The rotation data will not be kept in the **Composer Mode**. The body part will later return to the initial angle once the character is defined.
5. You may use the same method to modify all facial features.



Note:

- Each character pose is fixed in the **Composer Mode**. Therefore, you can only rotate each body part, or

facial feature, for previewing.

- If you want to rotate the body parts or facial features, then you must modify all the elements inside of them. For more information please refer to the Transforming Poses in Facial Features section.

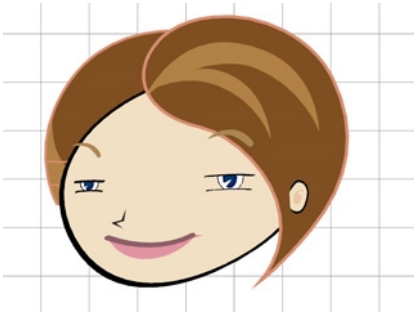
Transforming Elements in Facial Features

Pro & Pipeline

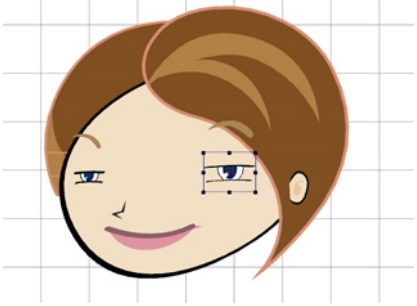
When you wish to Transform Facial Features, you may sometimes find that the sprites cannot rotate inside the composer. Also, when you load custom media files into an existing sprite, you might need to further modify the loaded file, in order for it to fit well with the sprite.

Transforming the Elements inside a Sprite (Body Parts or Facial Features)

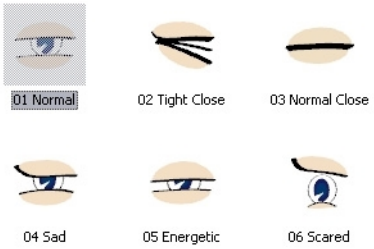
1. Select a character. Click the **Composer** button to switch to the composer mode.



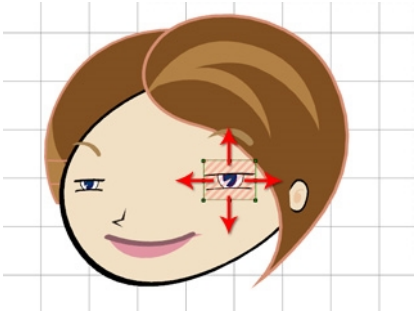
2. Pick a part, or feature, and click the **Sprite Editor** button.



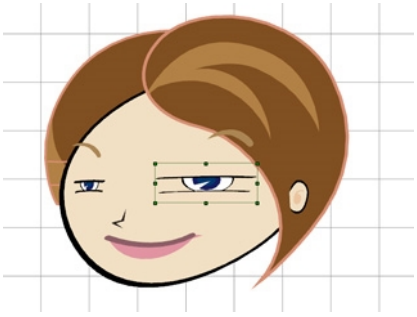
3. Pick the element to be modified. A transform handle box (green) will appear around the selected element.



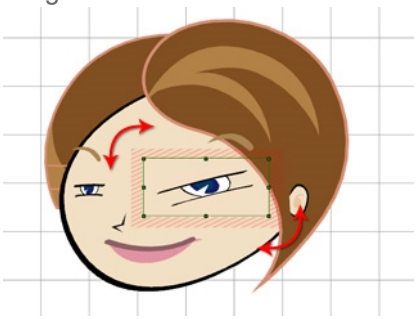
4. Move your cursor to the inside of the box to drag and moving the element.



5. Drag the eight control points around the box in order to change the size of the element.
   Please note that the four points around the corners, are there to help you change the size while maintaining the current ratio.

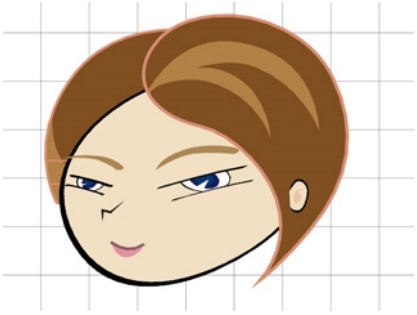


6. Drag the area outside the box to rotate the element.



7. Select other elements for transformation.

8. To make the same modifications, you may pick other sprites without closing the **Sprite Editor**.



Note:

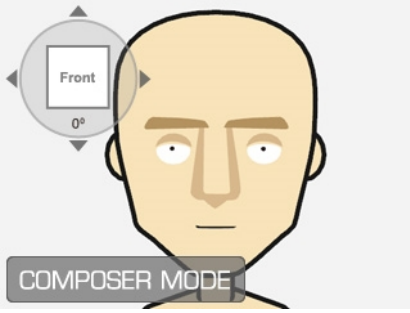
Please take note that each body part is called a "sprite". Refer to the sections below for more information:

- Sprite Concept
- Preparing a Custom Sprite

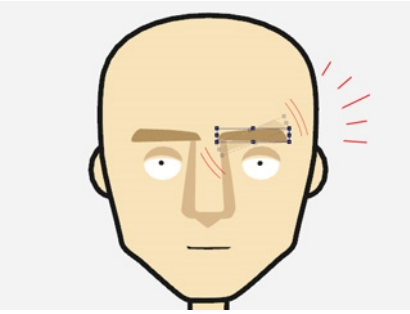
Simultaneously Transforming Multiple Poses

When you want to create a new appearance for the face, you may sometimes rotate the facial features, especially the **eyebrows** and the **eyes**. However, in the **Composer Mode**, you are only allowed to rotate the sprite, and not the actual bone.

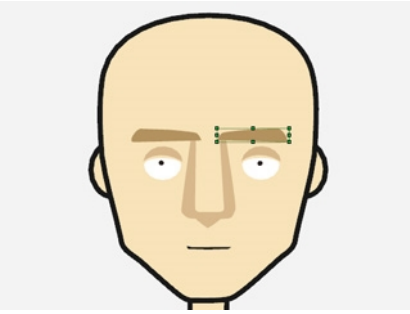
1. Apply a character from the **Actor** >> **Actor Template** >> **G2 Character** >> **Replace Dummy** and enter the **Composer Mode**.
   (please note the front and back hair pieces are removed for better observation)



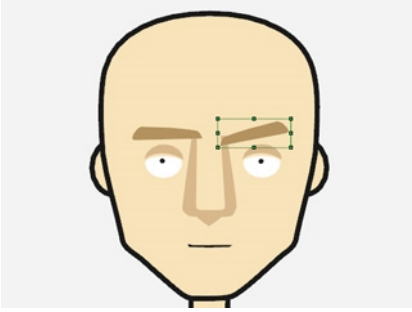
2. Select one of the eyebrows (in this case, the left one) and try to rotate it. The facial feature instantly returns to its original angle after the mouse button is released.



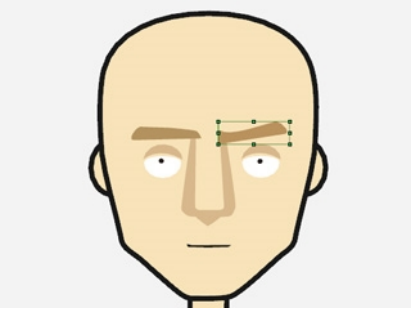
3. Open the **Sprite Editor** so that you are able to rotate the poses within this sprite.



4. If you rotate the pose now, you are only rotating the current shown pose without influencing the other poses of the facial feature (take the normal and the angry as the comparison items).

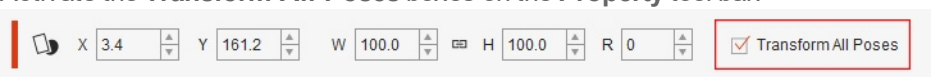


The normal eyebrow is rotated a little

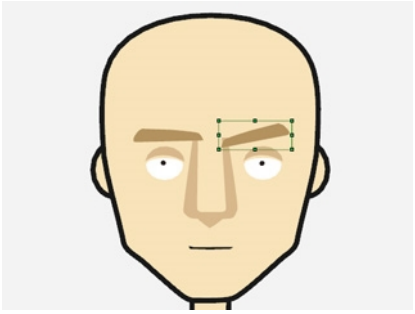


The angry eyebrow is not affected.

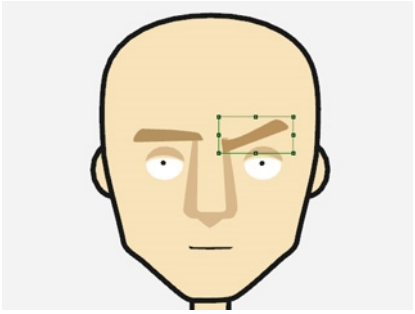
5. Undo to resume the angle of the pose.
6. Activate the **Transform All Poses** boxes on the **Property** tool bar.



7. Rotate the pose again. The rest of poses will be rotate as well to match the appearance of the face.



The normal eyebrow is rotated a little

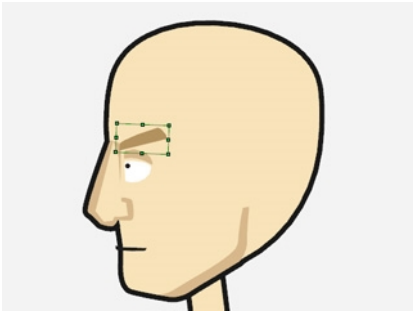


The angry eyebrow is affected and rotates more as well

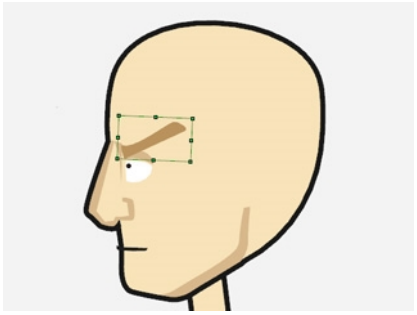
Note:

If you want to fine-tune the transformation of any other pose in the same angle after this step, please make sure the **Transform All Poses** box is deactivated.

8. Navigate to another angle of the character and repeat the steps to change the look of the face.



Repeat the same step at 270 degrees



The angry eyebrow is affected and rotated more as well

Note:

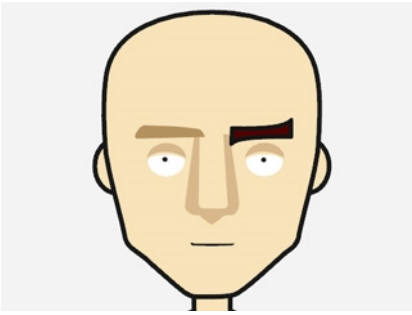
It is highly recommended that you move and scale the facial features when the **Sprite Editor** is closed in order to simultaneously change the position and size of the facial features at different angles.

Relocating Pivots for Facial Features

The pivot points of the facial features are used as the pivots for transformation, especially the rotating and scaling when the character is exhibiting different expressions. Different pivot positions can affect the expression results tremendously, especially in the case of the **eyebrows**.

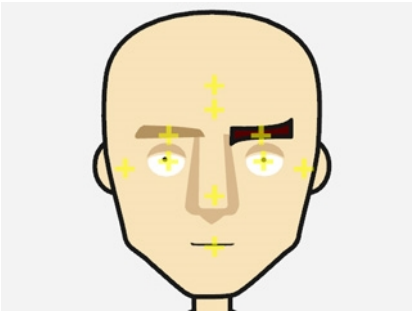
Relocating Pivots for Facial Features Pro & Pipeline

1. Completely create one of the eyebrows by any method (by replacing, pose sharing and mirroring).

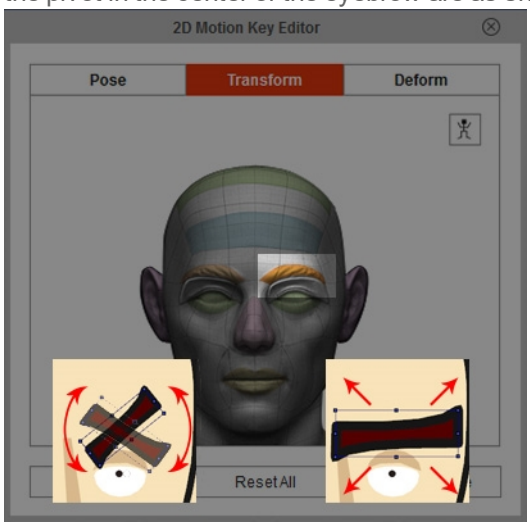


2. Activate the **Show Bone** box in the bone tool bar to show the pivot for the facial features.

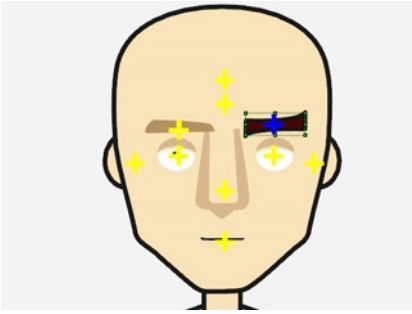




Note:
The original transformations (rotation and scale by the **2D Motion Editor - Body Mode** >> **Face** tab) based on the pivot in the center of the eyebrow are as shown below.



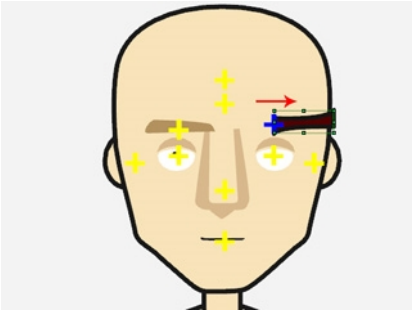
3. Select the eyebrow and open the **Sprite Editor**. The bounding box turns to green which implies that only the current pose will be adjust afterward.



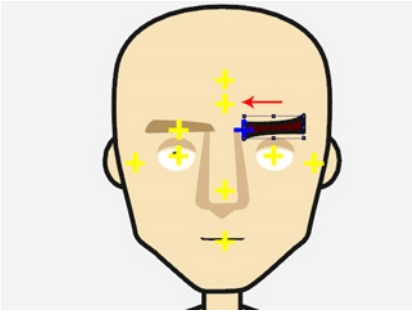
4. Activate the **Transform All Poses** box so that each pose will be transformed afterward.



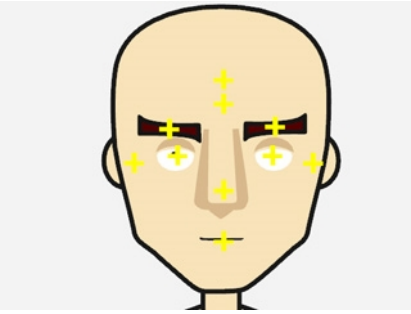
5. Move the current pose to align it to the pivot point; the rest of the poses will be moved together at the same time.



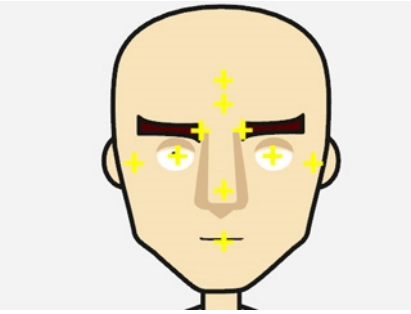
6. Close the **Sprite Editor**.
7. Move the entire sprite (including all poses) to an ideal position.



8. The facial feature will then move, rotate and scale based on the re-positioned pivot.
9. Repeat the same steps so that the pivot of the other eyebrow is relocated accordingly.



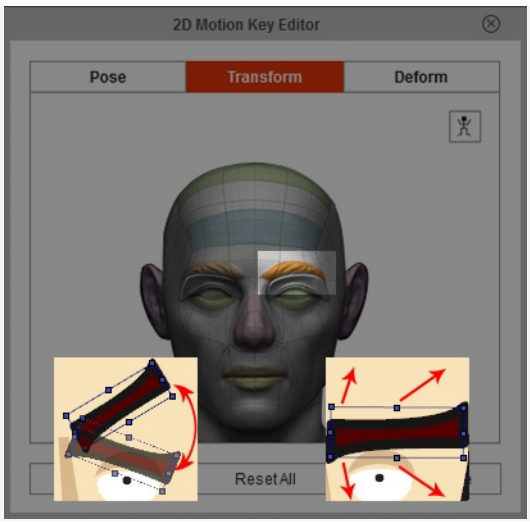
The pivots in original position



The relocated pivots

Note:

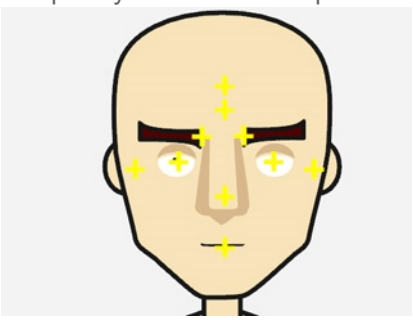
The transformations (rotation and scale by the **2D Motion Editor - Body Mode** >> **Face** tab) based on the new position of the pivot are as shown below.



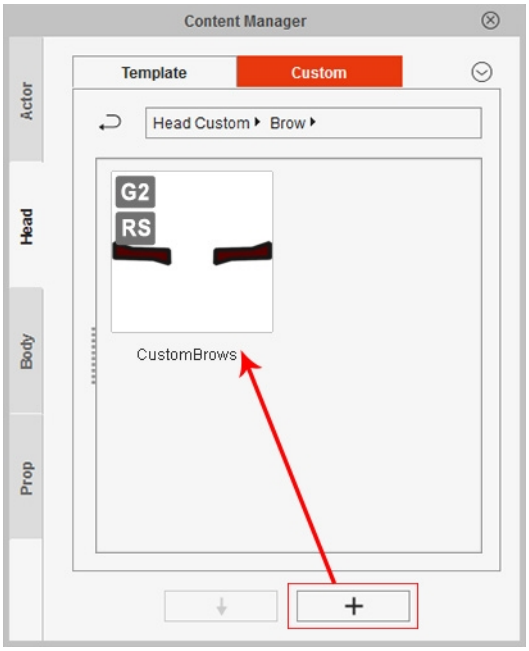
The Effect After Pivot Offset

In addition to the transformation base for a sprite, the relocation of the pivot influences the template applying the result as well. Please note that the eyebrow created in the previous section is taken as the example.

1. Make sure the character is in the **Composer Mode** after the certain facial feature (in this case, the eyebrows) is completely created and the pivot is set to ideal position.



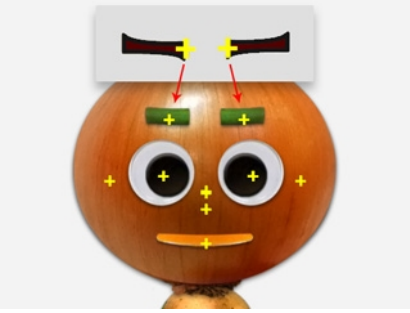
2. Switch the **Content Manager** to **Head** >> **Brow** (according to the facial feature selected) library.
3. Click the **Add** button to add the facial feature into the custom library.



4. Apply another character. In this case, the pivots of the facial feature (the eyebrows) are located in the center of the sprite.



5. Apply the template that is added in step 3. The facial features will be applied and aligned in accordance with the position of the pivots.





The facial features will be applied and aligned to the current pivots.

6. You may need to use the **Transform All Poses** as shown in the previous section to transform the poses back to the adequate position, angle or size.

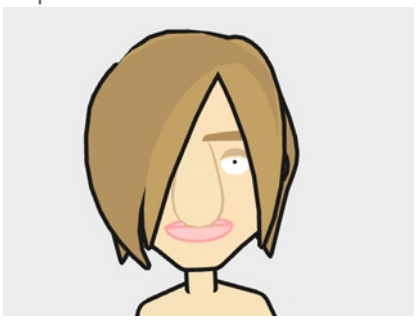


Layering the Facial Features

After you have created custom facial features, especially for the G2 characters, you may need to re-arrange the layer order of them in different angles so that when the characters perform, the facial features will be always display correctly.

Arranging Layers of Facial Features in Every Angle

1. Replace custom facial features to a character.

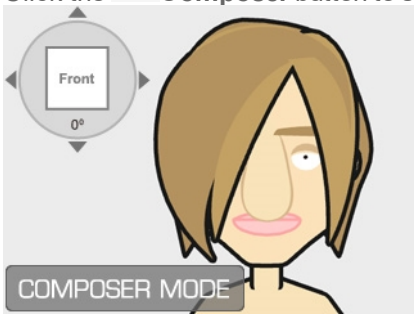


Note:

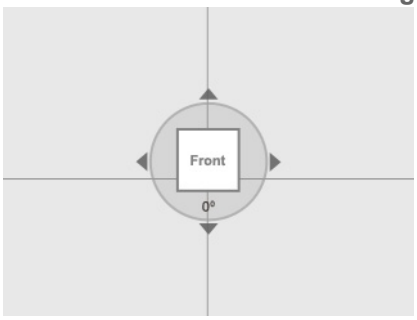
Please refer to the sections below for more information:

- Creating Facial Sprites with Frontal Angle
- Creating Facial Sprites with Multiple Angles

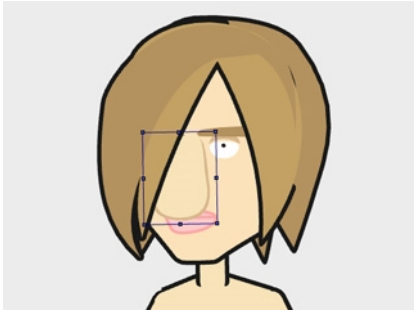
2. Click the **Composer** button to switch to the **Composer Mode**.



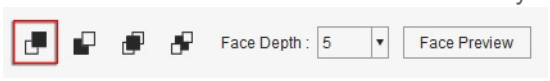
3. Click the 4 arrow buttons of the **Angle Switch** to determine an angle (in this case, 0 degree).

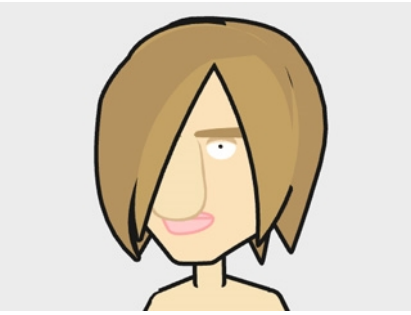


4. Pick the sprite whose layer shall be re-ordered (in this case, the nose).



5. Click on the **Send to Front** button until the layer of the facial feature is correctly set.





The layer of the nose is under the hair.

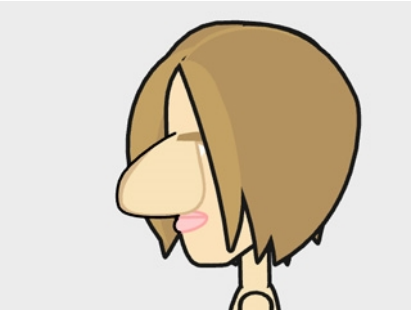


Move the nose to the layer over the hair.

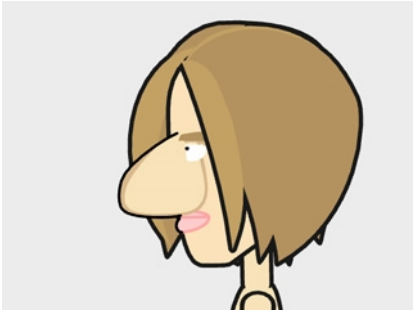
Note:

- **Send to Front**: Move the selected facial feature one layer up.
- **Send to Back**: Move the selected facial feature one layer down.
- **Move to Top**: Move the selected facial feature to the top layer.
- **Move to Bottom**: Move the selected facial feature to the bottom layer.

6. Repeat step 3 to step 5 until the facial features in each angle (in this example, 270 degrees) are correctly placed.



Left (270 degrees): Before moving the eye up to the layer above the nose.



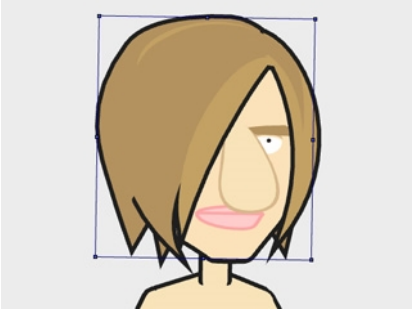
Left (270 degrees): After moving the eye up to the layer above the nose.

Note:

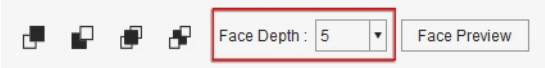
Please note that the layer order can be different in each angle.

Setting and Previewing the Depth of Facial Features

1. Change to a specific angle by using the **Angle Switch** (in this case, 45 degrees) and select a facial feature.



2. Set the **Face Depth** to a desired value.



3. Click the **Preview** button.
4. Hover your mouse cursor on the view port to rotate the head of the character to see the face depth.

Face Depth = 1

Face Depth = 9

5. Repeat the step 1 to 4 for setting different face depth values for each angle to the character.

   Note:

   Please note that the face depth value can be different in each angle.

Setting and Examining Facial Features - Validate Multi-angle Setup

Pro & Pipeline

Since the character in **CrazyTalk Animator** can rotate to different angles, some of the facial features may be concealed by one another in the **Composer Mode**. This makes it hard to to modify the covered facial features.

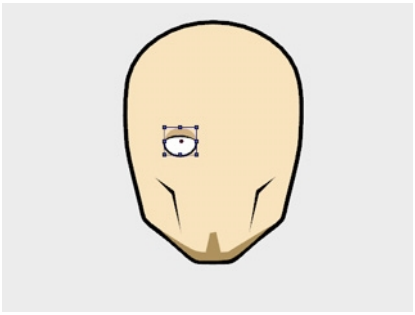
Besides, it is not easy to observe all the angle combinations of the parent and child facial features by merely utilizing the **Angle Switch**.

By using the **Validate Multi-angle Setup** feature, only two adjacent facial features are displayed for better observation and modifications of the bones and the sprites.

The **Validate Multi-angle Setup** panel is a multifunctional one in which you are able to accurately set the position and size of a specific bone of a character, edit selected sprite and its pose and angle, and examine the relations of two parent-child facial features in different angles.



In the right view, the left eye is covered by the hair, which makes it hard to modify them on the working area.



When the **Validate Multi-angle Setup** panel is opened, the working area shows only the selected facial feature and its parent one (in this case, the left eye and the face) while the other facial features are temporarily hidden.

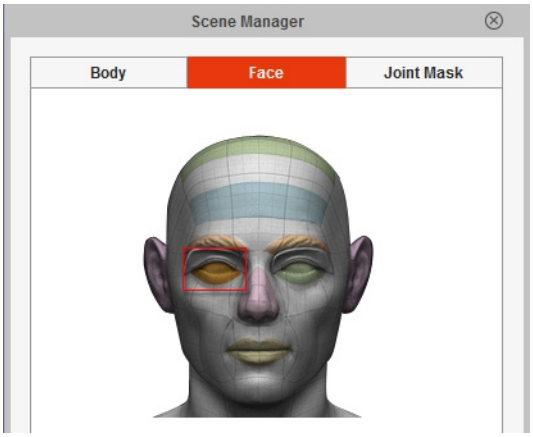
*Please note that this feature is for the **Pipeline** version only.

Open Validate Multi-angle Setup Panel

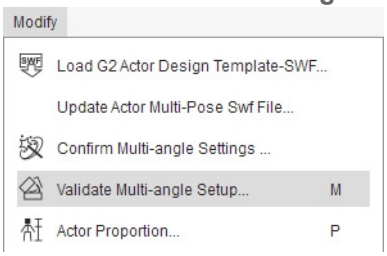
1. Apply a character, select it and click the **Composer** button to enter the **Composer Mode**.



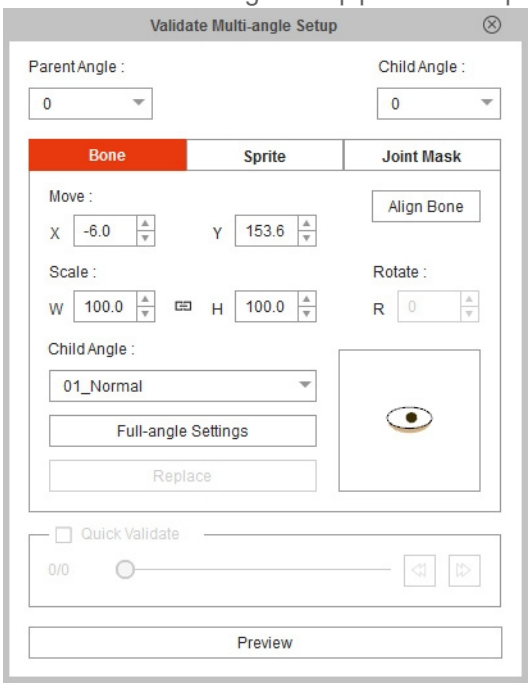
2. Click on the facial feature you want to modify by picking the area of the dummy in the **Scene Manager** (**F5**) >> **Face** tab.



3. Click the **Validate Multi-angle Setup** button.



4. The Validate Multi-angle Setup panel will display.



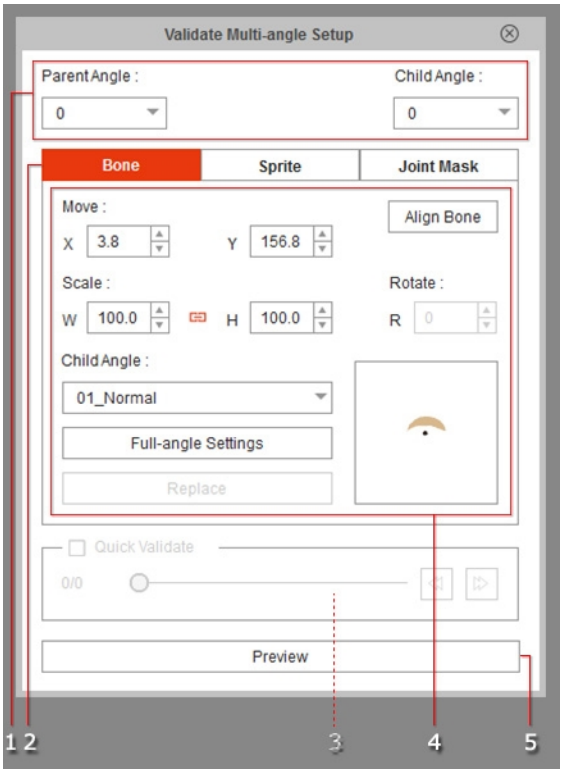
Note:

Please also refer to the sections below for more information.

- Introduction of Validate Multi-angle Setup Panel
- Viewing Angle Combinations of Parent-Child Facial Features
- Using the Bone Tab
- Using the Sprite Tab

Introduction of Validate Multi-angle Setup Panel

Pro & Pipeline



1. Angle Combination Controls
Use these two drop down lists to determine the individual angles of the parent and child facial features.

Please refer to the Viewing Angle Combinations of Parent-Child Facial Features section for more information.

2. Mode Tabs
Click the tab to switch to different tab for modifying the **Bone**, **Sprite** and **Joint Mask** of the **CHILD** (selected) facial feature.

3. Preview Quick Validate (For Body Parts Only)
These controls can only be used for the body parts.

4. Controls in Tab
In the pane, you will see different controls in accordance with the mode tab you choose for modifying the transformation or the sprite of the select facial feature. Please refer to the sections below for more information:

- Using the Bone Tab
- Using the Sprite Tab

5. Bone Rotate Preview
Click this button for quickly observing the rotating result of the selected facial feature.

Viewing Angle Combinations of Parent-Child Facial Features

Pro & Pipeline

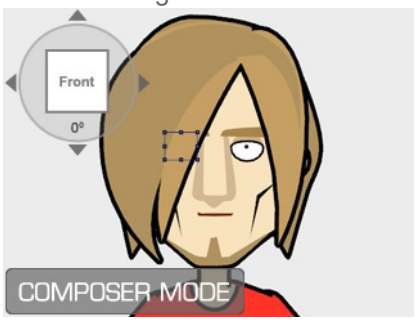
When the **Validate Multi-angle Setup** panel shows, only the **Parent-Child** facial features show on the working area for further editing.

With the **Validate Multi-angle Setup** panel, you can easily determine the angle combinations of the parent and child facial features for better observation and further modification without being distracted by other facial features.

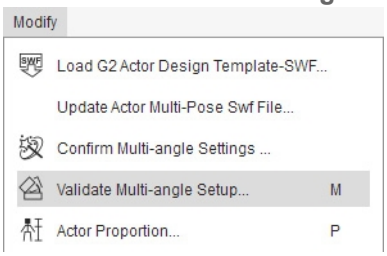
Manually Determine Angle Combinations

By using the **Parent Angle** and **Child Angle** drop down lists, you are able to determine the ideal angle combination for observation or editing.

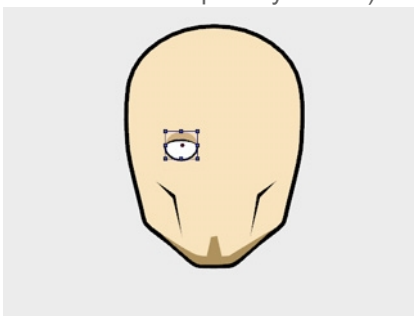
1. Select the target facial feature in the **Composer Mode**.



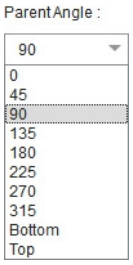
2. Click the **Validate Multi-angle Setup** button.

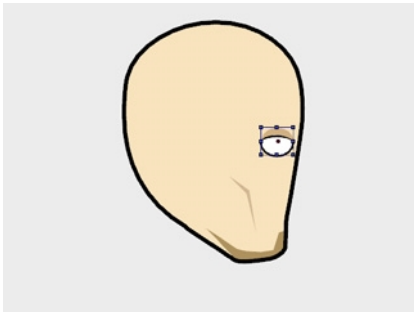


3. You will find that there are only the selected facial feature and its parent (the face) show in the working area (the rest ones are temporarily hidden).



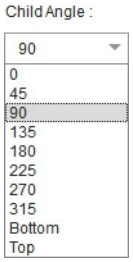
4. Open the **Parent Angle** drop-down list to select a specific angle (in this case, **Right - 90 degrees**) for the parent.

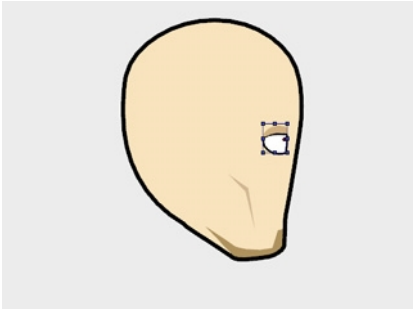




The parent facial feature will immediately turn to the specified angle.

5. Open the **Child Angle** drop-down list to select a specific angle (in this case, **Top**) for the child (selected) facial feature. You will see in the working area that the two facial features form a new angle combination by their own angle.



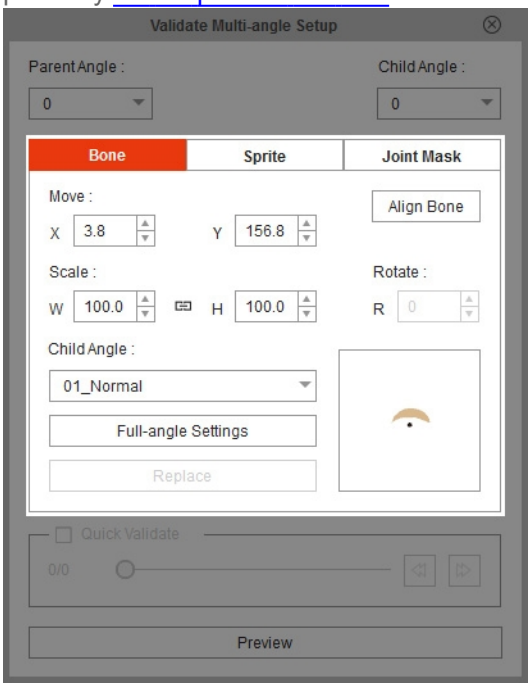


The child facial feature will immediately turn to the specified angle.

Using Bone Tab

Pro & Pipeline

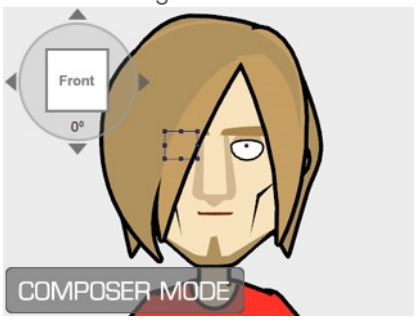
In the **Validate Multi-angle Setup** panel, the chosen tab, by default, is the **Bone** tab. You can use the controls in the tab to precisely set the position and size of the bones with only the parent-child facial features shown on the working area.



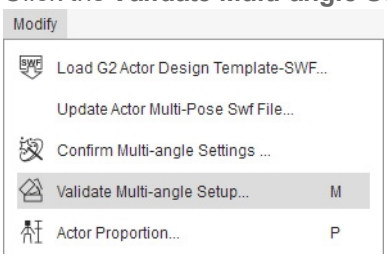
Transforming Selected Facial Feature (Bone)

In the **Bone** tab of the **Validate Multi-angle Setup** panel, you can precisely set the values for transforming the selected bone, which also change the sprite that stuck on the bone.

1. Select the target facial feature in the **Composer Mode**.

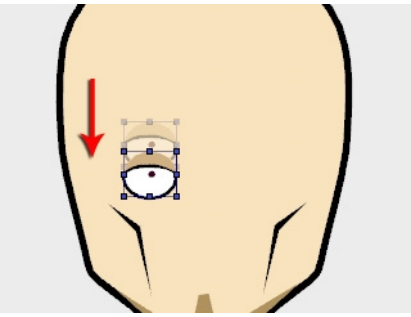


2. Click the **Validate Multi-angle Setup** button.

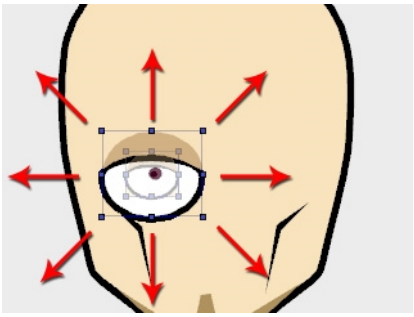


3. Switch to the **Bone** tab.
4. Set a desired angle combination of the facial features.

5. Adjust the position and size of the bone of the child (selected) facial feature on the working area.



Drag the facial feature to re-locate the bone.

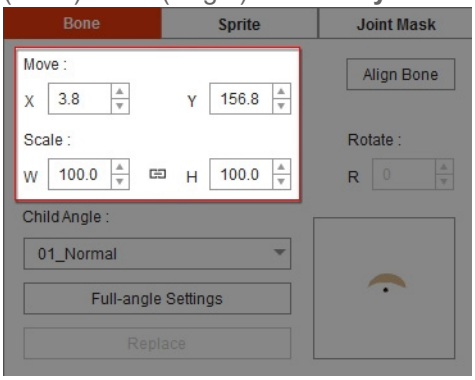


Drag the control points to resize the bone.

Note:

- The facial feature will be highlighted in **Blue**.
- You may adjust the bone position by dragging the facial feature.
- If you want to adjust the size of the bone, then drag the eight control points on the side of the bounding box (the 4 corner ones are used for resizing in ratio).

6. If you want to have a precise values for the position and size of the bone, then adjust the values of the **X**, **Y**, **W** (width) and **H** (height) in the **Body** tab.



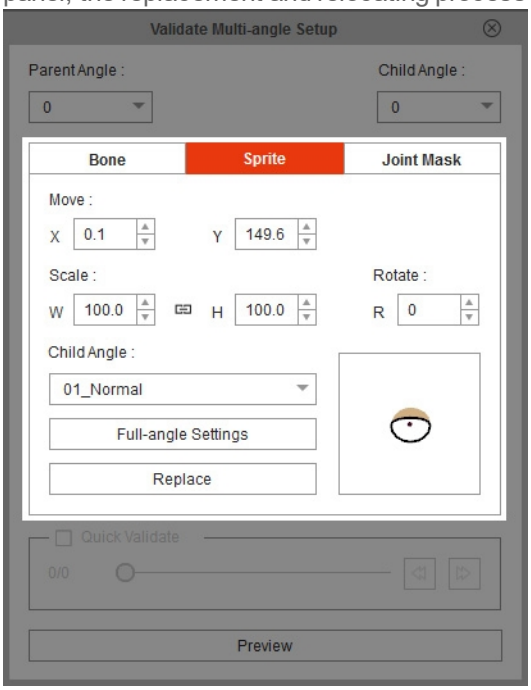
Note:

- Press down the **Keep Ratio** button for resizing in current ratio.
- You can not set the rotation value of the child (selected) bone.
- In addition to the **Move** and **Size** controls in this tab, there are some other controls. However, it is not necessary to use them because they are to be used in the **Sprite** tab.

Using Sprite Tab

Pro & Pipeline

In theory, you are able to use the **Sprite Editor** and the **Angle Switch** in the working area to add, replace or transform the **Angle** media for a **Pose** of a selected facial feature. However, by using the **Sprite** tab in the **Validate Multi-angle Setup** panel, the replacement and relocating process can be much more efficient.

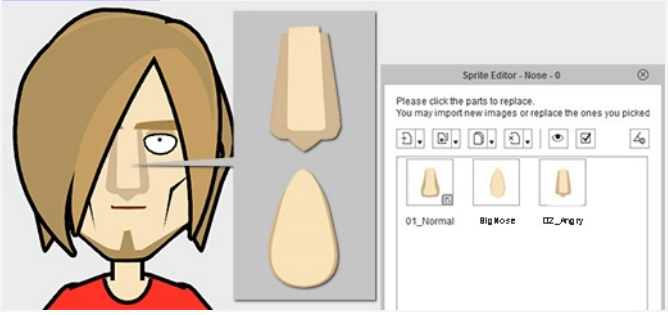


Selecting Poses and Transforming Angle Elements

The **Sprite** tab provides controls for easily selecting poses and transforming angles in the sprite of the child (selected) facial feature.

Note:

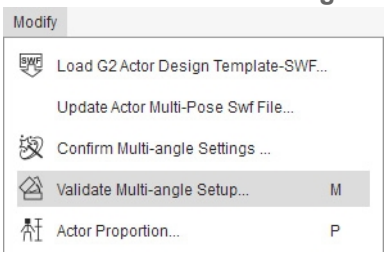
To use the pose-selecting feature, make sure the sprite of a facial feature has been given multiple poses by using the **Sprite Editor** because **Validate Multi-angle Setup** panel does not provide features for adding a new one.



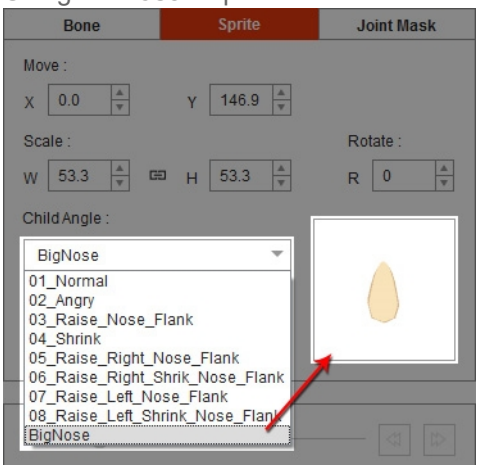
1. Select the target facial feature in the **Composer Mode**.



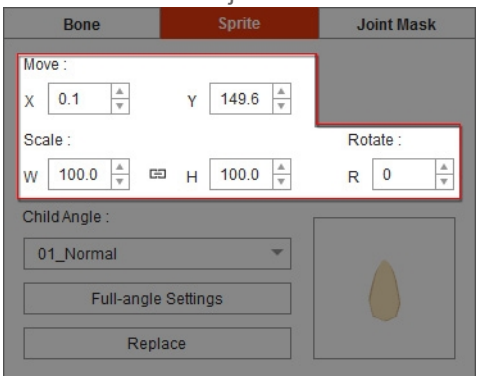
2. Click the **Validate Multi-angle Setup** button.



3. Switch to the **Sprite** tab.
4. Using the **Pose** drop-down list to select the desired pose for editing.



5. Set the values to adjust the transformation data (translation, rotation, scale) of the angle.

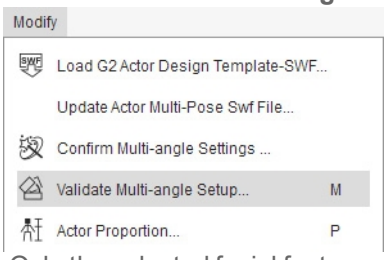


Replacing Angle

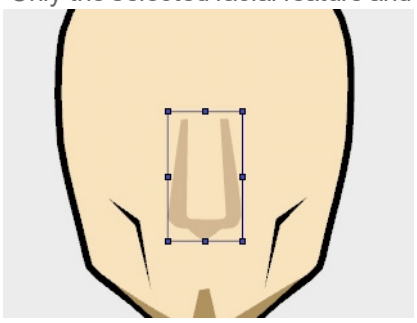
1. Select the target facial feature in the **Composer Mode**.



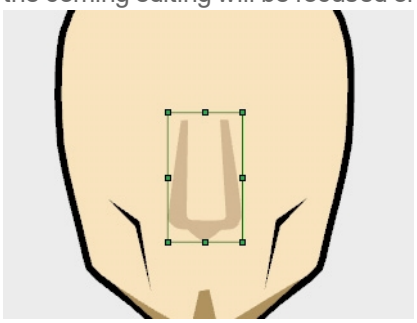
2. Click the **Validate Multi-angle Setup** button.



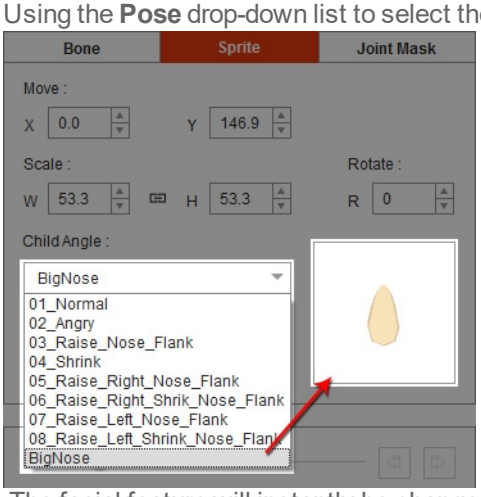
Only the selected facial feature and its parent will be display in the working area.



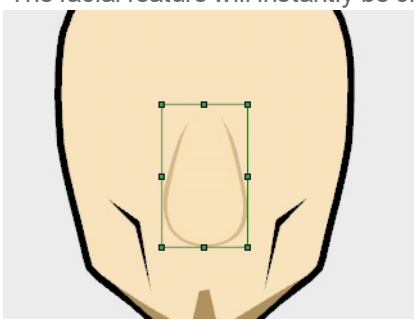
3. Switch to the **Sprite** tab and the bounding box will turn to be **Green**, which means you are in the sprite mode and the coming editing will be focused on the sprite.



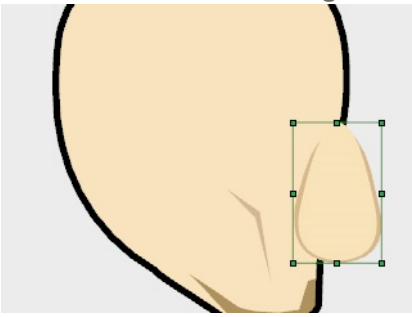
4. Using the **Pose** drop-down list to select the desired pose for editing.



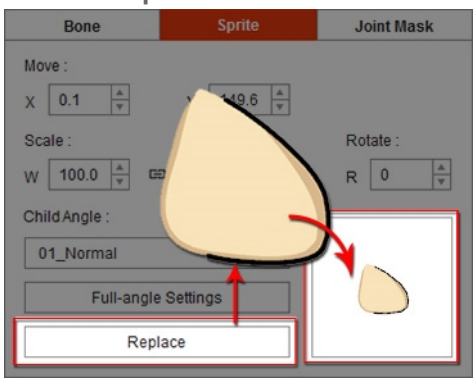
The facial feature will instantly be changed to the other pose.



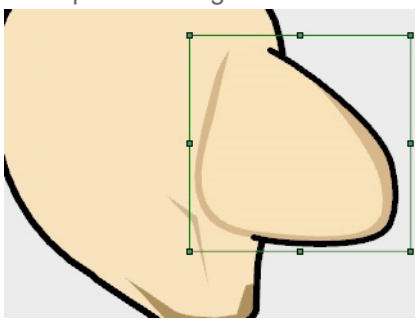
5. Choose from the **Parent Angle** and **Child Angle** drop-down list to a same angle for turning the entire face.



6. Click the **Replace** button and load one of the prepared media to replace the original one.



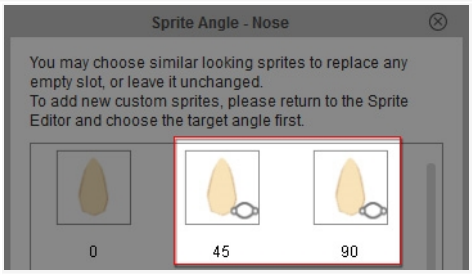
Click the **Replace** button to load one of the prepared media.



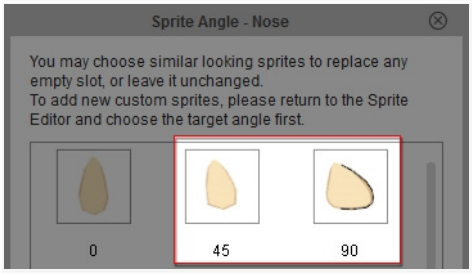
The angle element is then changed to a prepared one.

Note:

You may click the **Full-angle Settings** button to show the media of the pose to check the replacing result.



Before replacement.



After replacement (the angle elements of 45 and 90 degree are replaced)

Modifying Texture of Facial Features

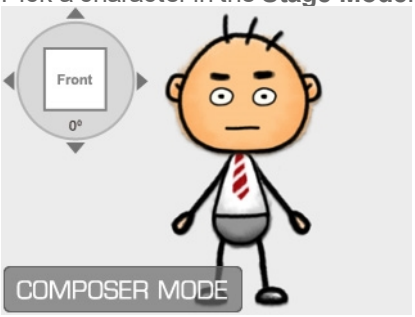
Pro & Pipeline

If you want to change the texture of any element in a facial feature sprite, then you need to enter the **Composer Mode**.

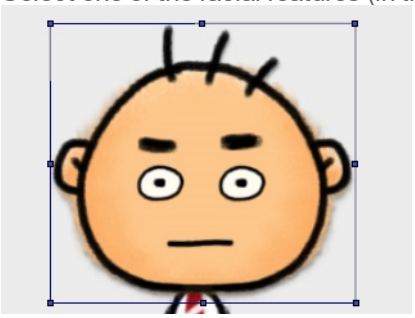
For **Image-based** or **Morph-based** elements, you can use any **External Image Editor** for editing.

If you want to modify the mask of an element, then please refer to the Editing the Background Mask section for more information.

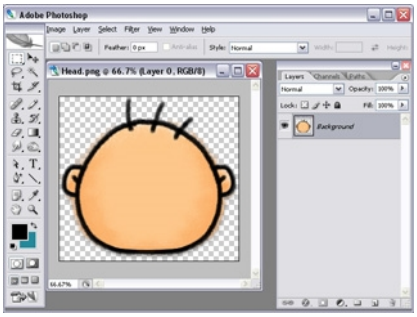
1. Pick a character in the **Stage Mode**. Click the **Composer** button to switch to the composer mode.



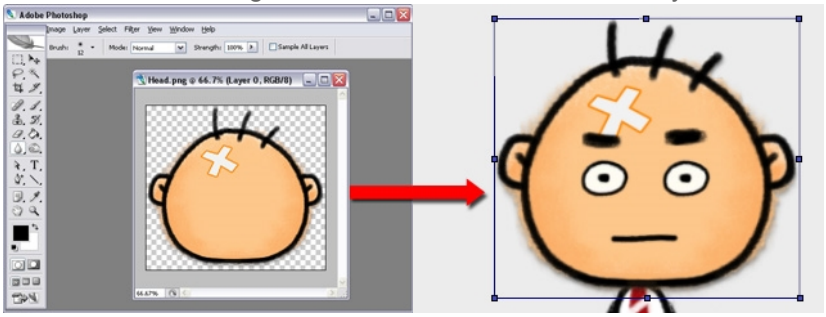
2. Select one of the facial features (in this case, the face) and then click the **Launch External Image Editor** button.



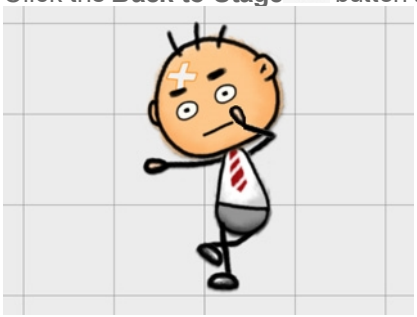
3. **CrazyTalk Animator** will then launch your specified image editor (e.g. Photoshop) with the texture opened in it ready for advanced modifications.



4. Edit and save the image. The data will then be automatically transferred into **CrazyTalk Animator**.



5. Click the **Back to Stage** button to update the character in the **Stage Mode**.

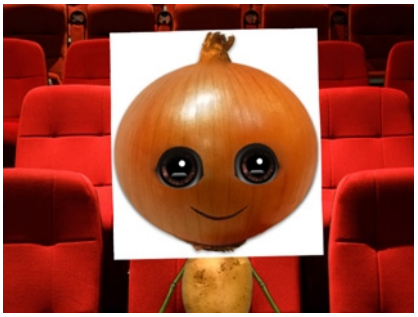


Note:

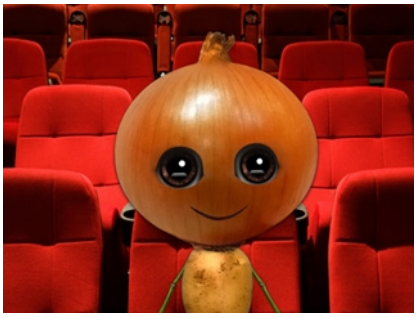
- Only media in image type can be modified with an external image editor. If the medium is a video or vector one, then the **Launch External Image Editor** button will be disabled.

Editing the Face Background Mask

The background mask hides all unnecessary areas of the loaded photo. This helps you keeping only the areas you are interested in, such as the character's head.



Original actor image

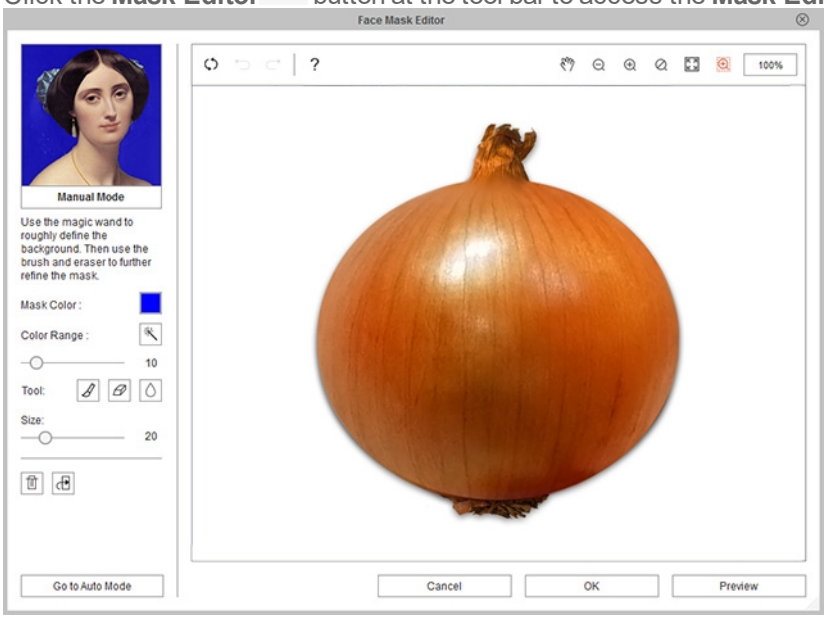


Masked actor image

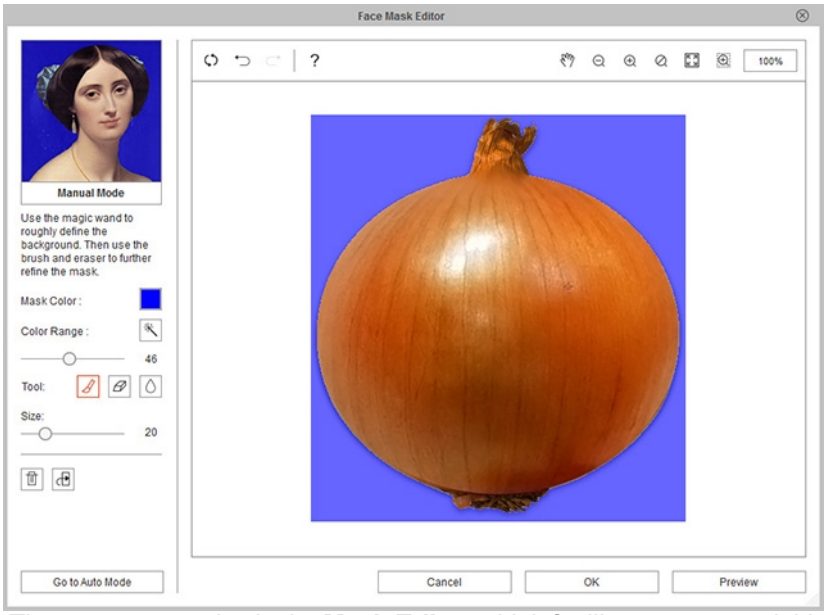
There are two methods to generate a background mask for your image.

Using Mask Editor Panel

1. Make sure you are in the composer mode.
2. Click the **Mask Editor** button at the tool bar to access the **Mask Editor** panel.



3. Using the tools in the panel to paint on the unnecessary parts in the image to add mask on the image.



There are two modes in the **Mask Editor** which facilitates you to quickly add mask to the image:

- Auto Mode.
- Manual Mode.

4. Click the **OK** button and the colored area of the image will be filtered out.

Zoom Tools in Mask Editor

- **Pan Tool**: After you zoom in the image, you may press down this button and drag the image in order to pan to the desired area for modifying.
- **Zoom Out**: Click this button to zoom out the image for observing more of the image.
- **Zoom In**: Click this button to zoom in the image for better observing and modifying the details.

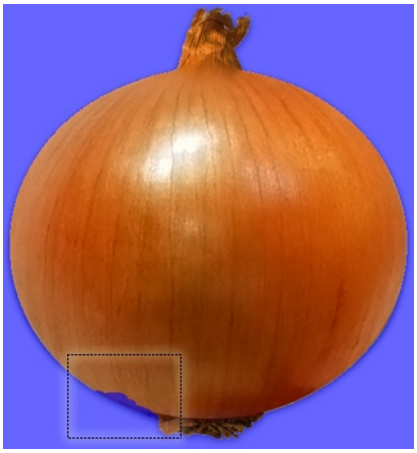


Before zoom in

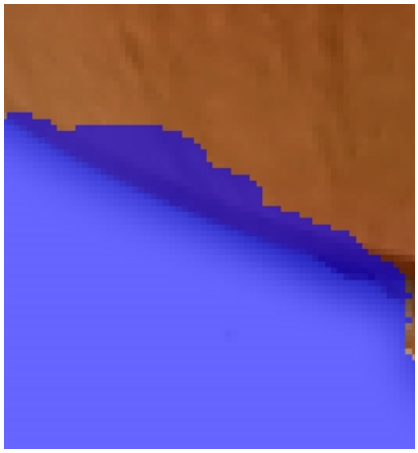


Zoom in for more easily modifying the details

- **Actual Size**: Click this button so the image will be shown in its original resolution.
- **Fit to Window**: Click this button so that the image will be zoom in or zoom out in order to just fit into the preview window.
- **Magnify Tool**: Press down this button and drag a rectangle around the desired area of the image in order to zoom in to the area for better observing and modifying the details.



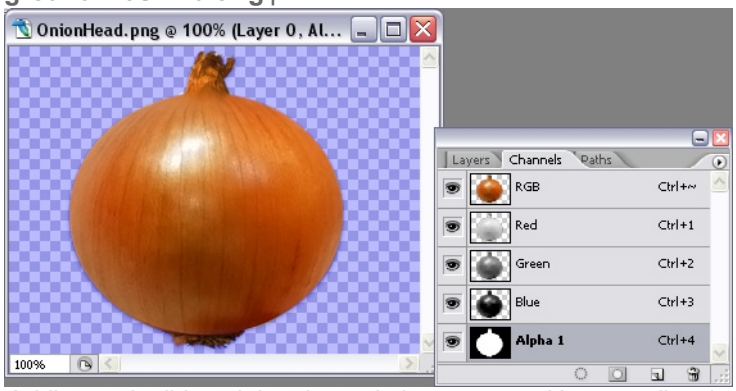
Drag a rectangle to surround the desired area



Zoom in for more easily modifying the details

Loading an Image with a Predefined Alpha Channel

If you wish to perfect your image mask, then you may pre-save your image with a pre-defined alpha channel. This can be done by means of an external image editor. Once you create your mask outside, simply load the image into **CrazyTalk Animator**. The alpha channel information will automatically be applied as the background mask in the **Background Mask Editing** panel.



Adding and editing alpha channels in an external image editor (e.g. Photoshop)

Note:

- The alpha channel information can be in 32-bit BMP, TGA or PNG format.
- If you wish to save the source image as PNG file, then remove the background layer, erase any unnecessary area of the image and save. You do not need to create an alpha channel layer in the **Channels** panel.

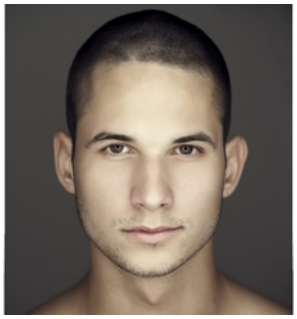


- Please also refer to the sections below for more information:
  - Editing the Body Background Mask
  - Editing the Prop Background Mask

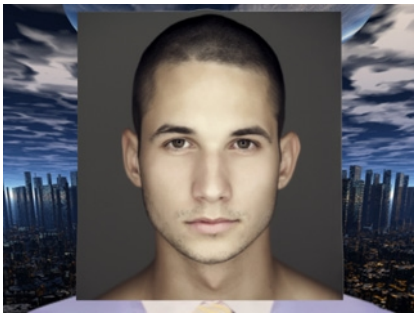
Using Auto Mode for Masking

When your source image contains a simple background area with similar color or when the contours of the character are not complicated, you can use the **Auto Mode** to quickly define the mask for the background area. This mode is suitable for characters with sharp and clear contour edges because **CrazyTalk Animator** can quickly auto-masks areas according to the edges.

Before you add mask, you need to create an head from an image. After the head is generated, it is by default without a mask. Therefore, even if you replace the background, the original background of the image still conceals the custom background of the project.



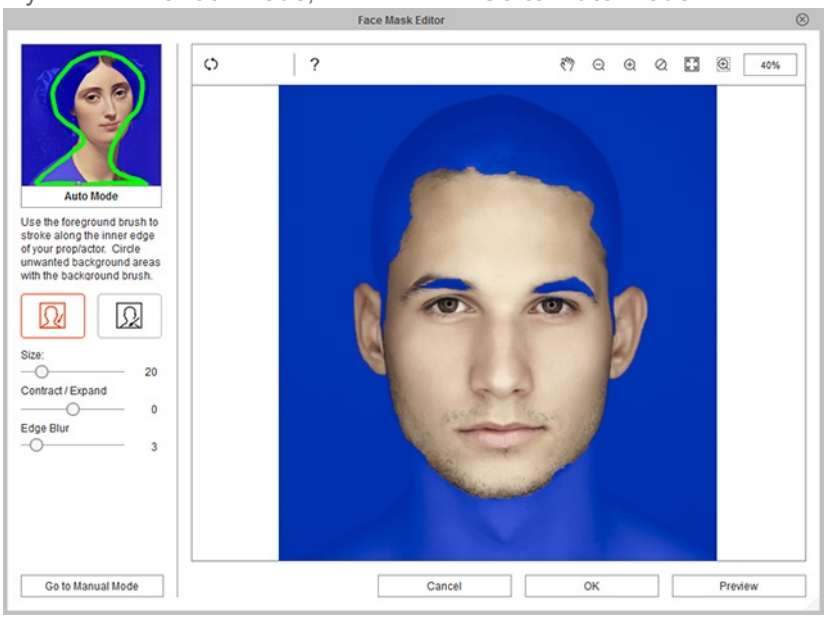
An unmasked head



The background of the original image conceals the custom background.

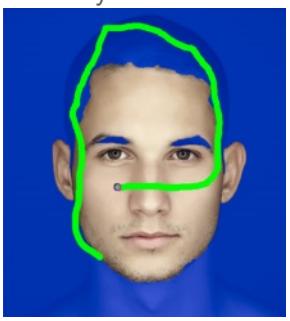
Using Auto Mode of Mask Editor

1. Click the **Mask Editor** button on the tool bar to access the **Mask Editor** panel.
2. If you are in **Manual Mode**, then click the **Go to Auto Mode** button to switch to **Auto Mode**.

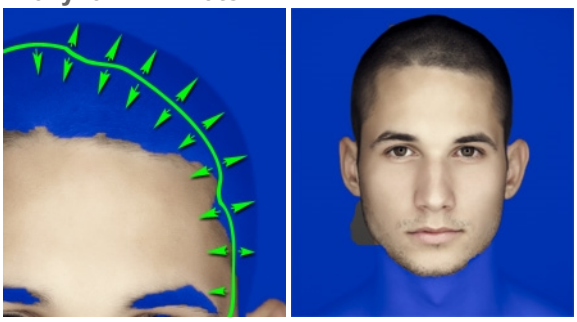


- The mask added in **Manual Mode** will be abandoned after you switch to **Auto Mode**.
- A new mask will be automatically be applied to the image.
- Modify the mask with the following steps.

3. Press down the **Foreground Brush** button and roughly draw contours to frame around the character (do not worry if the contour is enclosed or not).



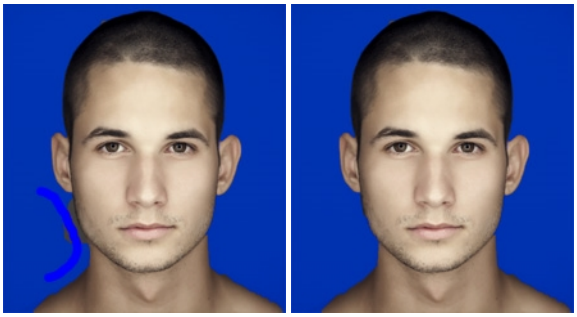
4. **CrazyTalk Animator** calculates the estimated character edge according to the contours you draw.



5. Even if you draw strokes, **CrazyTalk Animator** can still find the edge of the head.



6. If the edge goes out of the character, then press down the **Background Brush** button.
7. Draw strokes on the desired area to convert the area with similar color to background.



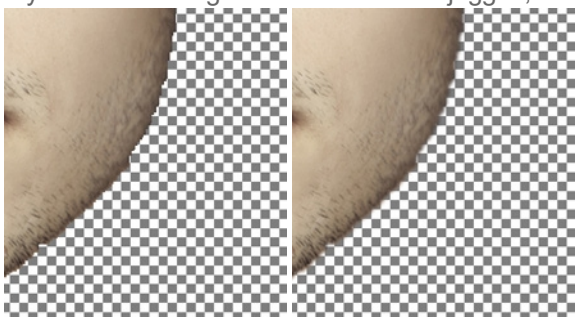
8. Remove the body and the neck in the same manner.



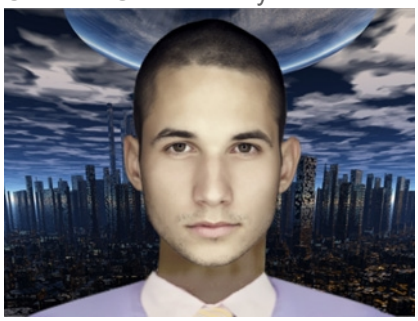
9. Click the **Preview** Preview button to check out the mask result.



10. If you think the edge of the mask is too jagged, then increase the **Edge Blur** value.



11. Click the **OK** button if you are satisfied with the mask result.



Note:

If you want to modify the details of the mask, then click the **Go to Manual Mode** Go to Manual Mode button to enter the mode with current mask result.

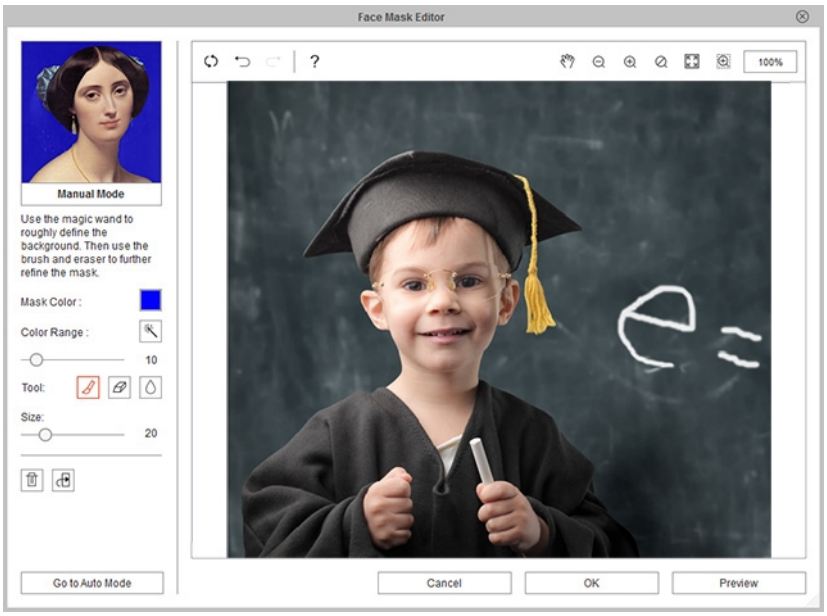
Manual Mode for Masking

When your source image is complicated and the contour edges of the character can not be clearly determined in **Auto Mode**, you can use **Manual Mode** to modify the details of the mask by carefully painting the mask with the tools in this mode.

Please note that you can always start with rough masks generated in **Auto Mode** and then modify the rough mask further in **Manual Mode**.

Using Quick Select Tools

1. Click the **Mask Editor** button at the tool bar to access the **Mask Editor** panel.
2. If you are in **Auto Mode**, then click the **Go to Manual Mode** button to switch to **Manual Mode**.
   - The mask added in **Auto Mode** will be brought to **Manual Mode**.
   - Optionally click the **Delete** button to remove the entire mask.



3. Press down the **Color Range** button and then click on the image to fill similarly colored areas with a mask.



   - Areas with similar colors will also be masked.
   - The similarity is determined by the **Tolerance** value.

4. Hold the **Shift** key (for **Windows**) or **Command** key (⌘ for **Mac**) and click on another area of the image to include more colors.



5. Hold the **Alt** key and pick an area of the image to exclude that color and other similar shades.



6. Click the **Preview** 

button to check out the mask result.



7. You are able to use the **Brush Tools** afterwards for further modifications to the mask.
8. Click the **OK** button if you are satisfied with the mask result.

Note:

- If the background is relatively more simple than the character, then directly pick the background colors with the **Color Range** tool; otherwise, pick the colors on the character and click the **Invert** button.

Using Brush Tools

To modify the mask details, you can use the **Brush Tools**.

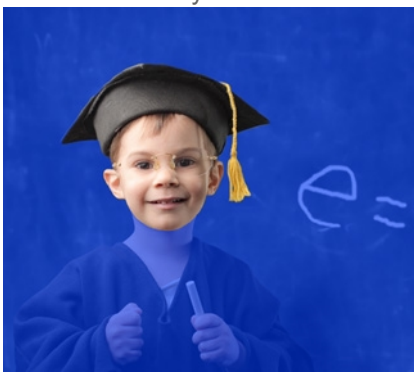
1. Press down the **Brush** button in the **Brush Tools** section.
2. Draw strokes on the image to determine the masked area.




3. Press down the **Eraser** button and paint on the image to correct the excess areas of the mask.



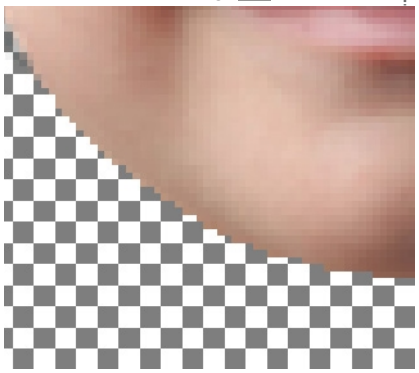

4. Remove the body and the neck in the same manner.



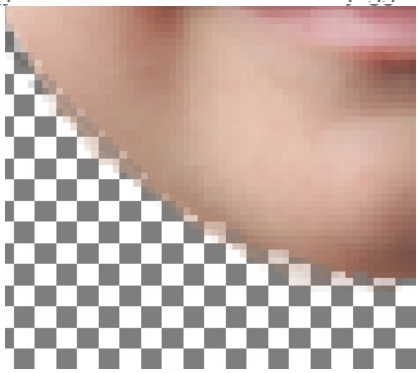
5. Click the **Preview** button to check out the mask result.



6. Press down the **Blur** button and paint on the edges of the mask to smooth the jagged ones.



Jagged edges



Use the blur tool to remove the jaggy edges

7. Click the **OK** button if you are satisfied with the mask result.

Note:

If you click the **Go to Auto Mode** Go to Auto Mode, the mask you have created in the **Manual Mode** will be discarded.

Modification with Render Style

CrazyTalk Animator provides **Render Style** feature for changing the color of your character, either vector-based or image based. By setting different render styles, the character can be matching with or standing out from various scenarios .



Please refer to the sections below for more information:

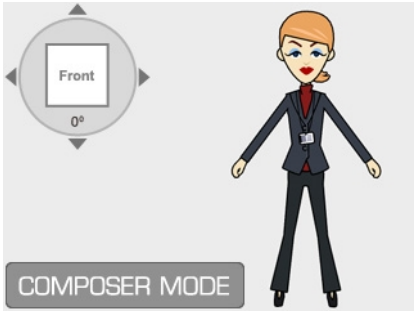
- Changing Character Render Style - Basic: For switching between different template of **Render Styles**.
- Changing Character Render Style - Advanced: For modifying the render styles of individual body parts and facial features to the templates.
- Grouping Sprites for Render Style: For creating and designing contents that are compatible with the render style feature.

Changing Character Render Style - Basic

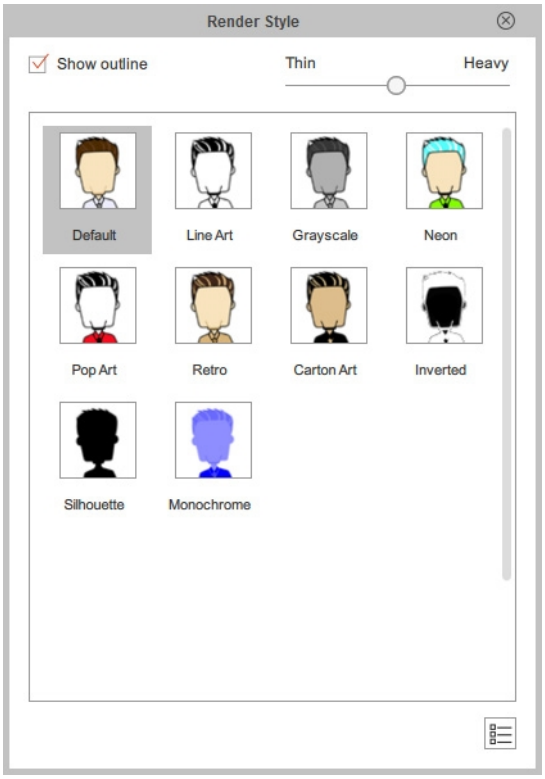
Pro & Pipeline

For each **G2** default character, its sprites are well-grouped and is embedded with pre-defined render styles. You may simply select the ideal style and the colors of the sprites simultaneously change.

1. Apply a G2 character and switch to the composer mode.



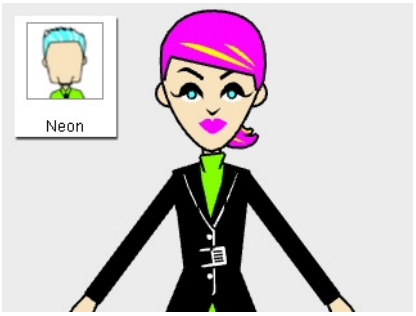
2. Click the **Render Style** button to open the panel.



3. Click on either of the template to change the render style of the character.



None: This template shows the initial color of the character's sprites.



Avant-Garde: Innovative and experimental fashion style for the character.

4. Drag the **Weight** slider to determine the level of the render style effect on the character.



Weight = 100

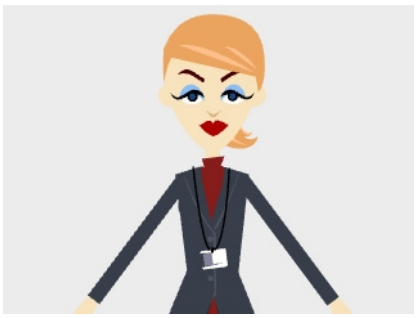


Weight = 30
(the character's color will be closer to the initial color, which is blue)

5. You can also activate or deactivate the **Show Line** box to show/hide the contour line of the character.



Show Line = On



Show Line = Off

Note:

If you want to create custom groups of the character's sprites, then refer to the section below for more information (please note that the feature only supported by **Pro** or **Pipeline** version):

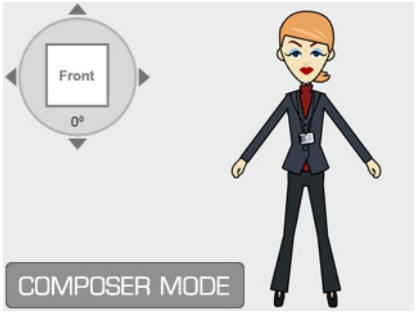
- Changing Character Render Style - Advanced

Changing Character Render Style - Advanced

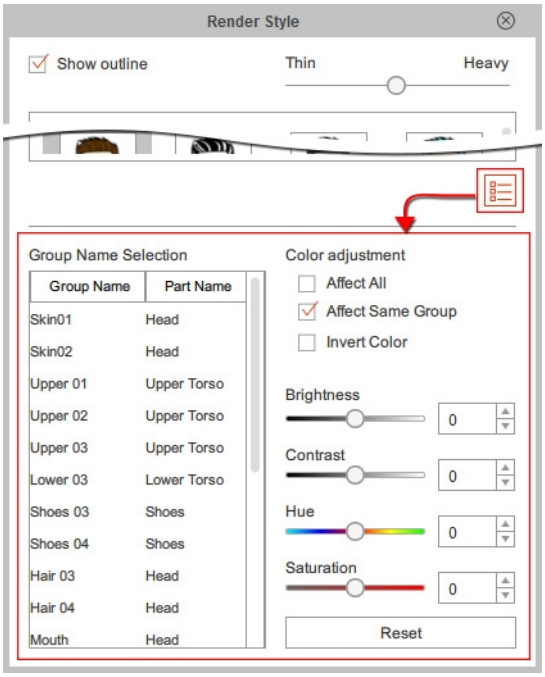
Pro & Pipeline

In addition to changing the character's render style by embedded templates, you are able to manually set the render style by pre-defined sprite groups if you are using the **CrazyTalk Animator Pro** or **Pipeline** version.

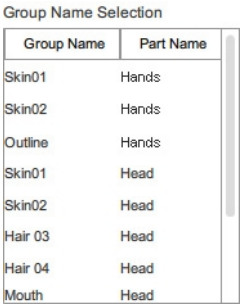
1. Apply a G2 character and switch to the composer mode.



2. Click the **Render Style** button to open the panel (you may optionally follow the steps in the Changing Character Render Style - Basic section to set the character in different render style).
3. Click on the **Advance Settings** button at the bottom right of the panel to show the advanced settings.

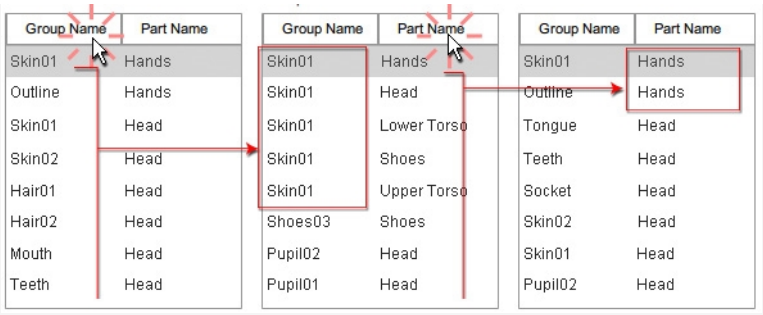


4. Select an item in the **Group Name Selection** pane.



Note:

- You may click on the **Group Name** or **Part Name** captions to re-order the list so that the items with same name will be listed together.

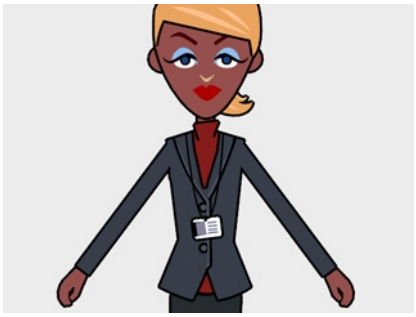


- You may also grouping the sprites for setting render style together. Please refer to the Grouping Sprites for Render Style - Body Parts and Grouping Sprites for Render Style - Facial Features sections for more information.

5. Drag the **Brightness**, **Contrast**, **Hue** and **Saturation** sliders to adjust the body parts with same group name.



The initial look of the skin color.



The color of the body parts with same group name are simultaneously adjusted.

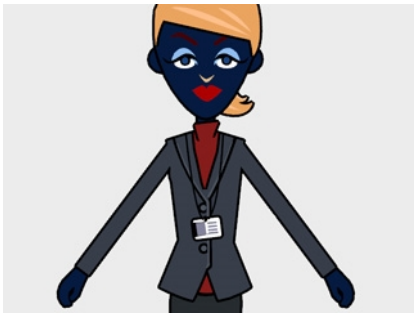
Note:

Click the Reset **Reset** button to reset the four sliders to the initial settings of the currently selected template.

6. If you activate the **Invert Color** box, then the items in the same group will be changed to the complementary color.



The initial look of the skin color.



The color is changed to its complementary color.

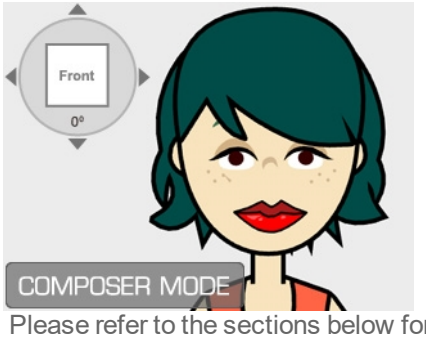
Grouping Sprites for Render Style

Pipeline Only

The **Render Style** feature assists you in changing the color of grouped sprites all at once. You are able to group custom poses and angles in sprites for easily adjusting their colors via the **Render Style** tool.

*Please note that this feature is for the **Pipeline** version only.

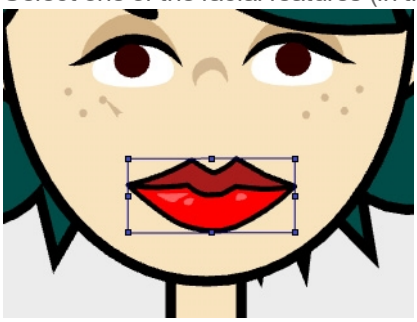
1. Create a custom character and facial features, switch to the **Composer Mode** by clicking the **Composer** button.



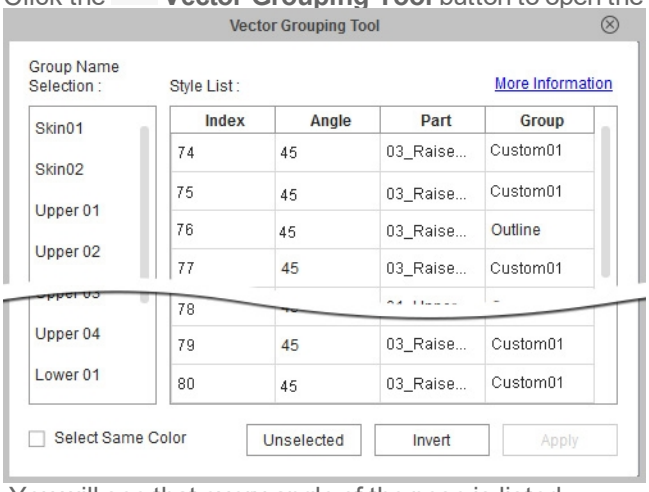
Please refer to the sections below for more information about creating G1 and G2 characters:

- Creating Facial Sprites with Frontal Angle
- Creating Facial Sprites with Multiple Angles

2. Select one of the facial features (in this case, the lips).



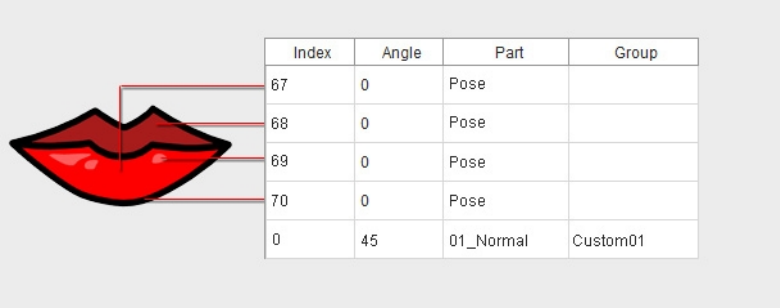
3. Click the **Vector Grouping Tool** button to open the panel.



You will see that every angle of the pose is listed.

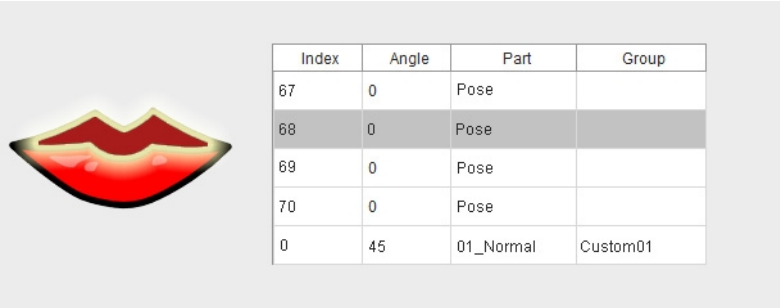


The right pane of the editor lists the components that build up the angle media in the view port.



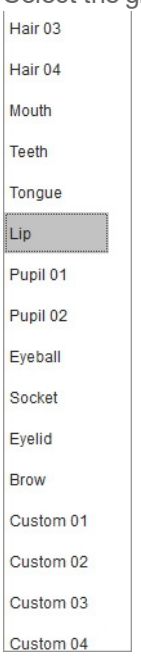
Index	Angle	Part	Group
67	0	Pose	
68	0	Pose	
69	0	Pose	
70	0	Pose	
0	45	01_Normal	Custom01

4. Click to select one of the component rows. The selected area in the view port will be flashing.

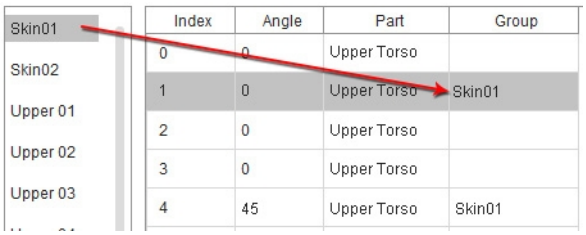


Index	Angle	Part	Group
67	0	Pose	
68	0	Pose	
69	0	Pose	
70	0	Pose	
0	45	01_Normal	Custom01

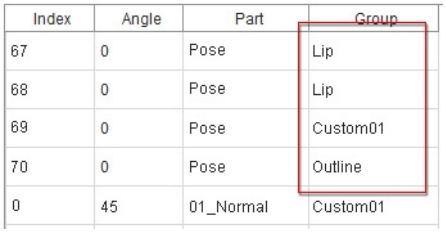
5. Select the group name from the left pane of the editor.



6. Click the **Apply** button at the bottom right of the editor to assign the group name to the component.



7. Repeat the same steps to assign group names to every component that is without a group name.



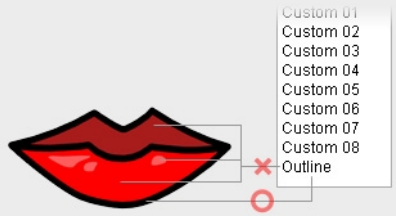
Note:

Please refer to the Quickly Picking and Mapping Identical Color Shapes (version 2.1 or above) section for more information.

8. Select another facial feature and repeat step 2 to 7 until every sprite and its angles are grouped.

Note:

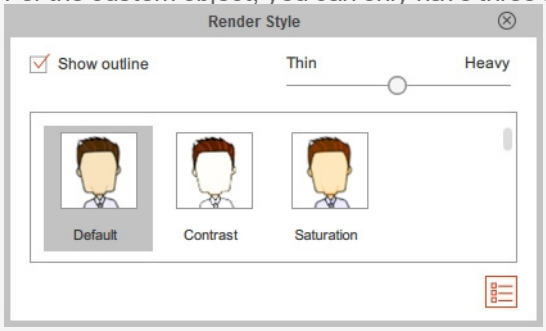
Please note that since the **SWF** from **Flash** can be divided into two main components, **Shape** and **Line**, when you are doing the vector grouping procedure, **DO NOT** assign the "shapes" into the **Outline** group, because although the color of the shapes are able to be adjusted with the real lines, they can not be turned off by deactivating the **Show Outline**. Make sure you only assign "lines" to **Outline** group.



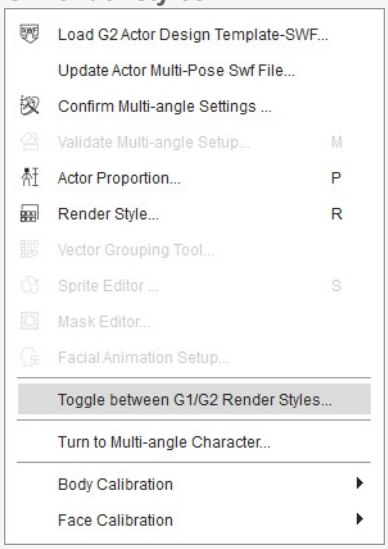
9. Close the editor and open the **Render Style** panel by clicking the **Render Style** button.

Note:

- For the custom object, you can only have three templates after the **Render Style** button is clicked.



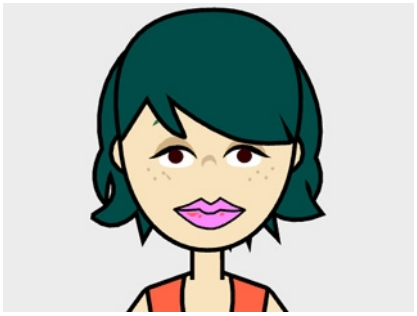
- If you want to have ten default **Render Style** templates, then execute the **Modify** >> **Toggle between G1 G2 render styles** command for switching to the list with these templates.



- Please note that you need to manually adjust the settings of the ten templates, including the **Default** one.

10. The grouped sprites thus can be adjusted together.


The outline is turned off


The lip tone is adjusted.

Note:

Please refer to the sections below for more information:

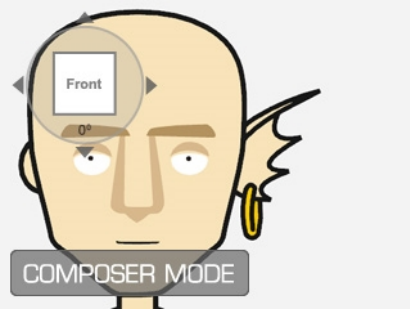
- Changing Character Render Style - Basic
- Changing Character Render Style - Advanced

Quickly Picking and Mapping Identical Color Shapes

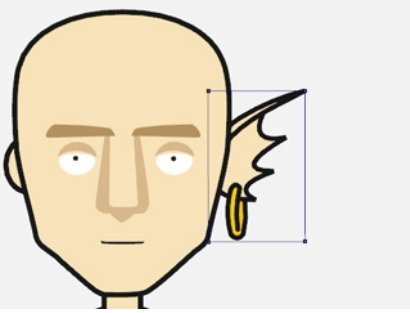
Pipeline Only

When you are using the **Vector Grouping Tool** to map the color shapes to certain group names as described in the Grouping Sprites for Render Style section, it often takes a long time to do the mapping one by one. By using the **Select Same Color** option provided in **CrazyTalk Animator**, you may quickly pick the same color shapes in different angles and simultaneously map them into specific groups.

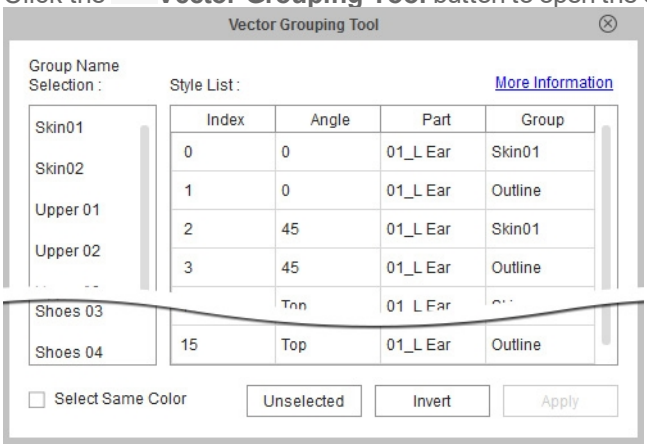
1. Create a character with customized facial features in the **Composer** mode.



2. Select one of the facial features (in this case, the left ear).



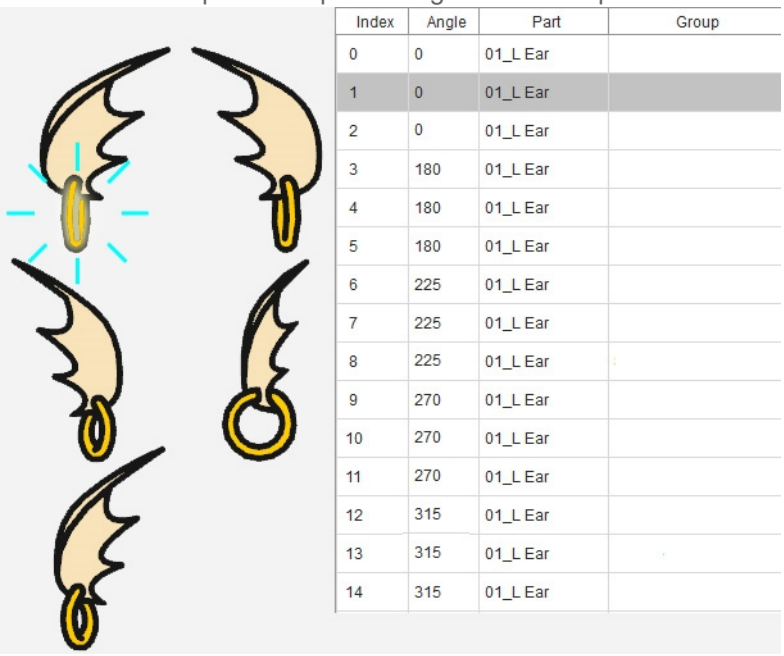
3. Click the **Vector Grouping Tool** button to open the editor.



4. Each angle of the selected facial feature will be shown in the working area.

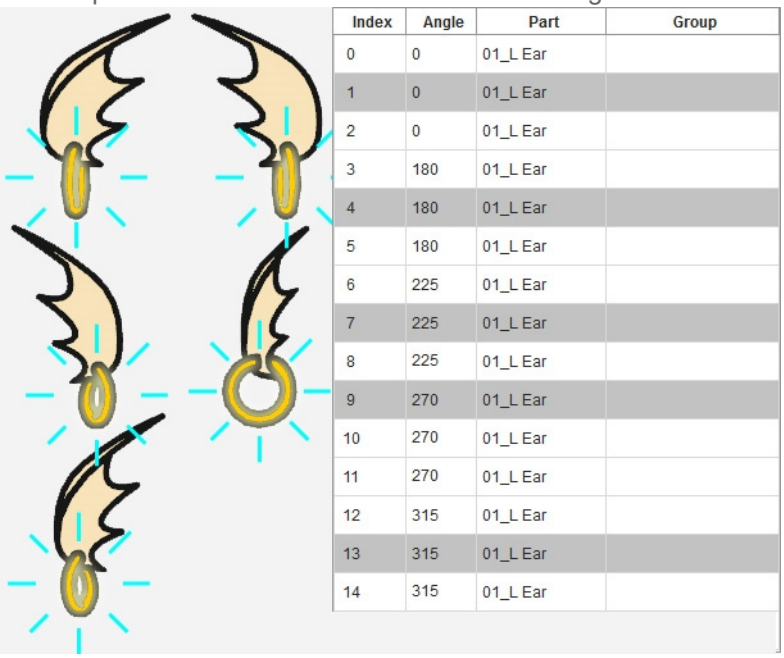


5. Select one of the shapes in the **Style List**.
   The selected shape of the specific angle in the view port will be flashing.



Index	Angle	Part	Group
0	0	01_L Ear	
1	0	01_L Ear	
2	0	01_L Ear	
3	180	01_L Ear	
4	180	01_L Ear	
5	180	01_L Ear	
6	225	01_L Ear	
7	225	01_L Ear	
8	225	01_L Ear	
9	270	01_L Ear	
10	270	01_L Ear	
11	270	01_L Ear	
12	315	01_L Ear	
13	315	01_L Ear	
14	315	01_L Ear	

6. Activate the **Select Same Color** box at the bottom left of the **Vector Grouping Tool** editor.
7. The shapes **OF THE SAME COLOR** in different angles will start flashing as well.

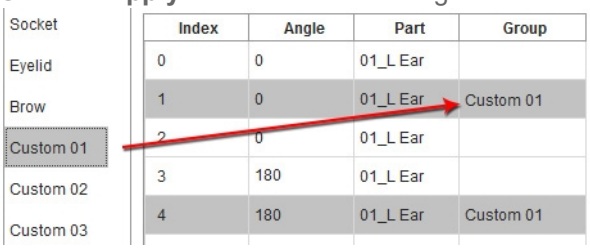


Index	Angle	Part	Group
0	0	01_L Ear	
1	0	01_L Ear	
2	0	01_L Ear	
3	180	01_L Ear	
4	180	01_L Ear	
5	180	01_L Ear	
6	225	01_L Ear	
7	225	01_L Ear	
8	225	01_L Ear	
9	270	01_L Ear	
10	270	01_L Ear	
11	270	01_L Ear	
12	315	01_L Ear	
13	315	01_L Ear	
14	315	01_L Ear	

8. Select the group name from the left pane of the editor.



9. Click the **Apply** button at the bottom right of the editor to assign the group name to these shapes.

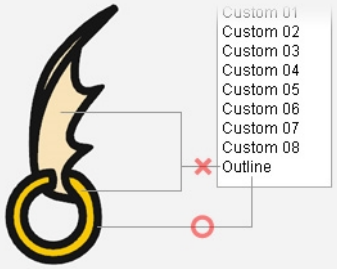


10. Repeat the same steps to assign group names to every shape that is without a group name.

Index	Angle	Part	Group
0	0	01_L Ear	Skin01
1	0	01_L Ear	Custom 01
2	0	01_L Ear	Outline
3	180	01_L Ear	Skin01
4	180	01_L Ear	Custom 01
5	180	01_L Ear	Outline
6	225	01_L Ear	Skin01
7	225	01_L Ear	Custom 01
8	225	01_L Ear	Outline
9	270	01_L Ear	Custom 01
10	270	01_L Ear	Skin01
11	270	01_L Ear	Outline
12	315	01_L Ear	Skin01
13	315	01_L Ear	Custom 01
14	315	01_L Ear	Outline

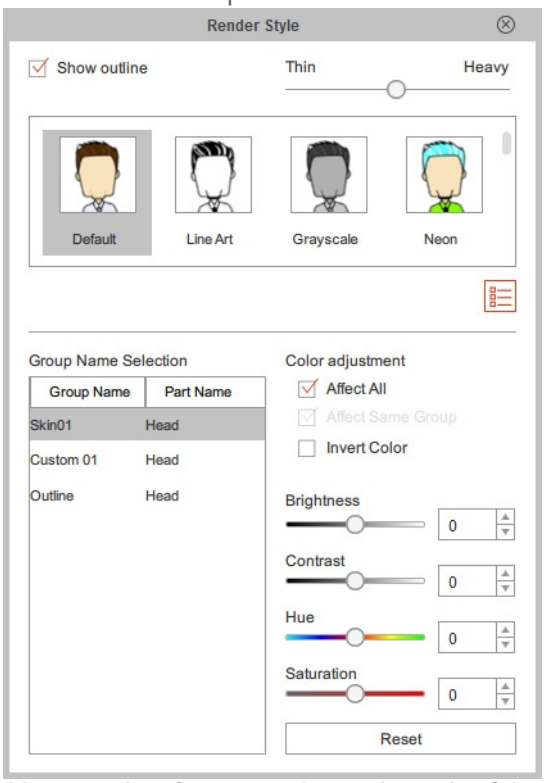
Note:

Please note that since the **SWF** from **Flash** can be divided into two main components, **Shape** and **Line**, when you are doing the vector grouping procedure, **DO NOT** assign the "shapes" into the **Outline** group, because although the colors of the shapes are able to be adjusted with the real lines, they can not be turned off by deactivating the **Show Outline**. Make sure you only assign "lines" to the **Outline** group.



11. Close the editor and open the **Render Style** panel by clicking the **Render Style** button.

12. The same color shapes are now included into the group names in the **Group Name Selection** list.



You may then free to set the render style of the color shapes within the same groups.

Examining Character Animation Using Calibration Templates

After the compositions and the modifications of the character's face are done, you may use the built-in expression animations for further calibration by **Calibration** feature. With this you may view all character artifacts, such as the offset issues of facial features. You may then correct any imperfections.

1. Create a character with facial features.

   Note:

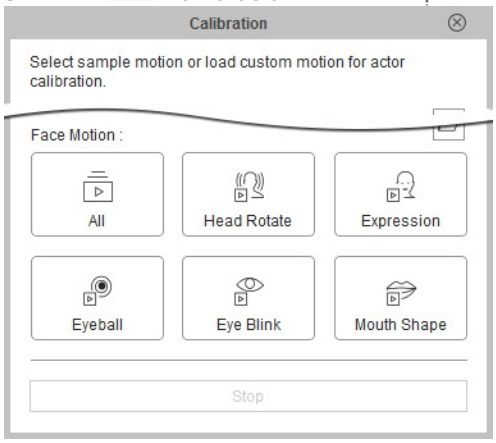
   Follow the sections below to create a custom character:

   - Creating Facial Sprites with Frontal Angle
   - Creating Facial Sprites with Multiple Angles

2. Switch to the **Composer Mode** by clicking the **Composer** button.



3. Click the **Calibration** button to open the panel.



Calibration templates for facial features.

4. Click on the templates from the **Face Motion** pane to preview the expressions of the character. Fix visual artifacts if needed.



Facial Expression Template: Smile



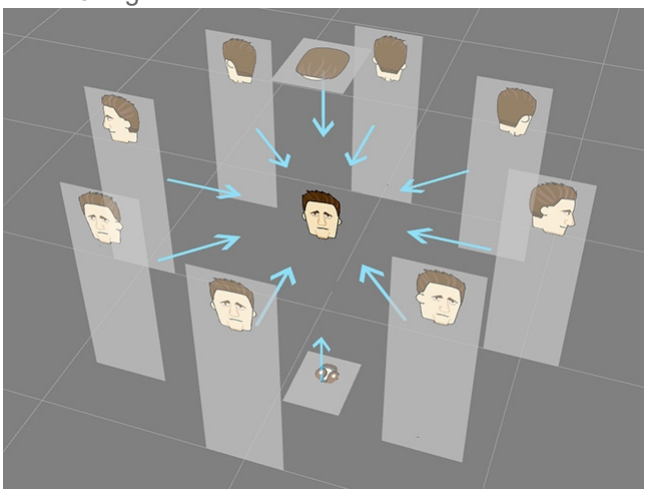
Eye Blink Template: Eyes closing

G2+ Facial System (New for v3)

In **CrazyTalk Animator v3**, **G2** (generation 2) faces are divided into **G2** and **G2+** facial systems.

The same characteristics of **G2** and **G2+** faces are:

- Sprite-based.
- With 10 angles.

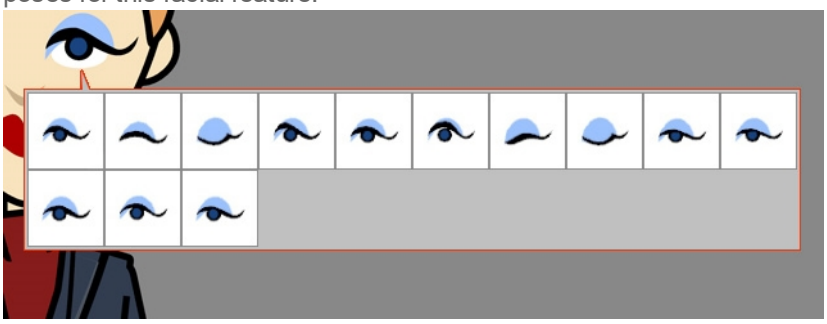


- Puppeteer-able.
- Articulate-able.

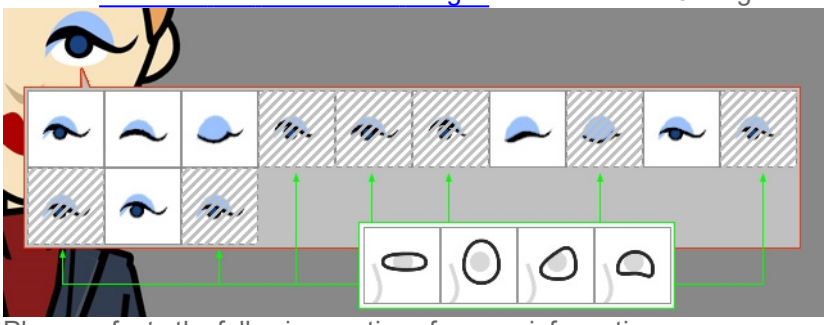
The differences between them are the number of elements for each sprite of the facial features and the facial expression animations they perform:

Elements Numbers

- **G2**: The elements for each pose (expression) sprite of a facial feature are all loaded images. Therefore, you need to prepare the same amount of images in different perspectives (mostly, 0, 45, 90, 270 and 315 degrees) for the facial feature.
  In the following example, you need to prepare 13 images to replace the original ones in order to create complete poses for this facial feature.



- **G2+**: However, for the **G2+** facial system, some of the poses can be replaced by deforming and transforming a base one. Therefore, you can save a lot of time by not preparing so many images, not to mention the poses in each directions. In the following example, you only need to prepare 6 images. The missing images will be filled up with the deformed and transformed images based on these 6 images.

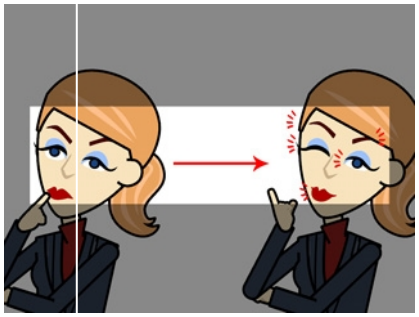


Please refer to the following sections for more information:

- Converting G2 Face to G2+ Face
- Introduction of Facial Animation Setup Panel
- Customizing Expressions with Deform / Transform Features

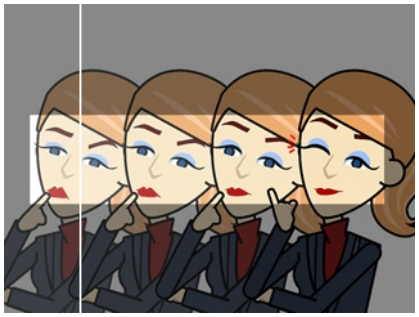
Facial Expression Animations

- **G2**: Because the expressions are made of individual images, when the character perform the facial expressions, it is actually performing the sprite switch animation, which causes the sudden change between two expressions.



The facial expressions are constructed by sprite-switch animations of the facial features.

- **G2+**: Since almost half of the poses in a sprite are based on a existing deformed or transformed image element, and the **G2+** facial system, some of the poses can be replaced by deforming and transforming a base one. Therefore, the facial expression animations can be much smoother due to the auto-inserted transitions between two expressions.



The facial expressions are constructed by the deforming and transforming of the facial features.

Converting G2 Face to G2+ Face (New for v3)

Pro & Pipeline

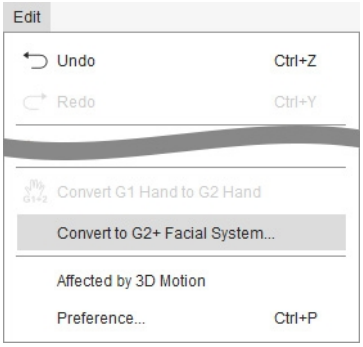
In order to decrease the file size of a **G2** character, you can convert the **G2** face to **G2+** face to remove some unnecessary images from the sprites of the facial features and have a better and smoother transition between two expressions.

Converting G2 Face to G2+ Face

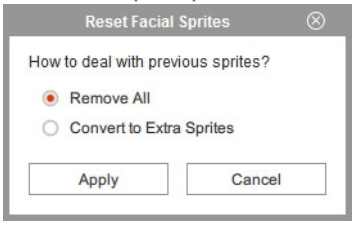
1. Apply a **G2** character from the **Content Manager**. Make sure it is selected.



2. Switch to the **Composer Mode**.
3. Execute the command **Edit** >> **Convert to G2+ Facial System...**.



4. You will be prompted to deal with the redundant facial feature sprites. Choose one of the radio buttons.

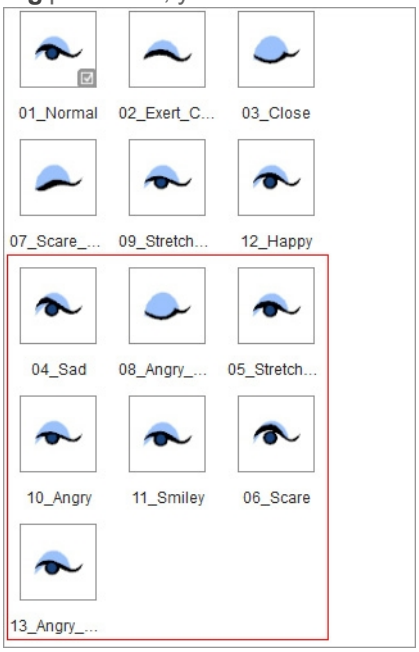


- **Remove All**: The redundant sprites that are not used for the **G2+ facial system** will be removed and will be replaced by deform and transform methods in order to keep the minimum file size of the character.



- **Convert to Extra Sprites**: The redundant sprites (highlighted in the illustration below) that will not be used for the **G2+ facial system** are kept. Although they will not be utilized for the **puppeteering** and **key-edit-**

ing procedure, you can use them for sprite-switch animation.



5. Click the **Apply** button and the **G2 Face** will be converted to **G2+ Face**.

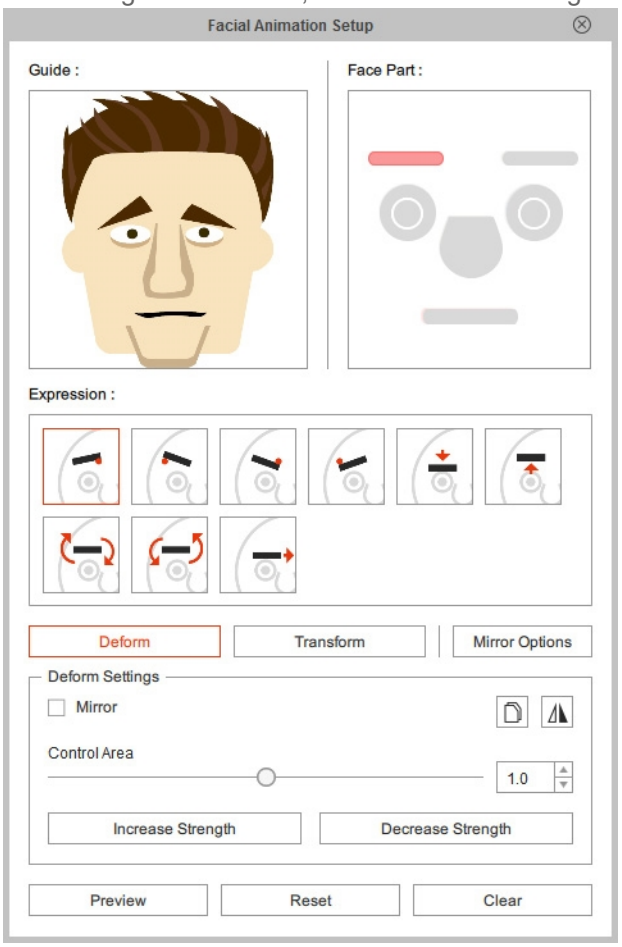
Note:

Manually determining the strength for each expression of the facial features is allowed by using the **Facial Animation Setup** panel.

Introduction of Facial Animation Setup Panel (New for v3)

Pro & Pipeline

In **CrazyTalk Animator**, you can always replace a character with another one by drag and dropping the desired one onto the existing one. However, now there are some regulations for replacing characters.



	Name	Description
1	**Indication**	This animation indicates the animation result of the selected expression of the facial feature.
2	**Face Part**	You can select adjustable facial features from this pane. Including the **eyebrows**, **eyes**, **irises**, **nose** and **mouth**.
3	**Expression**	Select one of the expressions within the list for further adjustments.
4	**Adjusting Mode**	You can switch to **Deform** or **Transform** mode by pressing down either one of these buttons.
5	**Mirror Options**	Click this button to determine the mirror method for the currently selected facial feature or expressions.
6	**Deform Settings**	Use the deform settings to determine the size and influencing weight of the Deform box for the currently selected expression.
7	**Preview**	Click this button to preview the deforming result of the selected expression.
8	**Reset**	Click this button to ignore your adjustments to the selected expression and reset to the default one.
9	**Clear**	Click this button to return the selected expression to a neutral one, for no expression at all.

Customizing Expressions with Deform / Transform Features (New for v3)

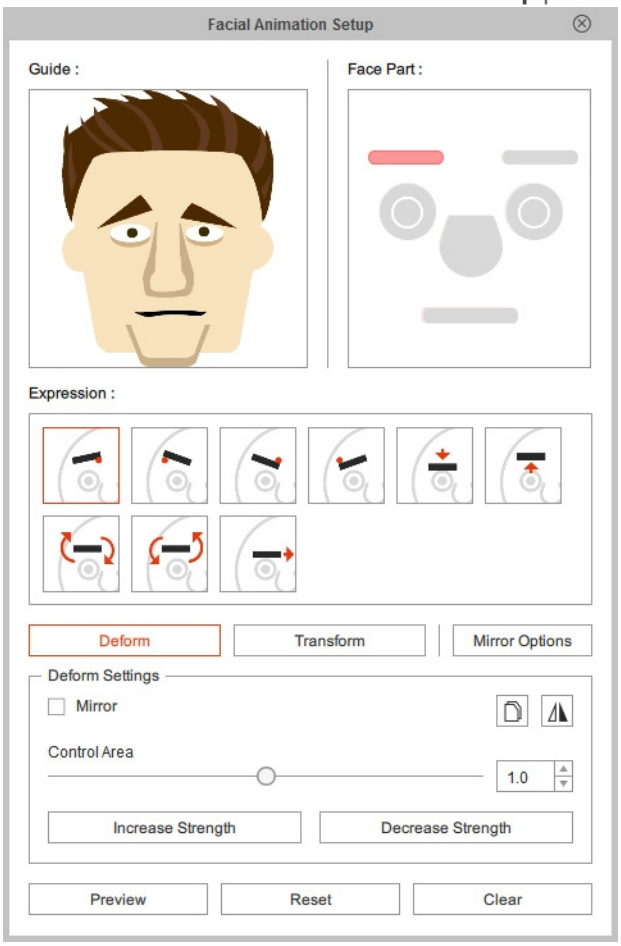
Pro & Pipeline

For **CrazyTalk Animator G2+** face, you can create different pose instances from a sprite element with **Deform** and / or **Transform** features. Thus you do not need to prepare numerous images for each pose but to replace the poses with these two methods provided in the Facial Animation Setup panel.

Before you start this section, you need to first convert a **G2** head to a **G2+** head , and enter the **Composer** mode. After that, click the **Facial Animation Setup** button on the Toolbar.



You will then see the **Facial Animation Setup** panel displays on the screen.



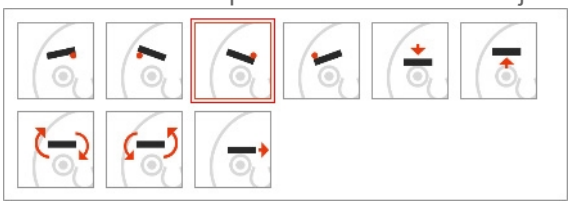
Using Deform Feature

The **Deform** feature can be used to dramatize the shapes of the expressions.

1. Select the facial feature from the **Face Part** pane.



2. Select one of the expressions in the list for adjustments.

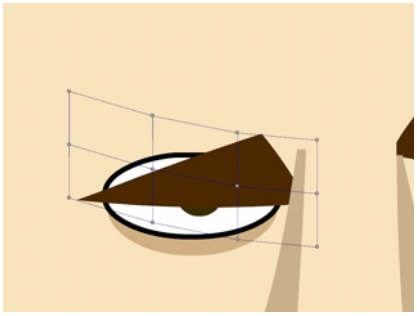


Note:

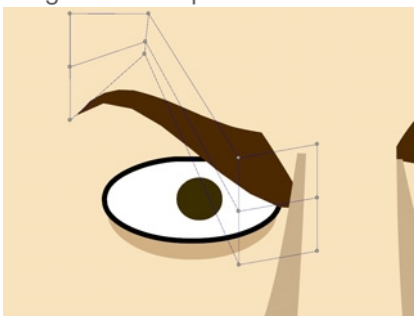
After an expression is picked, the animation in the **Guide** pane of this panel will start to play back to indicate the animation of the expression. You can then adjust the expression accordingly.



3. Press down the **Deform** button to enter the Deforming mode.
4. You will see that the facial feature is framed up by a deform box with 12 control points.



5. Drag the control points to deform the facial feature in order to match the description of the thumbnail in Step 2.

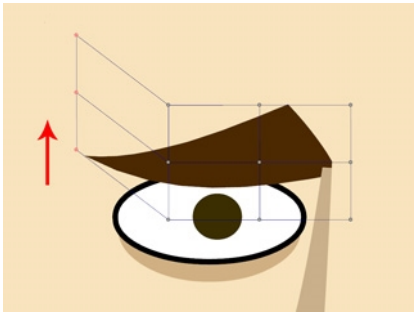


6. Repeat the same steps for other expressions if you wish to make them more exaggerated.

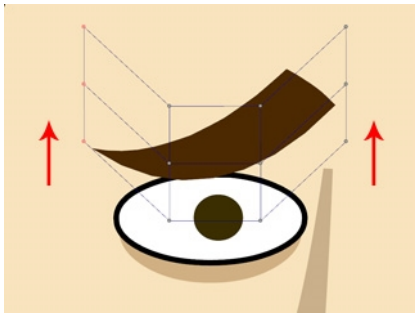
Adjusting Deform Box

There are some settings in the **Deform Settings** group affecting the Deform box. By adjusting the Deform box, the facial feature will be simultaneously influenced.

- Activate the **Mirror** box in order to move the opposite points of a deform box at the same time.

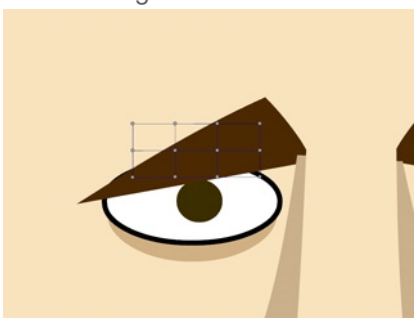


The **Mirror** box is deactivated

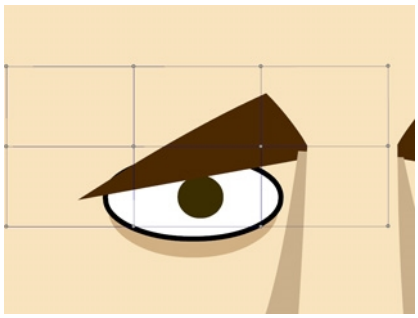


The **Mirror** box is activated

- You can drag the **Control Area** slider in order to enlarge or shrink the Deform box.

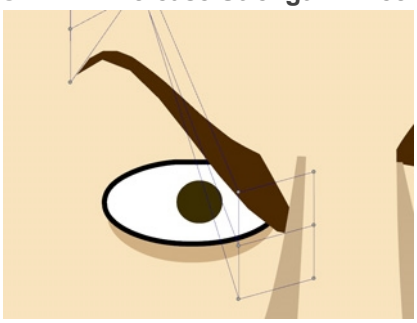


Control Area: 0.5

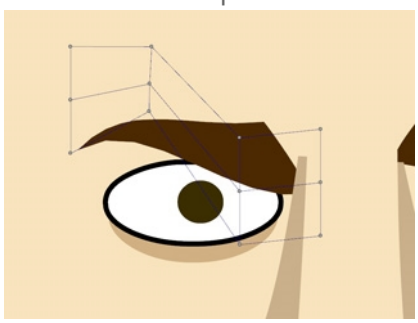


Control Area: 1.5

- Click the **Increase Strength** or **Decrease Strength** button to make the expression more or less exaggerated.

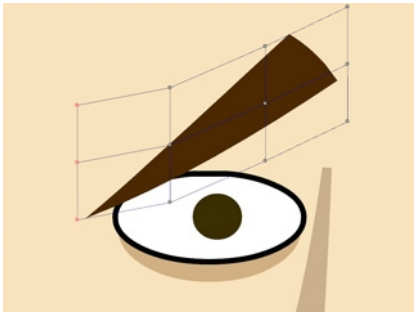


The **Increase Strength** button is clicked

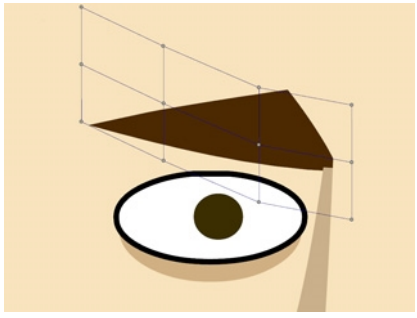


The **Decrease Strength** button is clicked

- Click the **Flip** button to horizontally flip the Deform box.



Before flipping

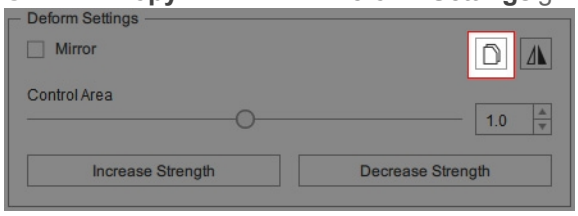


After flipping

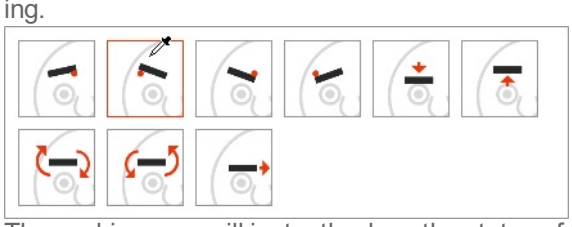
Copying and Pasting Deform Box Status

Because some of the expression thumbnails are similar, if you wish to make them look identical, then you can use this feature to copy the status of the Deform box to another expression.

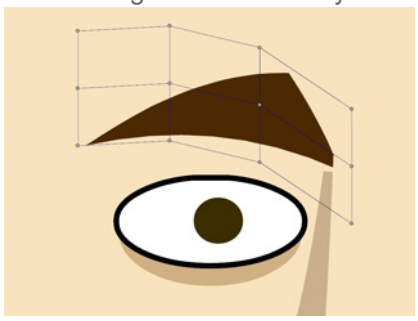
1. Click the **Copy** button in the **Deform Settings** group.



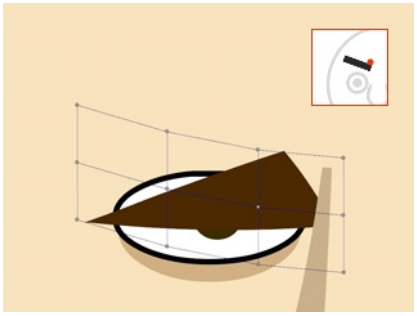
2. Hover the cursor and click on an expression thumbnail in which the Deform box is used as a source for copying.



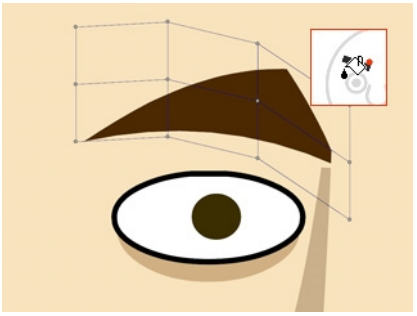
The working area will instantly show the status of the Deform box for the expression of this thumbnail.



3. Move the cursor to the target expression thumbnail and click on it to paste the Deform box status.



The original status of the Deform box of the target expression



The Deform box is replaced with the status of the source Deform box

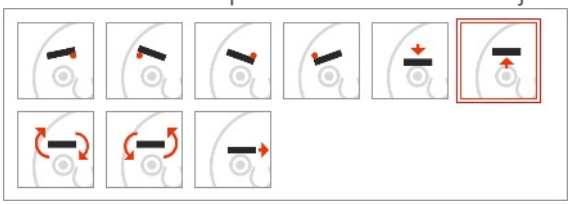
Using Transform Feature

The **Transform** feature can be used to set the **RTS**(Rotation, Transformation and Scale) of the expressions.

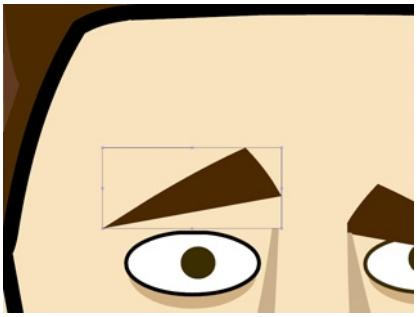
1. Select the facial feature from the **Face Part** pane.



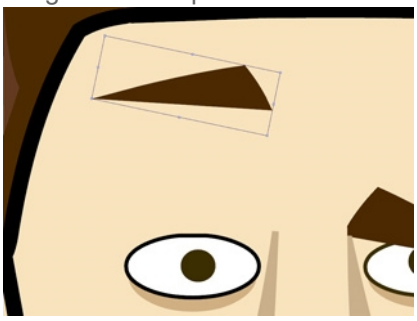
2. Select one of the expressions in the list for adjustments.



3. Press down the **Transform** button to enter the Deform mode.
4. You will see that the facial feature is framed up, with the transforming bounding box, with 8 control points.



5. Drag the control points to transform the facial feature in order to match the description of the thumbnail in Step 2.



6. Repeat the same steps for other expressions if you wish to transform them.

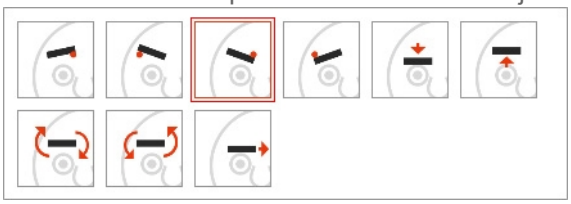
Copying Settings to Opposite Facial Features

For the facial features in pairs, such as the eyes, irises and the eyebrows, you can deform and transform the expressions for the one side and then copy the settings to the other side. It will save time for setting and ensuring symmetry of the facial features.

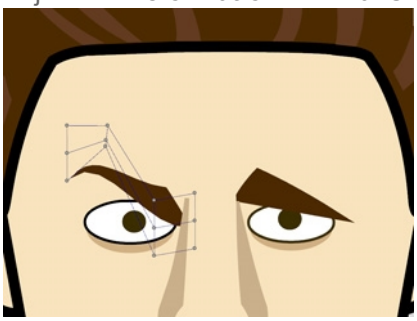
1. Select the facial feature from the **Face Part** pane.



2. Select one of the expressions in the list for adjustments.



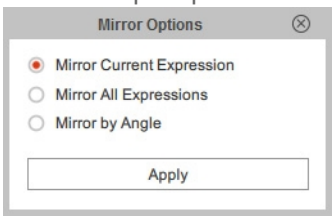
3. Adjust the **Deformation** and **Transformation** as described in the previous sections for the expression.



4. Click the **Mirror Options** button.



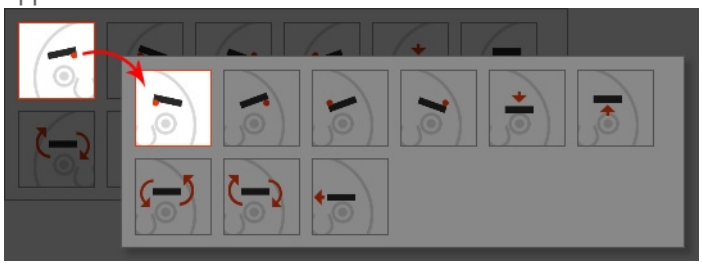
You will be prompted a **Mirror Options** panel.



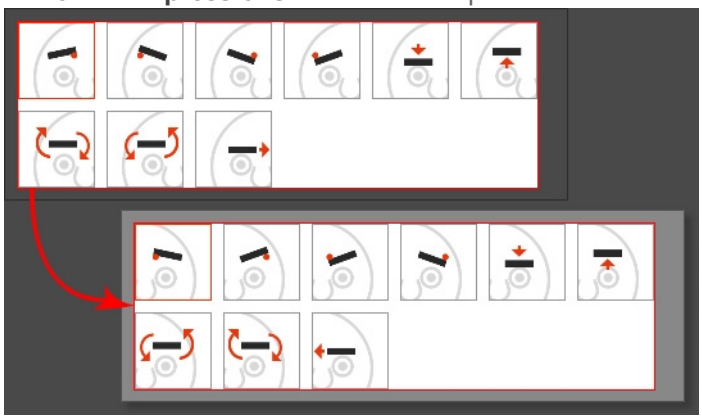
Mirror Options

The Mirror Options panel allows you to pick one of the methods for mirroring the expressions.

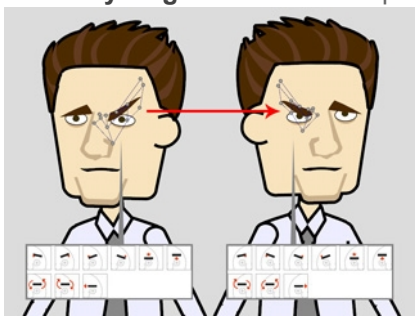
- **Mirror Current Expression**: To mirror the selected expression to the expression at the relatively opposite side.



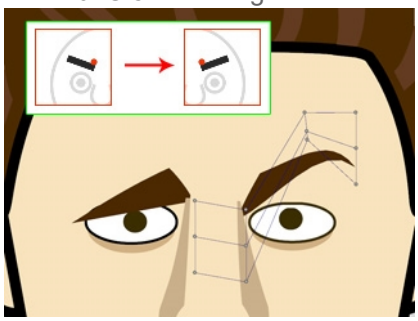
- **Mirror All Expressions**: To mirror all expressions in the list to the opposite side.



- **Mirror by Angle**: To mirror all expressions to the opposite side at the opposite angle.



5. Choose one of the 3 radio buttons in order to determine the mirroring method (in this case, the most basic one, **Mirror Current Expression**) and click the **Apply** button.
6. Pick the facial feature at the other side and select the relatively opposite expression, you will see that the **Deform** and **Transform** settings are mirrored to it.



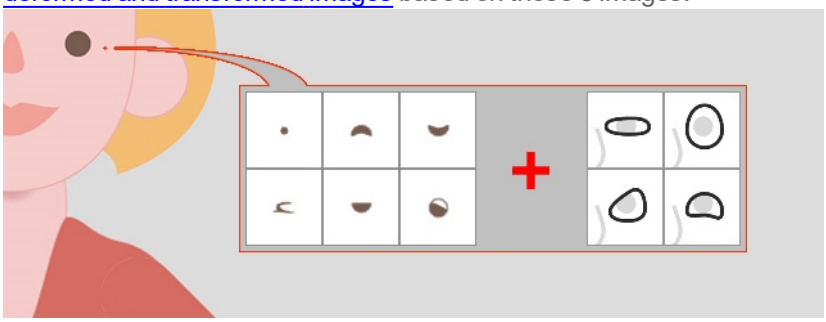
G3 Head (New for v3)

G3 heads blend the advantages of **G1** and **G2+** heads. They are a simple head with only one angle, composed of different facial sprites applied with the **Facial Animation Setup** technique to generate expressions.

Elements in G3 Heads

The **Elements** of a **G3** head can be the same as the ones in a **G2** or **G2+** heads. That is, the expressions for a facial feature can be derived from another expression image or individual images.

- **Derived Expressions by Facial Animation Setup Technique**: The default poses (expressions) of a facial feature are the same as the **G2+** facial system, some of the poses are replaced by deforming and transforming a base one. Therefore, you can save a lot of time by not preparing images for individual expressions. In the following example, you will only need to prepare 6 images. The other expression images will be filled up with the deformed and transformed images based on these 6 images.



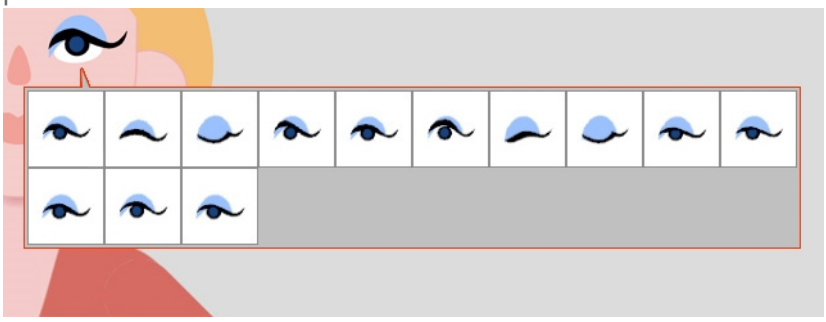
Note:

You are allowed to apply **G2+** facial features to a **G3** head because they share the same Facial Animation Setup technique.

Please refer to the following sections for more information:

- Introduction of Facial Animation Setup Panel
- Customizing Expressions with Deform / Transform Features

- **Expressions made by images**: **G3** heads also accept traditional facial features from a **G2** head. The elements for each sprite (expression) of a facial feature are all loaded images. Therefore, you have to prepare the images for each expression to ensure correctness when setting facial keys or facial puppeteering.
In the following example, you need to prepare 13 images to replace the original ones in order to create complete poses for this facial feature.

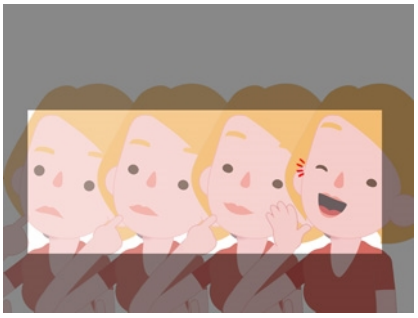


Note:

This type of facial features also support the **Facial Animation Setup** technique.

Facial Expression Animations

Any **G3** head shows expressions with the **Animation Facial Setup** feature, regardless if the facial feature is a **G1**, **G2**, **G2+** or **G3**. There are fewer sprite-switches but more transition animations between the expressions. You can still manually do the sprite switch if you wish.



The facial expressions are constructed by deforming and transforming the facial features.

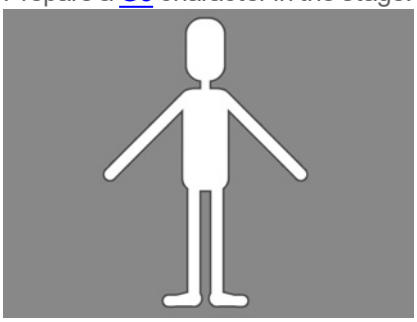
Applying a G3 Head from the Library (New for v3)

To apply a **G3** head to a **G3** or **Free Bone** character, please follow the steps below:

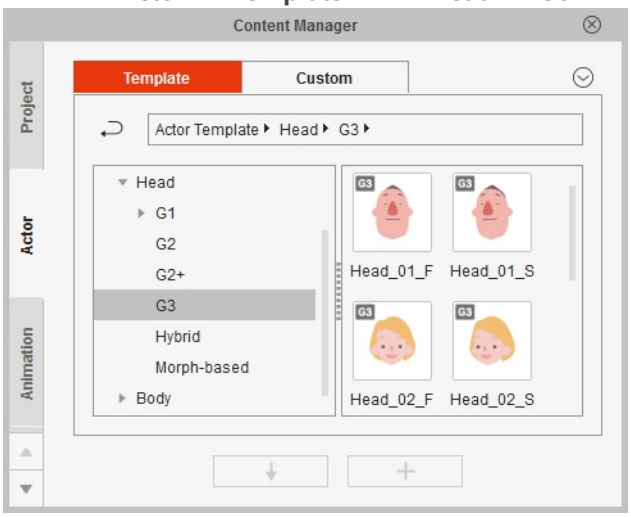
Apply a G3 Head to a G3 Character

Because a **G3** character contains official bone structures, you can simply apply a **G3** head to it in the **Stage**.

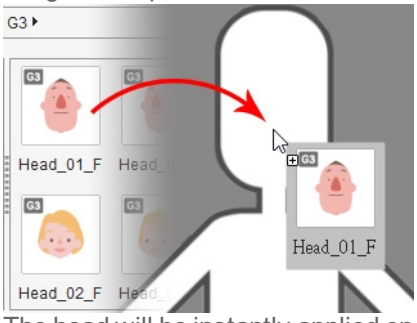
1. Prepare a **G3** character in the stage.



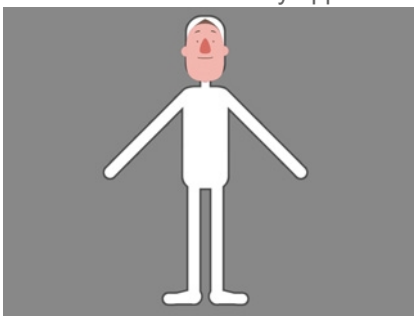
2. Open the **Content Manager**.
3. Switch to **Actor** >> **Template** tab >> **Head** >> **G3** library.



4. Drag and drop the desired one of the templates onto the **G3** character in the **Stage**.

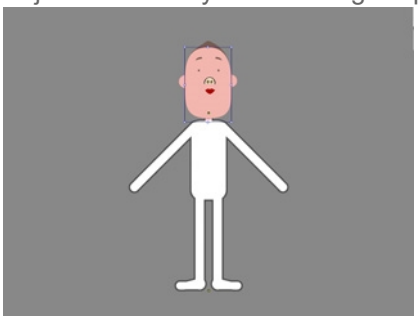


The head will be instantly applied on the **G3** character.

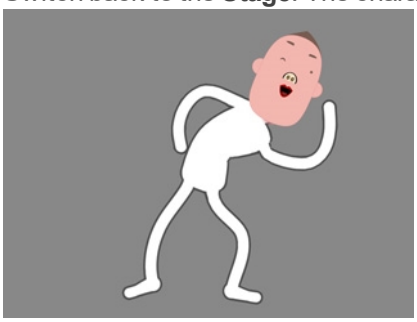


5. Select the **G3** character and enter the **Composer** mode.

6. Adjust the head by transforming or optionally replacing facial features.



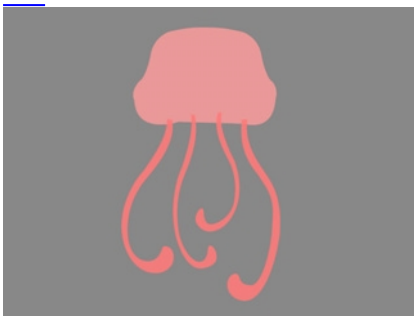
7. Switch back to the **Stage**. The character will be ready to perform, talk, and show expressions.



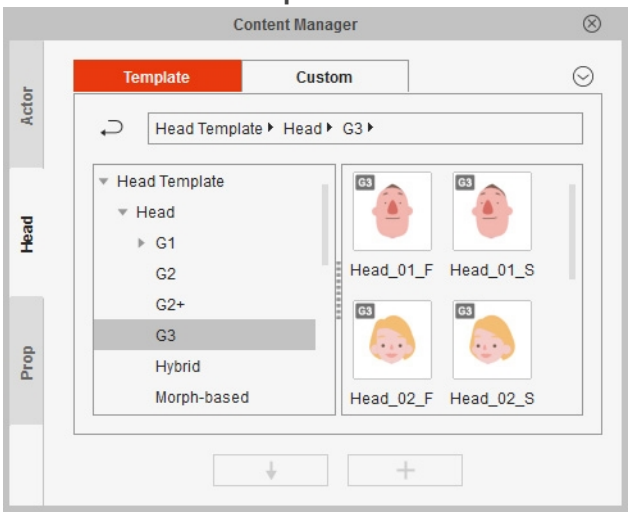
Apply a G3 Head to a Free Bone Character

A **Free Bone** character can be built by any kind of bone structure, therefore you cannot apply any **G3** head onto it in the **Stage**. Instead, you must do it in the **Composer** mode.

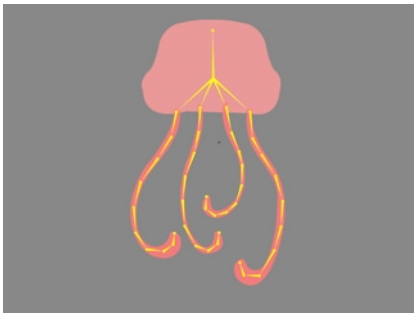
1. Prepare a **Free Bone** character in the stage by either applying from the **Content Manager** or creating a custom one.



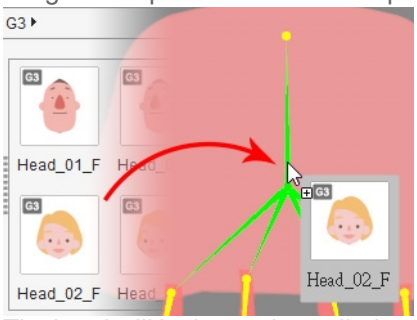
2. Select the **free bone** character and enter the **Composer** mode.
3. Open the **Content Manager**.
4. Switch to **Actor** >> **Template** tab >> **Head** >> **G3** library.



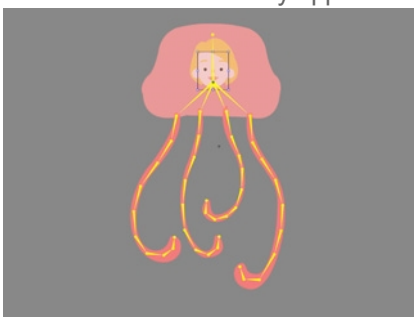
5. Make sure that the bone of the character is created and shown.



6. Drag and drop the desired the template onto the desired bone of the **free bone** character.

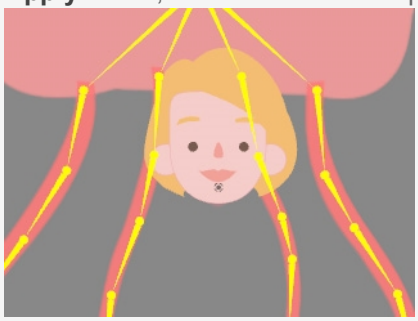


The head will be instantly applied on the **free bone** character.



Note:

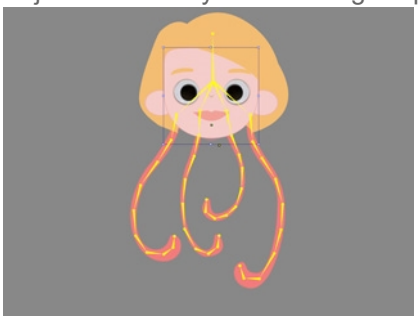
- If you apply the **G3** head by double-clicking on the template or selecting the template and clicking the **Apply** button, then the head will be placed on the root of the character.



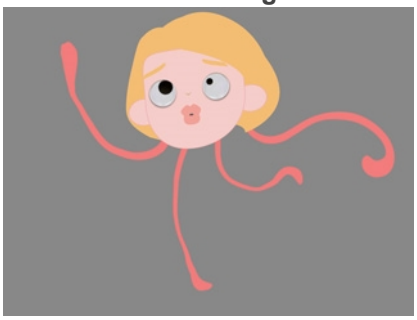
- Click the **Remove Head** button if you wish to completely remove a incorrectly applied head.



7. Adjust the head by transforming or optionally replacing facial features.



8. Switch back to the **Stage** and the character will be ready to perform, talk, and show expressions.

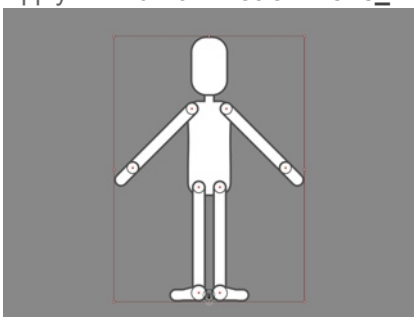


Creating a Custom G3 Head (New for v3)

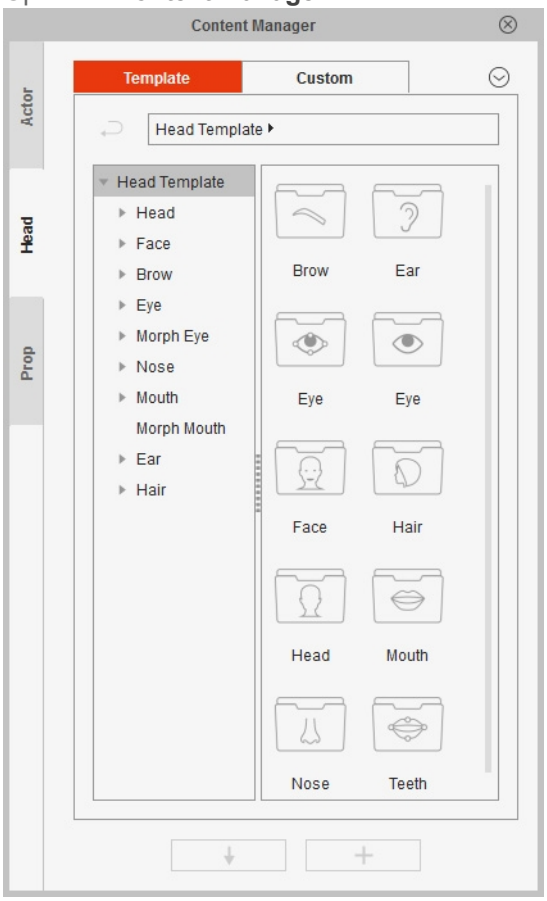
If you want to create a custom **G3** head, then you can start by using the embedded **G3** head as a base, and then add facial features to the head.

Adding Facial Features to an Empty Head

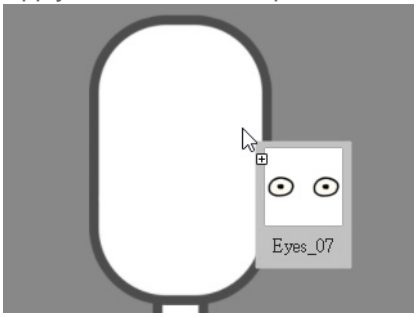
1. Apply the **Human Motion Bone_F** template to the stage and make sure that it is selected.



2. Switch to the **Composer** mode.
3. Open the **Content Manager** and switch to the library.



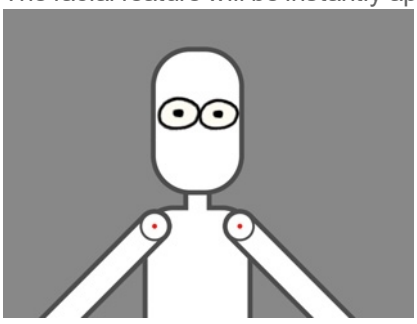
4. Apply facial feature templates in the corresponding library from the **Eye** library.



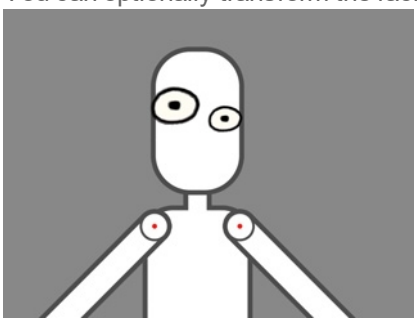
Note:

- You can apply the facial feature by double-clicking on the desired template or drag and dropping the template onto the head.
- Any facial feature template from the **G1**, **G2** or **G2+** libraries can be applied to the G3 head.

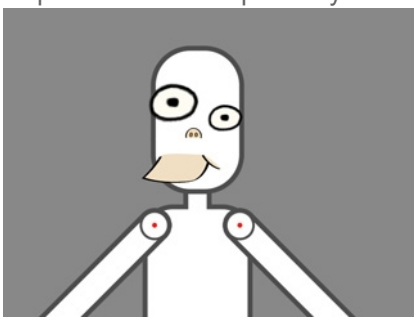
The facial feature will be instantly applied onto the empty face.



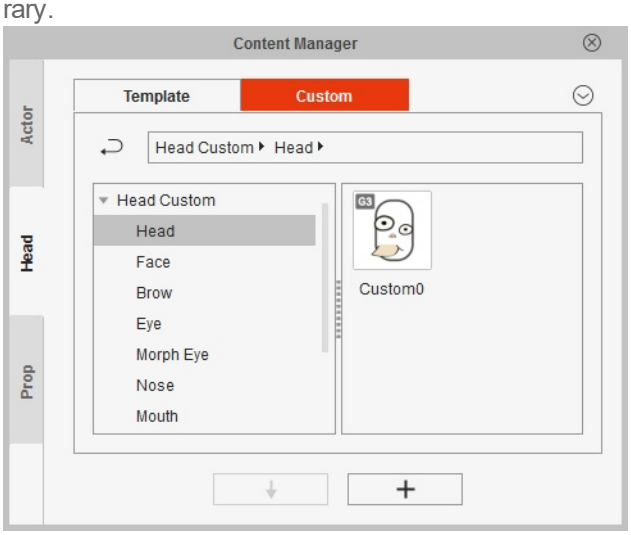
5. You can optionally transform the facial feature.



6. Repeat the same steps until you are happy with a head.



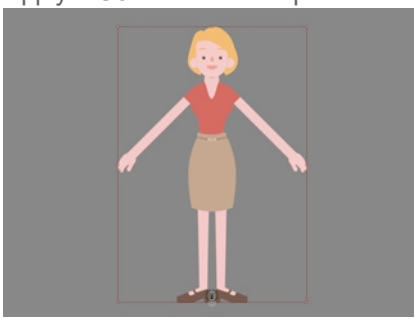
7. Make sure that the **Content Manager** is switched to the **Head** library.
8. Click the **Add** button at the bottom of the **Content Manager** to add this new **G3** head into your custom head library.



Replacing Facial Features with Sprite Editor Pro & Pipeline

In addition to creating a new **G3** head from scratch, you can replace the elements of an existing **G3** head with the **Sprite Editor** to create a new one.

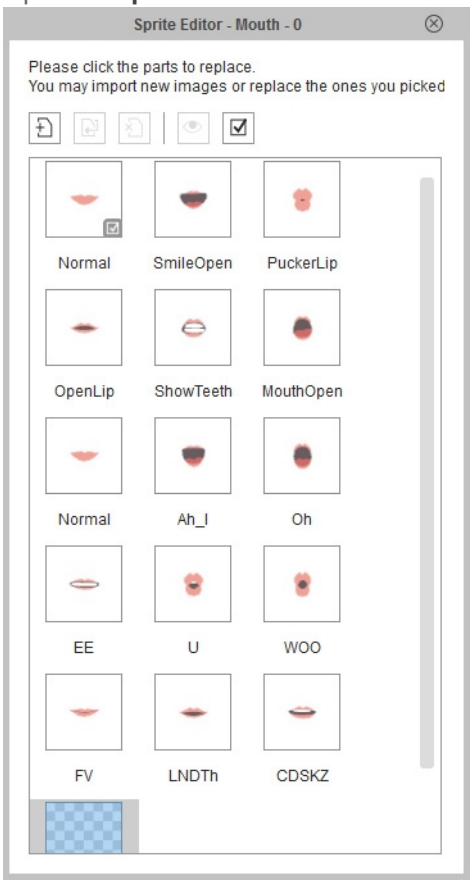
1. Apply a **G3** character template in the stage and make sure it is selected.



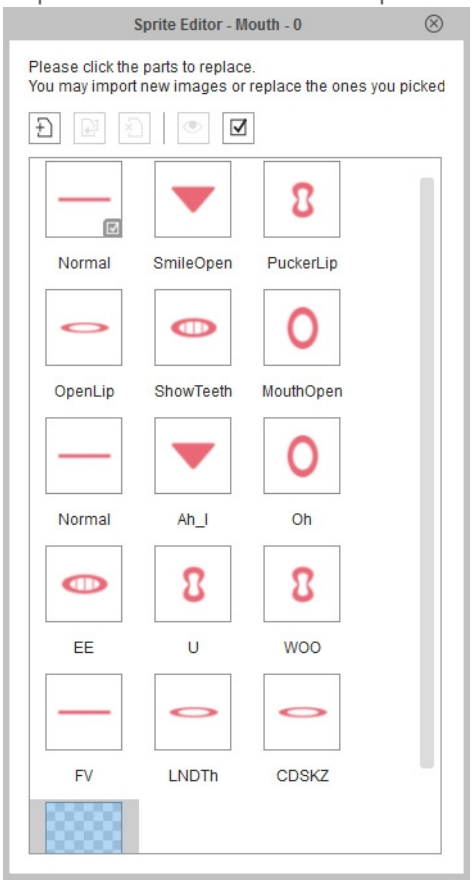
2. Switch to the **Composer** mode.
3. Select one of the facial features.



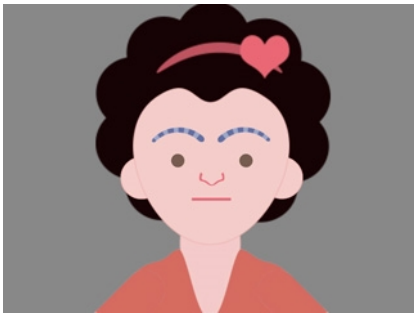
4. Open the **Sprite Editor**.



5. Replace all the elements in this sprite.



6. Repeat the same step with other facial features, including the front and back hair, eyebrows, ears, nose and even the face.



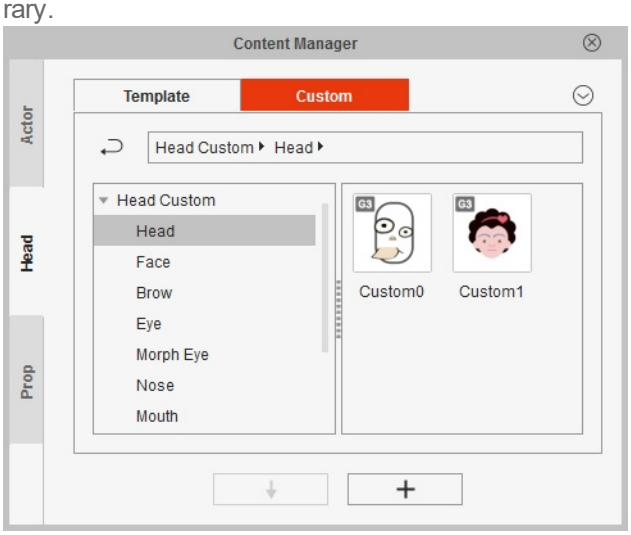
Note:

The eye elements have a creation process. Please log into our website as a developer and read the white-papers for more information on creating eye templates before you replace the eye elements.

However, if you wish to create eyes that cannot roll, then skip this section.

7. Make sure that the **Content Manager** is switched to the **Head** library.

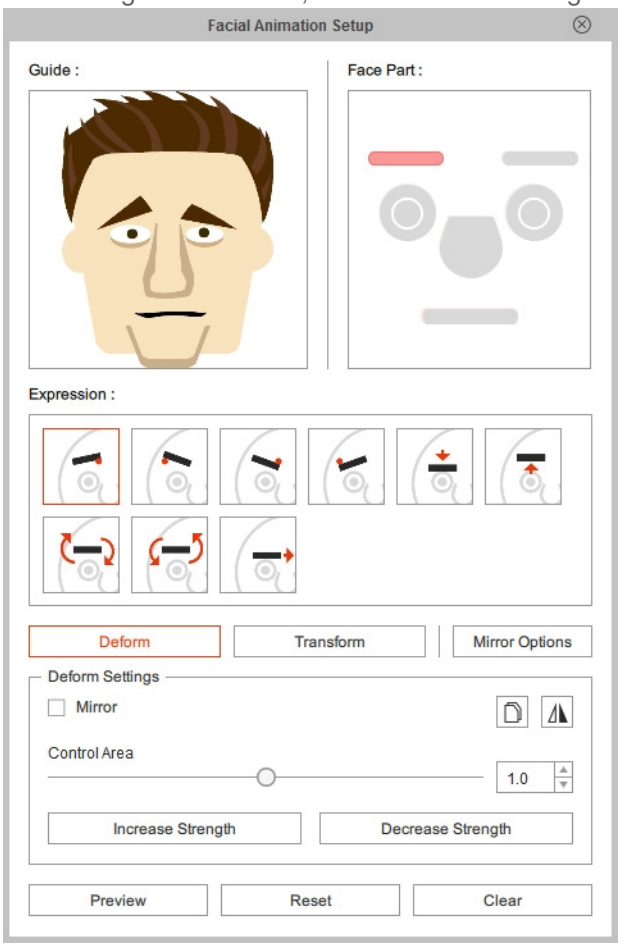
8. Click the **Add** button at the bottom of the **Content Manager** to add this new **G3** head into your custom head library.



Introduction of Facial Animation Setup Panel (New for v3)

Pro & Pipeline

In **CrazyTalk Animator**, you can always replace a character with another one by drag and dropping the desired one onto the existing one. However, now there are some regulations for replacing characters.



	Name	Description
1	**Indication**	This animation indicates the animation result of the selected expression of the facial feature.
2	**Face Part**	You can select adjustable facial features from this pane. Including the **eyebrows**, **eyes**, **irises**, **nose** and **mouth**.
3	**Expression**	Select one of the expressions within the list for further adjustments.
4	**Adjusting Mode**	You can switch to **Deform** or **Transform** mode by pressing down either one of these buttons.
5	**Mirror Options**	Click this button to determine the mirror method for the currently selected facial feature or expressions.
6	**Deform Settings**	Use the deform settings to determine the size and influencing weight of the Deform box for the currently selected expression.
7	**Preview**	Click this button to preview the deforming result of the selected expression.
8	**Reset**	Click this button to ignore your adjustments to the selected expression and reset to the default one.
9	**Clear**	Click this button to return the selected expression to a neutral one, for no expression at all.

Customizing Expressions with Deform / Transform Features (New for v3)

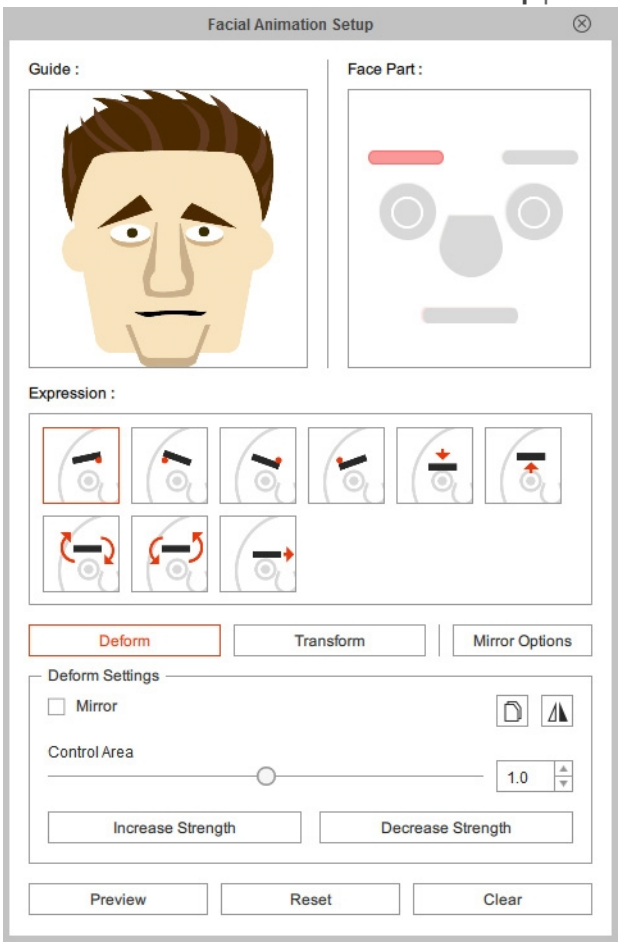
Pro & Pipeline

For **CrazyTalk Animator G2+** face, you can create different pose instances from a sprite element with **Deform** and / or **Transform** features. Thus you do not need to prepare numerous images for each pose but to replace the poses with these two methods provided in the Facial Animation Setup panel.

Before you start this section, you need to first convert a **G2** head to a **G2+** head , and enter the **Composer** mode. After that, click the **Facial Animation Setup** button on the Toolbar.



You will then see the **Facial Animation Setup** panel displays on the screen.



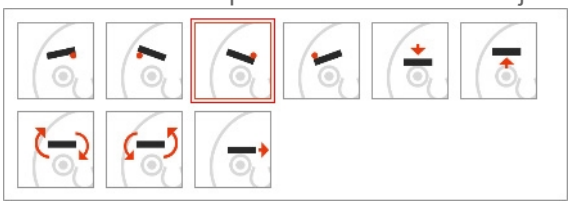
Using Deform Feature

The **Deform** feature can be used to dramatize the shapes of the expressions.

1. Select the facial feature from the **Face Part** pane.



2. Select one of the expressions in the list for adjustments.

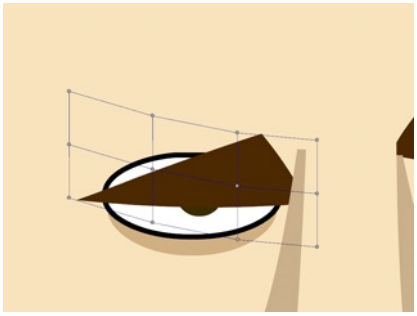


Note:

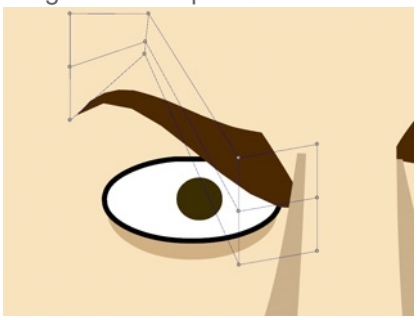
After an expression is picked, the animation in the **Guide** pane of this panel will start to play back to indicate the animation of the expression. You can then adjust the expression accordingly.



3. Press down the **Deform** button to enter the Deforming mode.
4. You will see that the facial feature is framed up by a deform box with 12 control points.



5. Drag the control points to deform the facial feature in order to match the description of the thumbnail in Step 2.

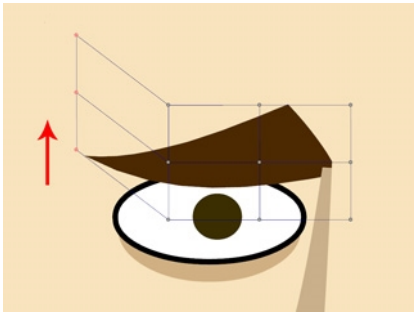


6. Repeat the same steps for other expressions if you wish to make them more exaggerated.

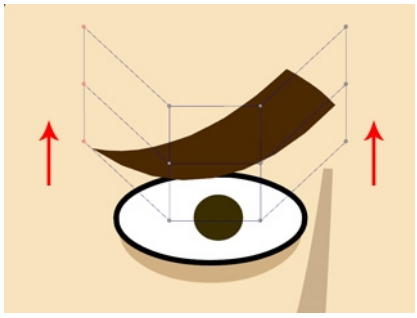
Adjusting Deform Box

There are some settings in the **Deform Settings** group affecting the Deform box. By adjusting the Deform box, the facial feature will be simultaneously influenced.

- Activate the **Mirror** box in order to move the opposite points of a deform box at the same time.

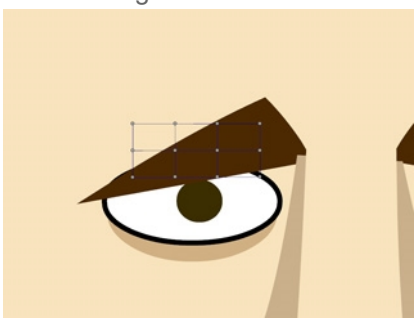


The **Mirror** box is deactivated

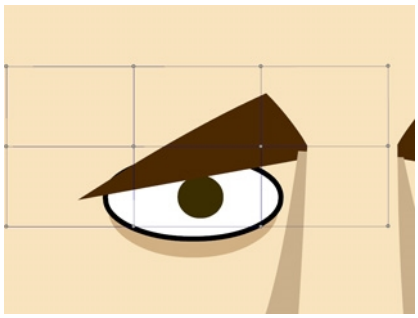


The **Mirror** box is activated

- You can drag the **Control Area** slider in order to enlarge or shrink the Deform box.

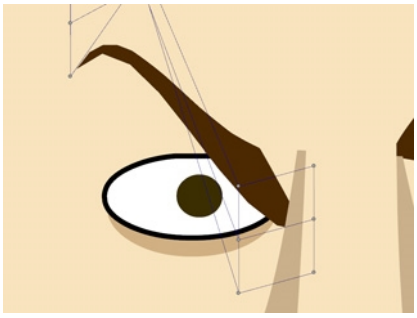


Control Area: 0.5

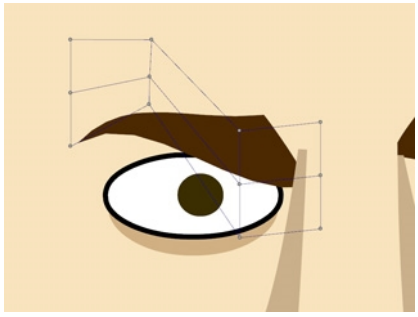


Control Area: 1.5

- Click the **Increase Strength** or **Decrease Strength** button to make the expression more or less exaggerated.

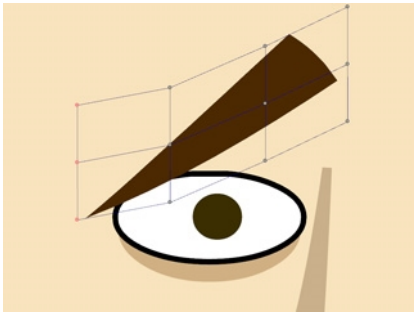


The **Increase Strength** button is clicked

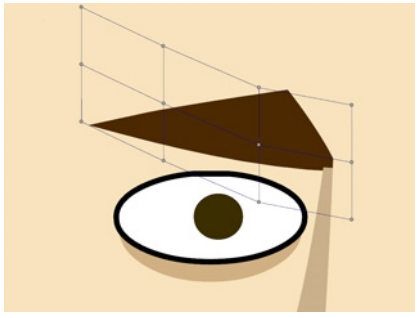


The **Decrease Strength** button is clicked

- Click the **Flip** button to horizontally flip the Deform box.



Before flipping

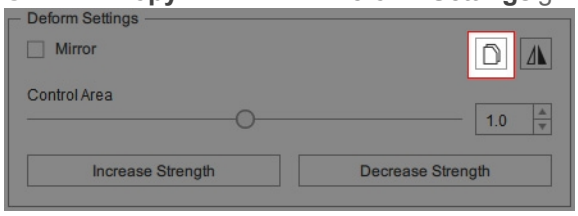


After flipping

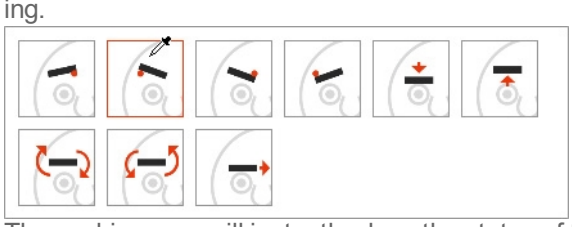
Copying and Pasting Deform Box Status

Because some of the expression thumbnails are similar, if you wish to make them look identical, then you can use this feature to copy the status of the Deform box to another expression.

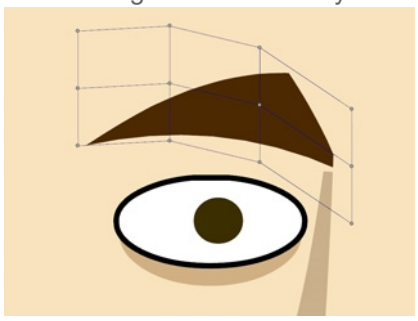
1. Click the **Copy** button in the **Deform Settings** group.



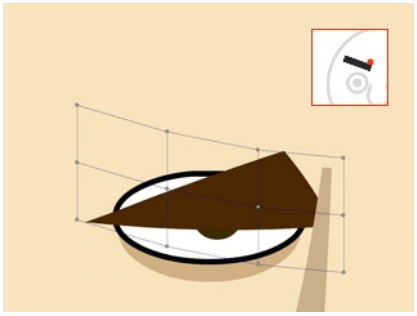
2. Hover the cursor and click on an expression thumbnail in which the Deform box is used as a source for copying.



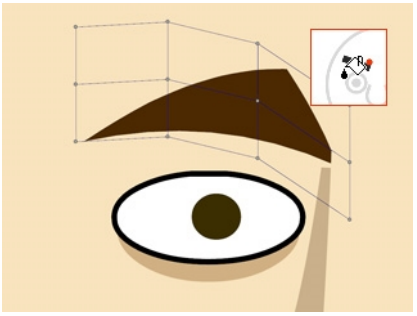
The working area will instantly show the status of the Deform box for the expression of this thumbnail.



3. Move the cursor to the target expression thumbnail and click on it to paste the Deform box status.



The original status of the Deform box of the target expression



The Deform box is replaced with the status of the source Deform box

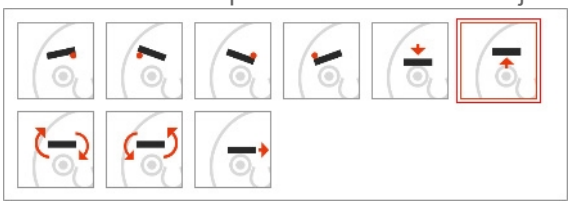
Using Transform Feature

The **Transform** feature can be used to set the **RTS**(Rotation, Transformation and Scale) of the expressions.

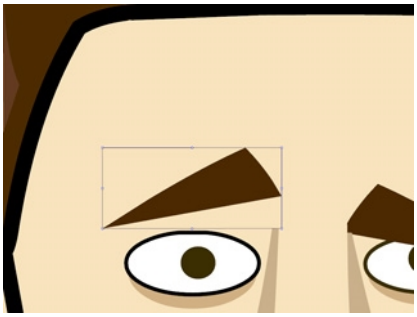
1. Select the facial feature from the **Face Part** pane.



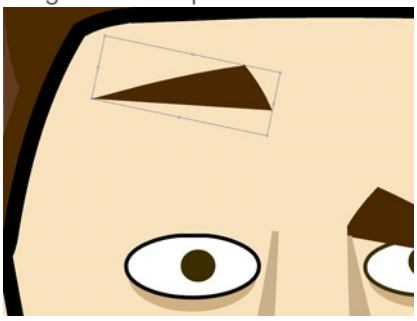
2. Select one of the expressions in the list for adjustments.



3. Press down the **Transform** button to enter the Deform mode.
4. You will see that the facial feature is framed up, with the transforming bounding box, with 8 control points.



5. Drag the control points to transform the facial feature in order to match the description of the thumbnail in Step 2.



6. Repeat the same steps for other expressions if you wish to transform them.

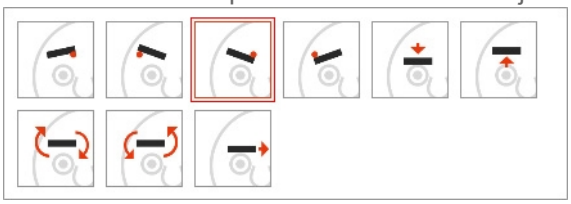
Copying Settings to Opposite Facial Features

For the facial features in pairs, such as the eyes, irises and the eyebrows, you can deform and transform the expressions for the one side and then copy the settings to the other side. It will save time for setting and ensuring symmetry of the facial features.

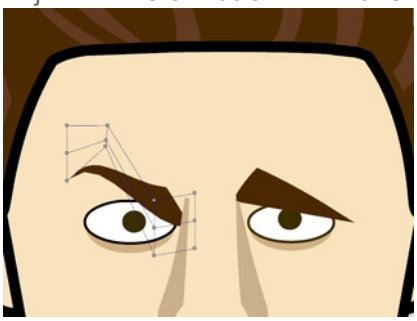
1. Select the facial feature from the **Face Part** pane.



2. Select one of the expressions in the list for adjustments.



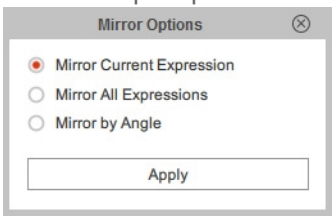
3. Adjust the **Deformation** and **Transformation** as described in the previous sections for the expression.



4. Click the **Mirror Options** button.



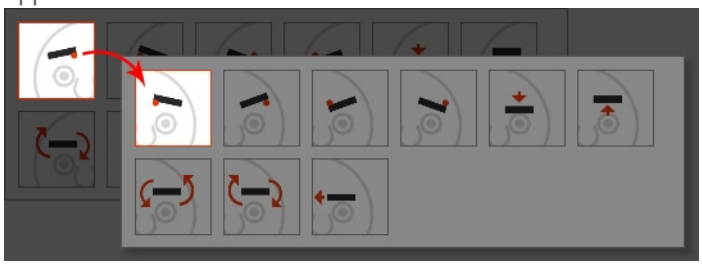
You will be prompted a **Mirror Options** panel.



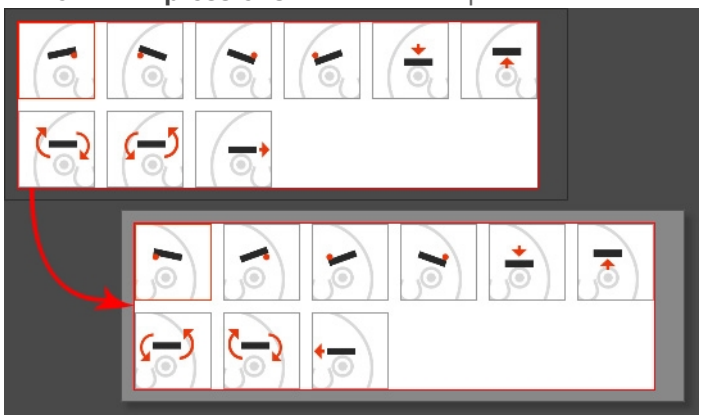
Mirror Options

The Mirror Options panel allows you to pick one of the methods for mirroring the expressions.

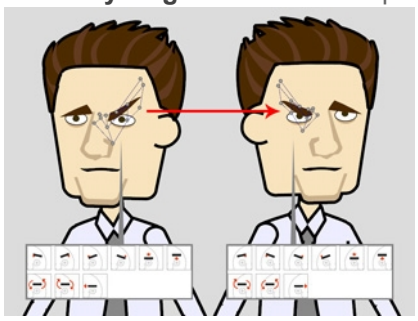
- **Mirror Current Expression**: To mirror the selected expression to the expression at the relatively opposite side.



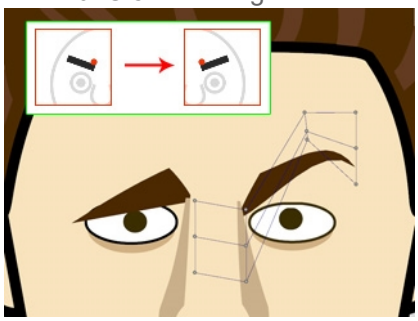
- **Mirror All Expressions**: To mirror all expressions in the list to the opposite side.



- **Mirror by Angle**: To mirror all expressions to the opposite side at the opposite angle.

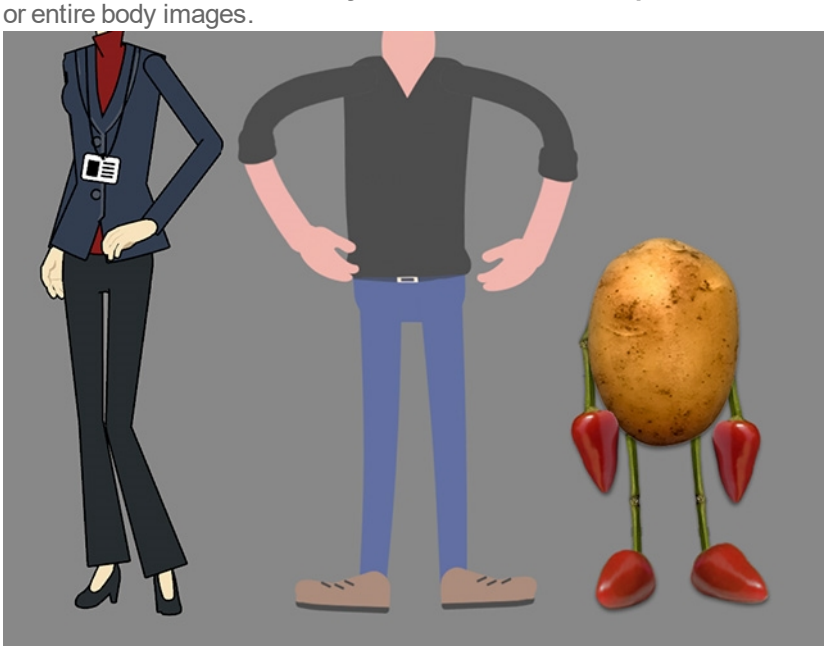


5. Choose one of the 3 radio buttons in order to determine the mirroring method (in this case, the most basic one, **Mirror Current Expression**) and click the **Apply** button.
6. Pick the facial feature at the other side and select the relatively opposite expression, you will see that the **Deform** and **Transform** settings are mirrored to it.



Body Types (New for v3)

The characters bodies in **CrazyTalk Animator** are all **Sprite-based** ones, as they are composed of sprites with body parts or entire body images.



You are able to create and modify these types of bodies by means of the **Sprite Editor** in the **Composer Mode**.

Please note that the elements in each sprite can be:

- Image - In **JPG**, **JPEG**, **BMP**, **GIF**, **PNG**, **TGA** formats.
- Video - In **AVI**, **WMV**, **RM**, **RMVB**, **MPEG**, **MPG**, **MPE**, **MP4**, **ASF**, **ASX**, **WM**, **FLV**, **MOV** and **popVideo** formats.
- Vector images - In **SWF** format.

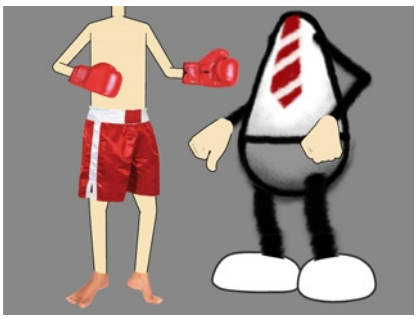
Therefore, the appearances of the bodies can be **Image**, **Vector** or **Mixed**.



Image Sprite-based Bodies



Vector Sprite-based Bodies



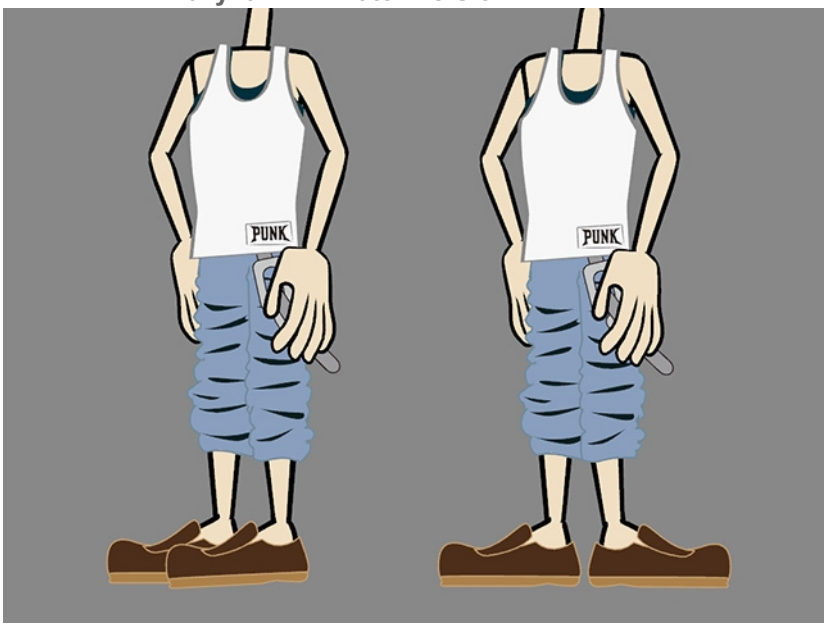
Mixed Sprite-based Bodies

In addition, the body types are divided into different categories in accordance with the generation:

- G1 Body with Single Angle
- G2 Body with Multiple Angles

G1 Body with Single Angle (New for v3)

The **G1** (generation 1) body can be found and used in **CrazyTalk Animator Version 1**. It is designed to face either Front or Side view (implied by the directions of the left feet of the character). There is no way to change the direction of this type of characters in **CrazyTalk Animator Version 1**.

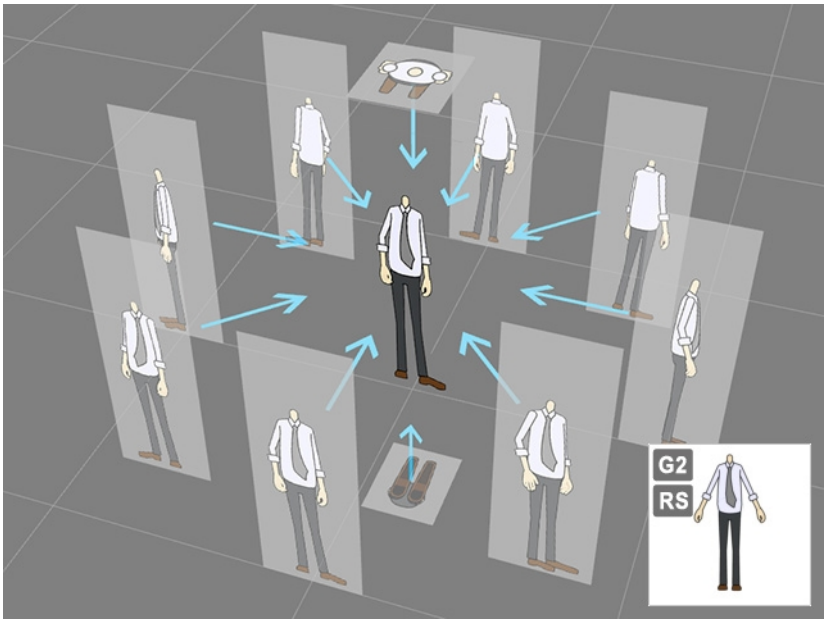


If you apply this type of body to **CrazyTalk Animator Version 2, or above**, then the body will be put into the 10 different slot angles. Therefore, no matter which angle you turn the character, the body will always look the same. Please refer to the G2 Body with Single Angles section for more information.

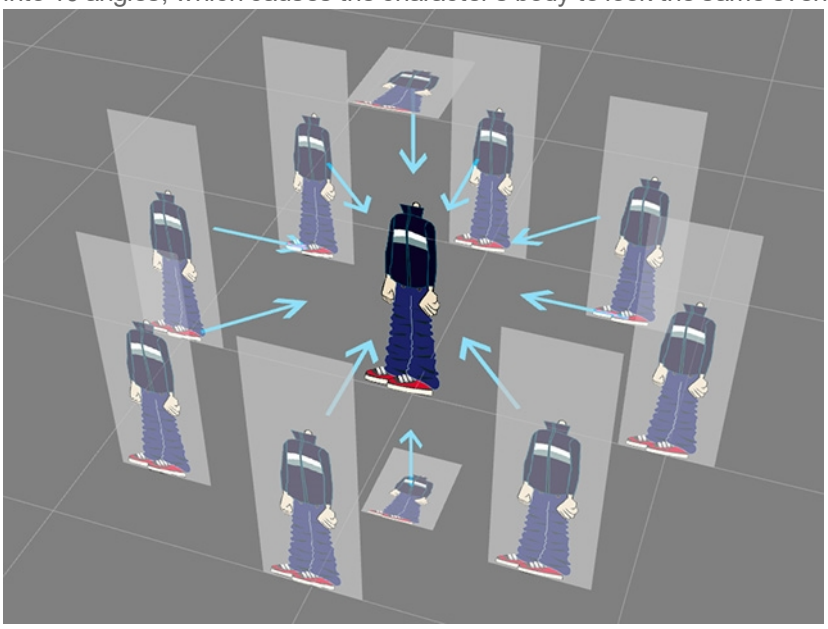
Most of the **G1** Sprite-based bodies of this type can be seen in the **Content Library** of **CrazyTalk Animator version 2 or above.** The bodies have been converted, even if they have been marked **G1** at the corner of their thumbnails.

G2 Body with Multiple Angles (New for v3)

The default **G2** (generation 2) bodies are created by **CrazyTalk Animator Version 2, or above**. They are designed with 10 angles in order to have the characters turn in different directions. The thumbnail of this type of bodies will be marked with **G2** at the corner as shown below.



However, if a body is converted from a **G1** body, then **CrazyTalk Animator Version 2, or above** only inserts the **G1** body into 10 angles, which causes the character's body to look the same even if you turn the character in different directions.



Breaking Down of an Actor

Stage Mode

In the **Stage Mode** each character in **CrazyTalk Animator** can be roughly divided into two main parts; **Head** and **Body**. For more information please refer to the Mix-matching Composite Character from Library section.

Composer Mode

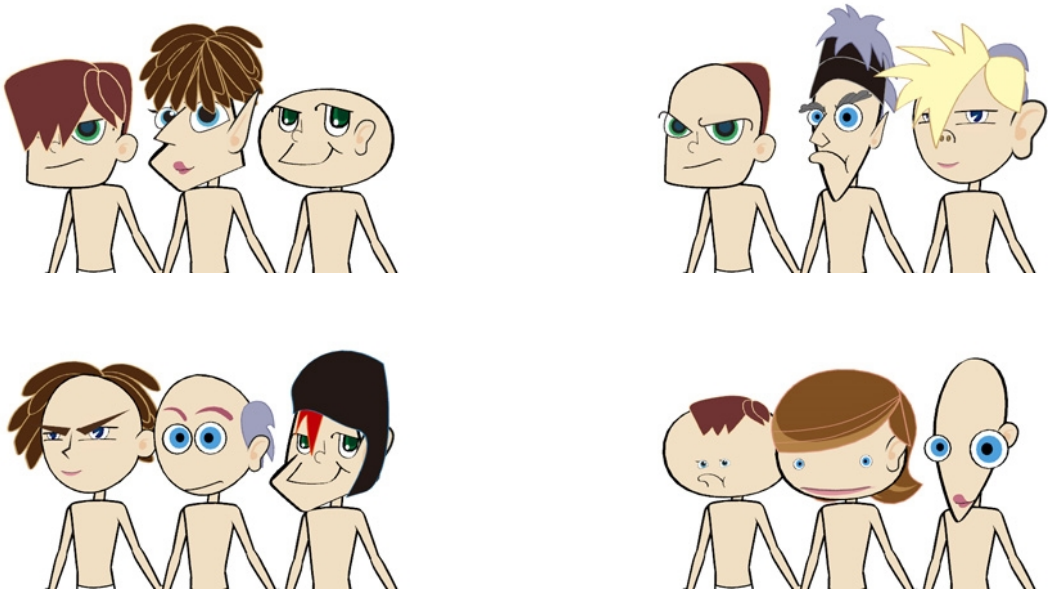
In the **Composer Mode**, the head and the body are dissected into more detailed body parts.

Head

The heads in **CrazyTalk Animator** can be **Sprite-based** or **Morph-based**.

A Sprite-based head is separated into **Head** (with all the facial features), **Face** (face shapes), **Brow**, **Eye**, **Nose**, **Mouth**, **Ear**, and **Hair**. You may assemble different facial features from the libraries in order to create large amounts of varying faces.

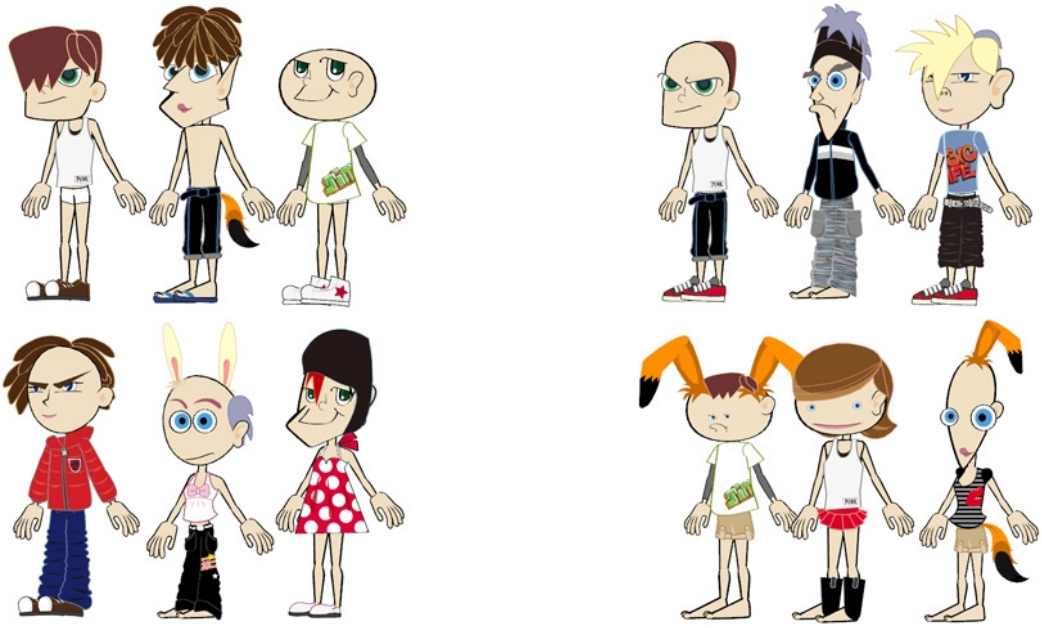
For more information, please refer to the Using Predefined Sprites to Compose a Face section.



Body

The bodies in **CrazyTalk Animator** can be dissected into; **Body** (containing all body parts), **Upper** (upper body), **Lower** (lower body), **Hands**, **Shoes**, **Headdress** and **Tail**.

For more information, please refer to the Changing Parts of a Character section.

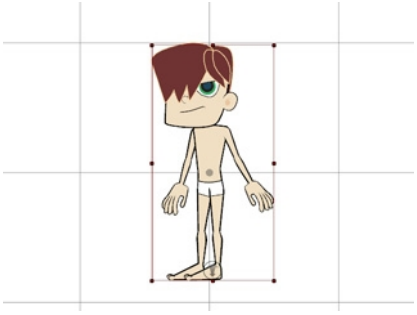


Changing Parts of a Character

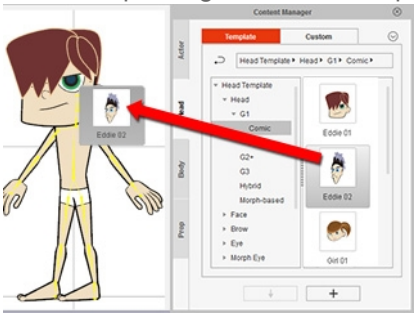
In the Mix-matching Composite Character from Library section, you can perform basic character compositions by changing the head and the body from the **Content Manager**. You may use the advanced method to compose a character with the **Composer** features.

Compositing a Character

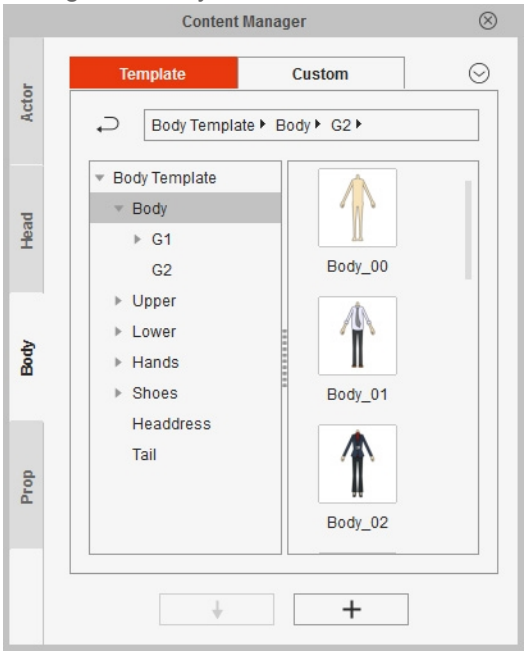
1. First select a character.



2. Click the **Composer** button to switch to the **Composer Mode**.
3. In the **Head** tab of **Content Manger**, apply a head template from the **Head** content folder. For more information about compositing a custom face, please refer to the Using Predefined Sprites to Compose a Face section.



4. To change to the corresponding content libraries, simply switch to the **Body** tab and select the templates that belong to the body.



5. Apply templates from any of the libraries found. (**Upper** to **Tail**)


Apply Upper


Apply Lower


Apply Hands


Apply Shoes


Apply Headdress


Apply Tail

6. Click the **Back to Stage** button to update the original character.



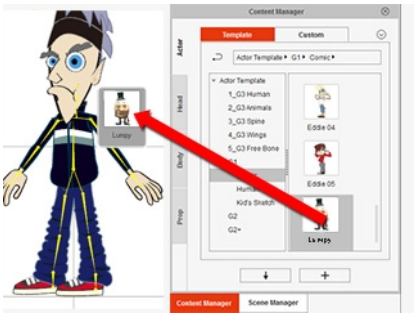
Note:

- If you need to transform body parts or facial features, then refer to the Transforming Body Parts and Transforming Facial Features sections for more information.

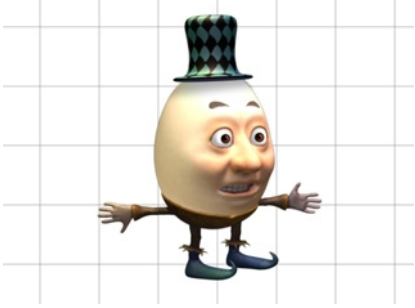
Replacing an Existing Character

In the **Composer**, when you want to give up the current character modification and start from the very beginning, simply use a template from the library to replace the current one:

1. Switch to the **Actor** tab in the **Content Manager**.
2. Double click on the desired template. You may also drag the desired template and drop it onto the selected character.



3. The original character is now replaced with the new one.



Creating G1 Character with Frontal Angle

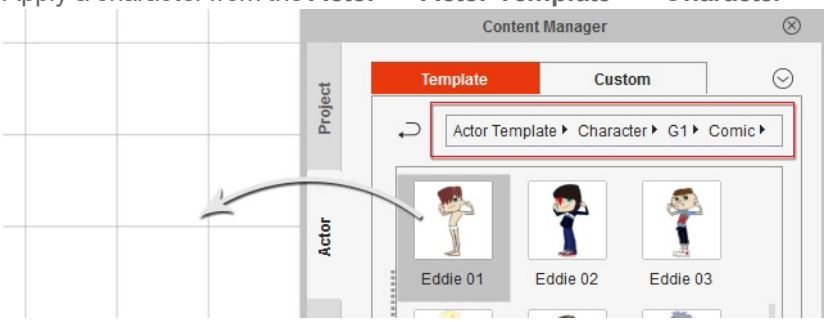
Pro & Pipeline

If you only want to create a common 2D animations in which the characters perform in flat manner, then you only need **G1** character with frontal angle.

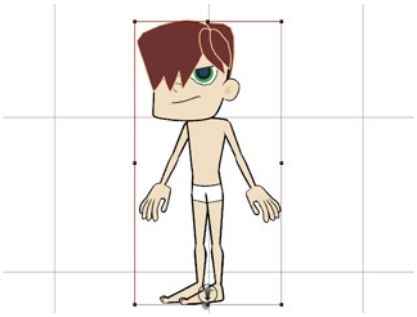
To build up a **G1** character, you need to follow the steps below:

*Please note that this feature is for the **Pipeline** and **Pro** versions only.

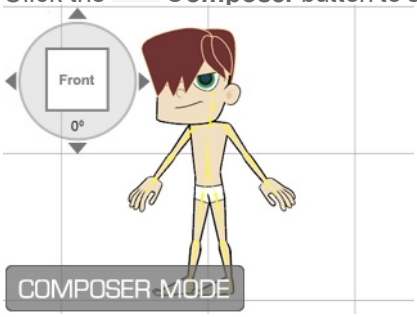
1. Apply a character from the **Actor** >> **Actor Template** >> **Character** >> **G1** library (in this case, the **Eddie 01**).



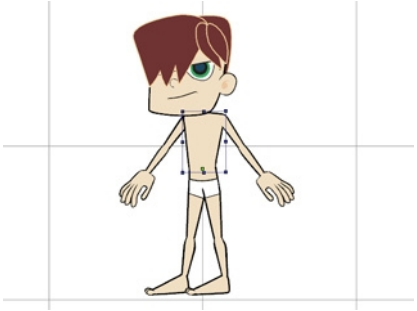
2. The G1 character is loaded and auto-selected.



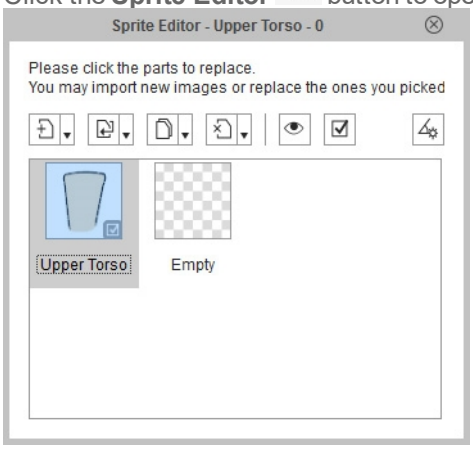
3. Click the **Composer** button to switch to the **Composer Mode**.



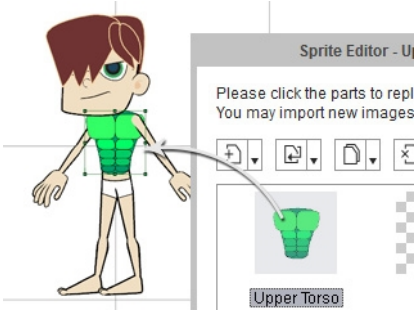
4. Select the sprite of a body part.



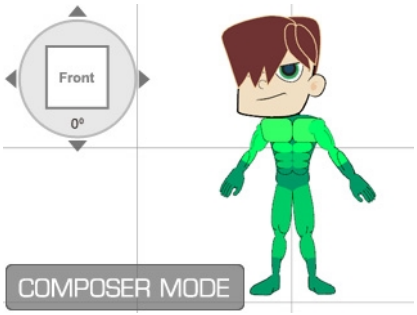
5. Click the **Sprite Editor** button to open the panel.



6. Make sure the pose is selected and click the **Replace** button.
7. Select a prepared media file and click the **OK** button to replace the original one.

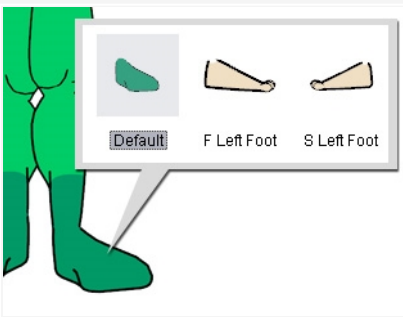


8. Pick any of the other body parts and repeat step 6 to 8 until all prepared media are imported to replace the original ones.



Note:

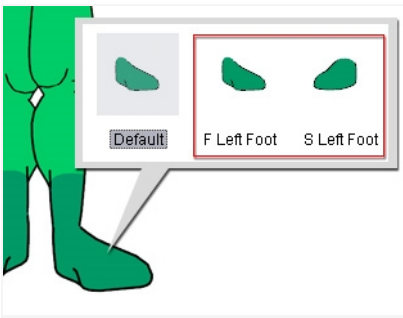
There are some body parts need further adjustment of replacement because there might be more than one poses in their sprites, especially the left **Upper Arm**, left **Forearm**, left **Thigh**, left **Calf**, left **Foot** and both **Hands**; because some default motions will use these poses; take the left foot as an example:



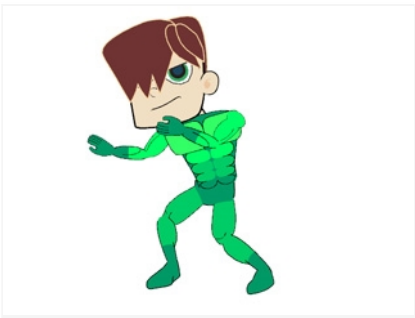
There are three poses in the **left foot** sprite but only the first one is replaced with a piece of new media.



A motion that utilizes another non-replaced pose in the sprite causes the visual artifacts.

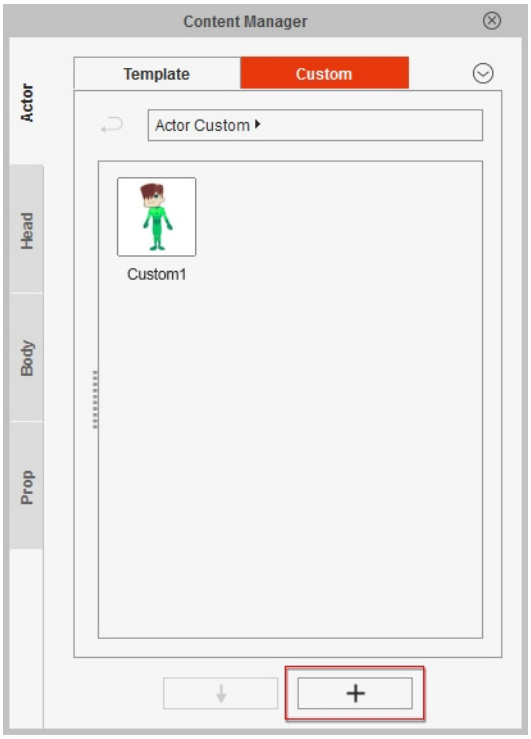


Every pose is replaced with prepared media.

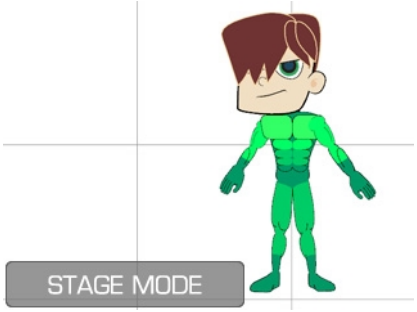


The artifact disappears and the motion appears correct.

9. Click the **Add** button under the **Content Manager** to save the custom character.



10. Click the **Back to Stage** button to bring the new character back to the stage.



Creating G2 Character with Multiple Angles

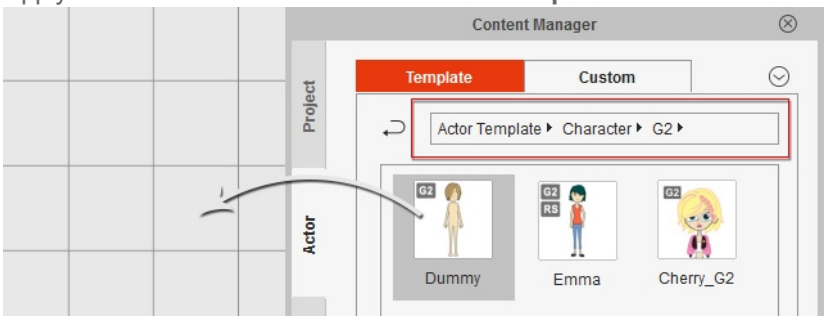
Pro & Pipeline

A **G2** character is a character with body parts composed of multiple angle media. You are able to apply both 2D and 3D motions to the **G2** character with multiple angle performance.

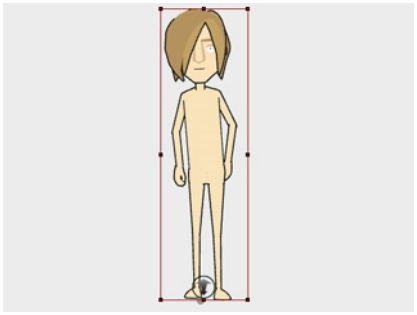
*Please note that this feature is for the **Pipeline** and **Pro** versions only.

Step 1: Applying Dummy Character for Replacement

1. Apply a character from the **Actor** >> **Actor Template** >> **Character** >> **Dummy**.

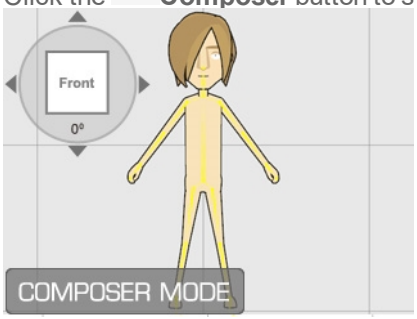


2. The basic G2 character is loaded for replacement procedure and is auto-selected.

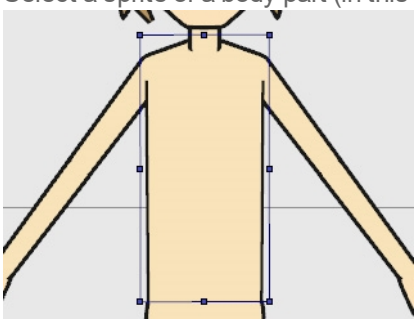


Step 2: Replacing the Angles of Specific Body Parts

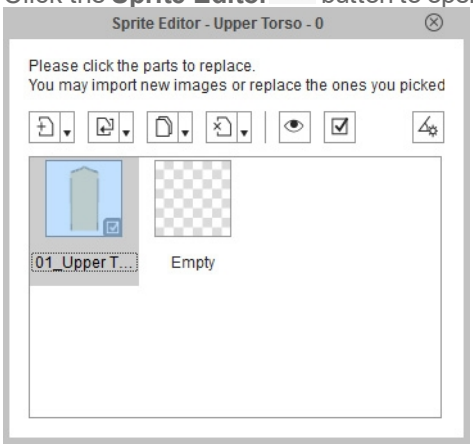
1. Click the **Composer** button to switch to the **Composer Mode**.



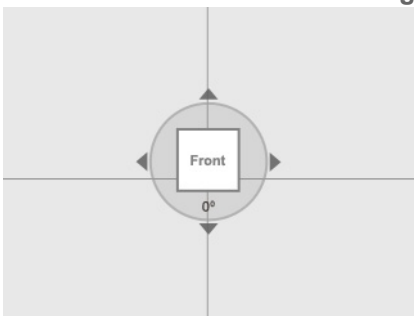
2. Select a sprite of a body part (in this case, the upper torso).



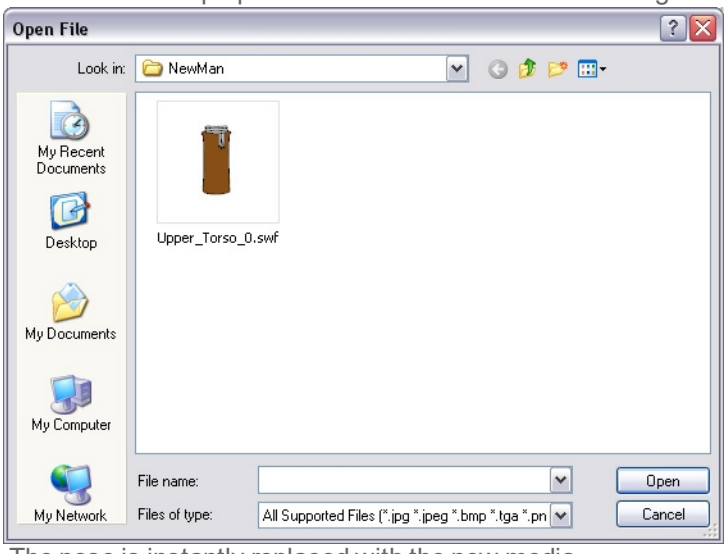
3. Click the **Sprite Editor** button to open the panel.



4. Click the 4 arrow buttons of the **Angle Switch** to determine an angle (in this case, 0 degree).



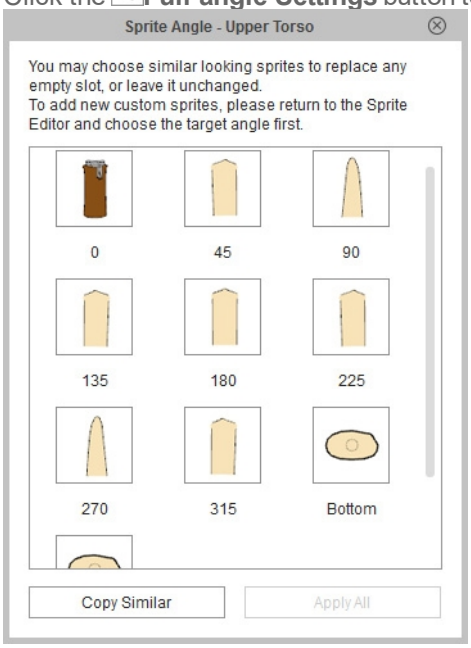
5. Pick the pose in the **Sprite Editor** and click the **Replace Current Sprite** button.
6. Select one of the prepared media file that matches this angle and click the **Open** button.



The pose is instantly replaced with the new media.



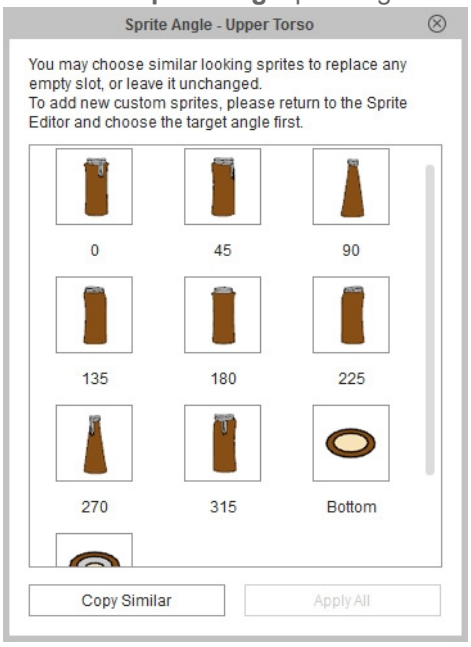
7. Click the **Full-angle Settings** button to display all media that compose this pose.



8. Repeat steps 4 to 7 until 10 media of different degrees are loaded to replace each angle in the table.

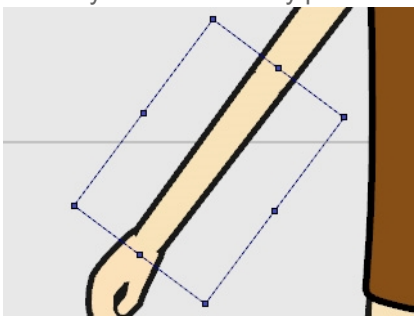


Check the **Sprite Angle** panel again to make sure you have replaced all angles.

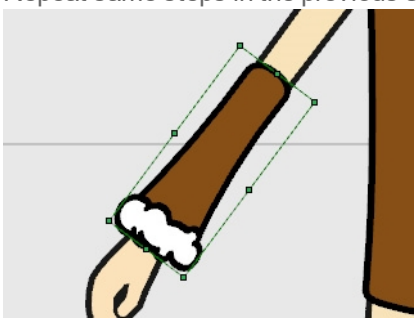


Step 3: Replacing Other Body Parts

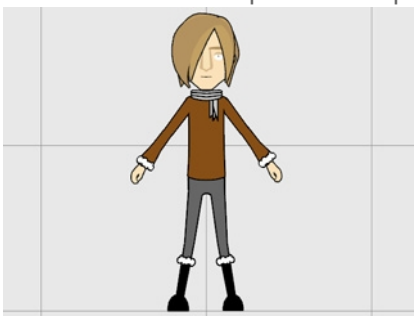
1. Pick any of the other body parts.



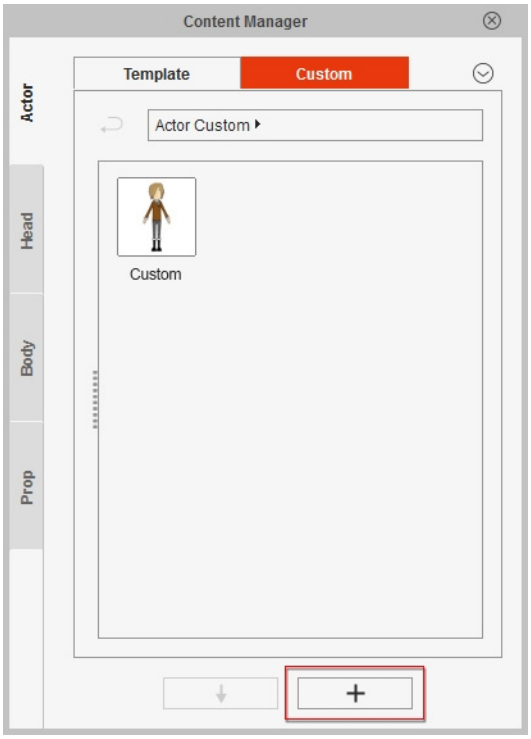
2. Repeat same steps in the previous section to replace the angles in the sprite.



3. Perform the same steps until the sprites of the character are completely replaced.



4. Click the **Add** button under the **Content Manager** to save the custom character.



5. Click the **Back to Stage** button to bring the new character back to the stage.

Note:

If you are a **Pipeline** version user, you may also use the **Validate Multi-angle Setup** panel to quickly replace the media.

- Introduction of Validate Multi-angle Setup Panel
- Using Sprite Tab

Mirroring Symmetrical Body Parts

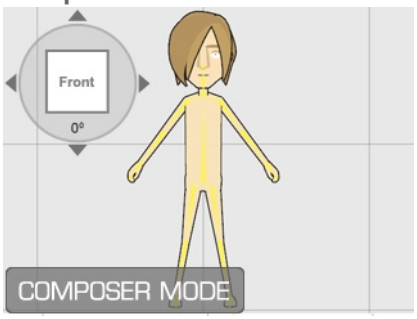
Pro & Pipeline

When you want to create a G2 character, you need to prepare a lot of files to fill up the pose and angle slots within the **Sprite Editor** and the **Angle Table**. However, if the character you want to create has a left and right side that are symmetrical, then you may use the **Mirror** function provided to quickly duplicate the hands and legs between left and right sides without needing to individually replace limbs from both sides.

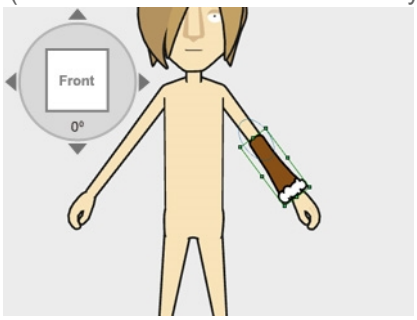
The mirror creation method can be applied to individual body parts or to symmetrical facial features (eyebrows, eyes and ears).

Mirror-creating Single Body Part

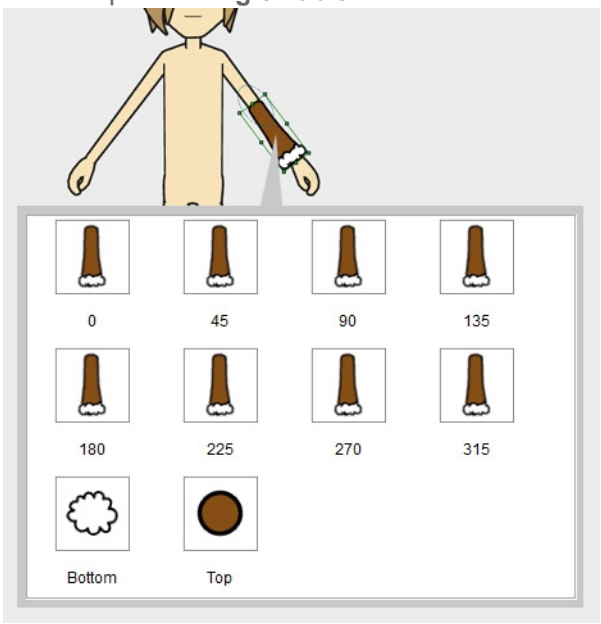
1. Apply a character from the **Actor** >> **Actor Template** >> **G2 Character** >> **Replace Dummy** and enter the **Composer Mode**.



2. Select one of the symmetrical body parts (in this case, the left forearm) and load a prepared file to replace the original one via the **Sprite Editor**.
(Transform the element if necessary)



3. Rotate the character to other angles (45, 90, 135, 180, 225, 270, 315, top, bottom) and insert the prepared files for the body part.
Please open the **Angle Table** to make sure that each angle slot is filled.

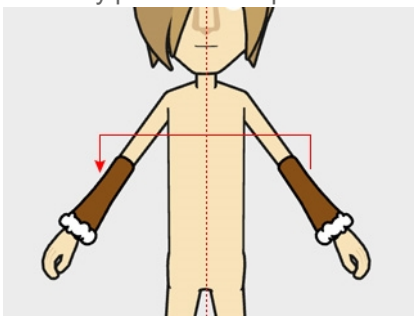


4. Close the **Sprite Editor**.

5. Click on the down arrow button next to the **Mirror** button to show its drop-down menu.
6. Choose the **Mirror Selected Sprite** from the menu.

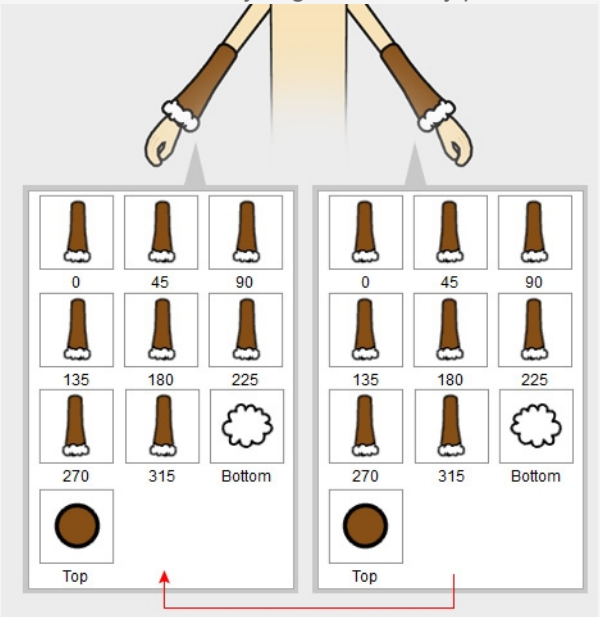


7. The body part will be duplicated and mirror to the sprite on other side of the character.



Note:

- Please note that every angle of the body part will be mirrored as well.

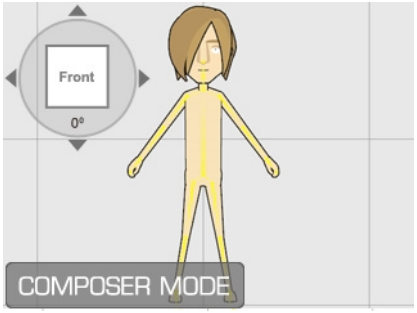


- If the sprites are mirrored while some of the pose or angle slots are left un-filled, the corresponding slots will be empty as well. You may then fill up them and perform the **Mirror** function again.

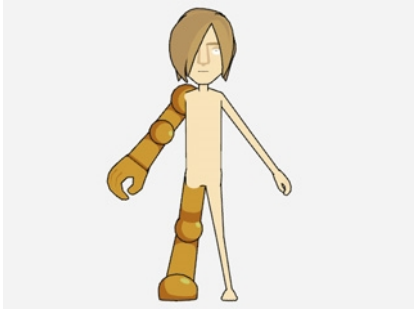
Mirroring Limbs

In addition to mirroring single sprites, you are able to mirror entire character limbs simultaneously.

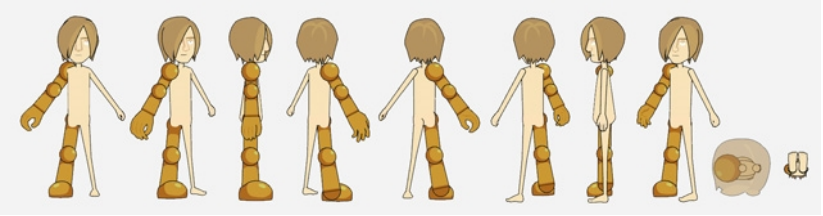
1. Apply a character from the **Actor** >> **Actor Template** >> **G2 Character** >> **Replace Dummy** and enter the **Composer Mode**.



2. Replace the body parts for one side of your character (in this case, the right hand and leg of the character) with prepared files via the **Sprite Editor**.



3. Rotate the character to other angles (45, 90, 135, 180, 225, 270, 315, top and bottom) and insert the prepared files for the limbs of the same side.



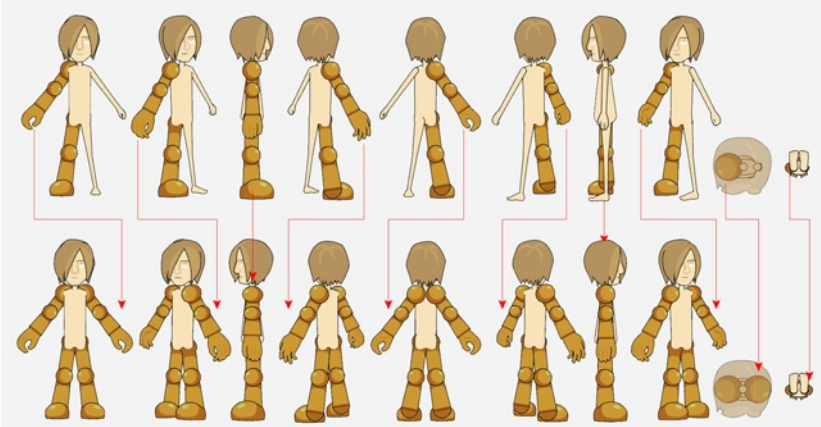
4. Close the **Sprite Editor**.
5. Click on the down arrow button next to the **Mirror** button to show its drop-down menu.
6. Choose the **Mirror to Actor Left** from the menu.



Note:

If you've customized the right limbs of the character, then choose **Mirror to Actor Right** and vice versa.

7. The limbs will be duplicated and mirror to the other side of the character.



Note:

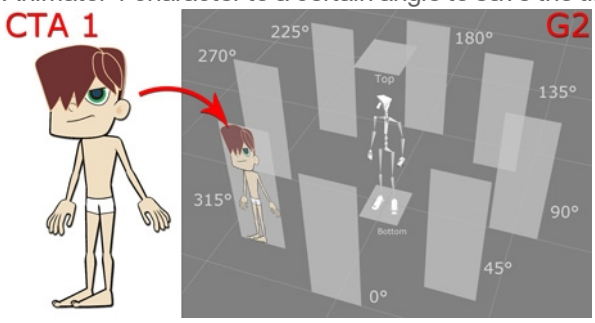
- The data that is mirrored includes:
  - **Transformation of Sprite**
  - **Poses in Sprite**
  - **Individual Transformations of Poses**
  - **Angles of Each Pose**
  - **Individual Transformations of Angles**
  - **The Joint Mask Settings**
  - **The Layer Settings**
- Please note that this mirror method will duplicate and mirror every bilateral sprite including the **Eyebrow**, **Eye**, **Ear**, **Upper Arm**, **Lower Arm**, **Hand**, **Thigh**, **Shank** and **Foot**.
- If the sprites are mirrored while some of the pose or angle slots are left un-filled, the corresponding slots will be empty as well. You may then fill up them and perform the **Mirror** feature again.

Converting CrazyTalk Animator 1 Character to G2 Character

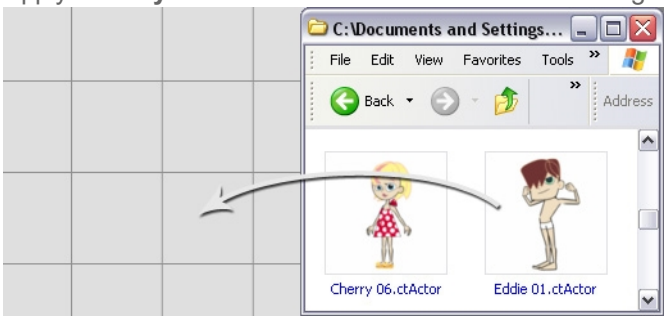
If you have created a character with previous version of **CrazyTalk Animator** and you want to have it perform dimensional motions without any visual imperfection, then you need to convert it into a G2 character.

Step 1: Distributing Elements

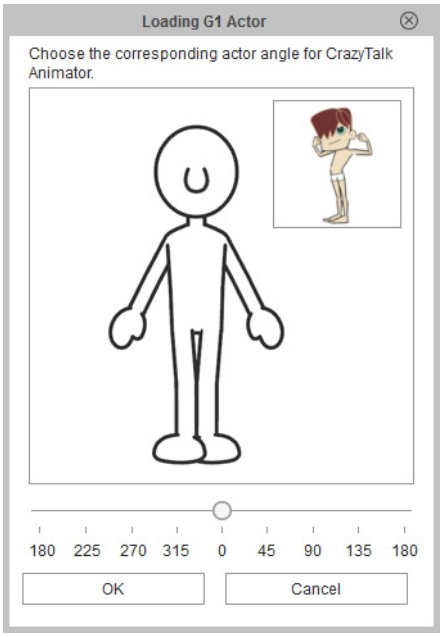
Because each G2 character is composed of sprites in 10 angles, you need to first put the elements of the CrazyTalk Animator 1 character to a certain angle to save the time for replacing the angles one element after another.



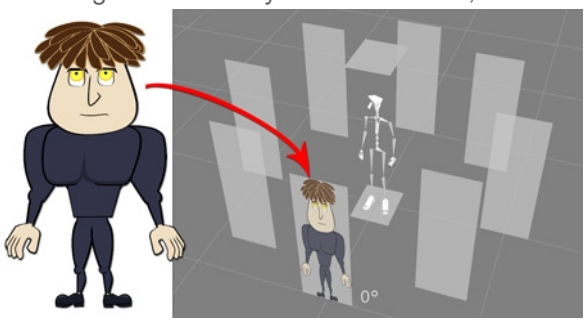
1. Apply a **CrazyTalk Animator 1** character to the working area.



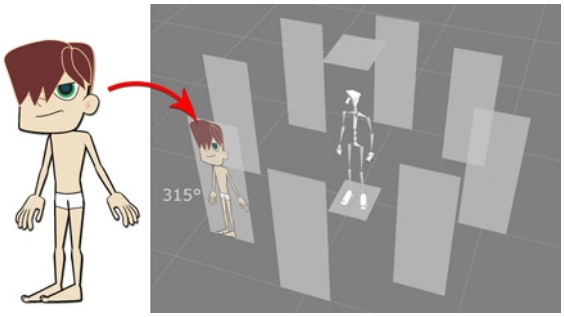
2. You will be asked to distribute the elements from the G1 character's sprites to adequate angles.



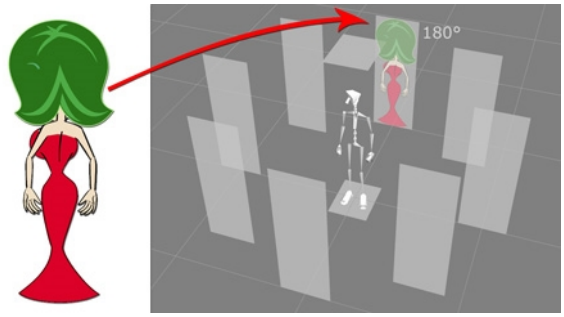
3. According to the look of your G1 character, set the best angle by dragging the slider.



G1 front character: set to 0 degree.



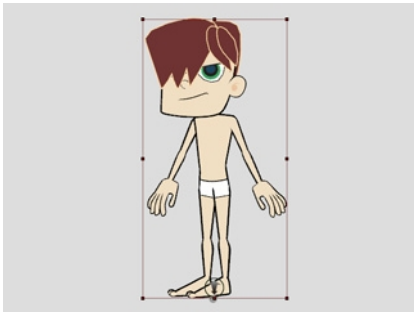
G1 side character: set to 315 degree.



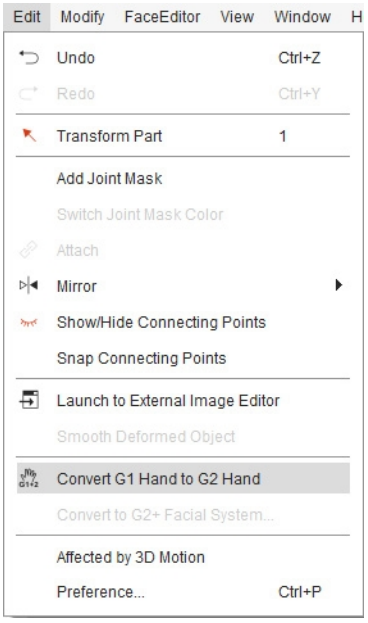
G1 custom character: Corresponding degree according to the appearance.

Step 2: Reorganize the Hands Poses

1. Make sure the character is selected and switch to the **Composer** mode.



2. Execute the **Edit** >> **Convert G1 Hand to G2 Hand** command.



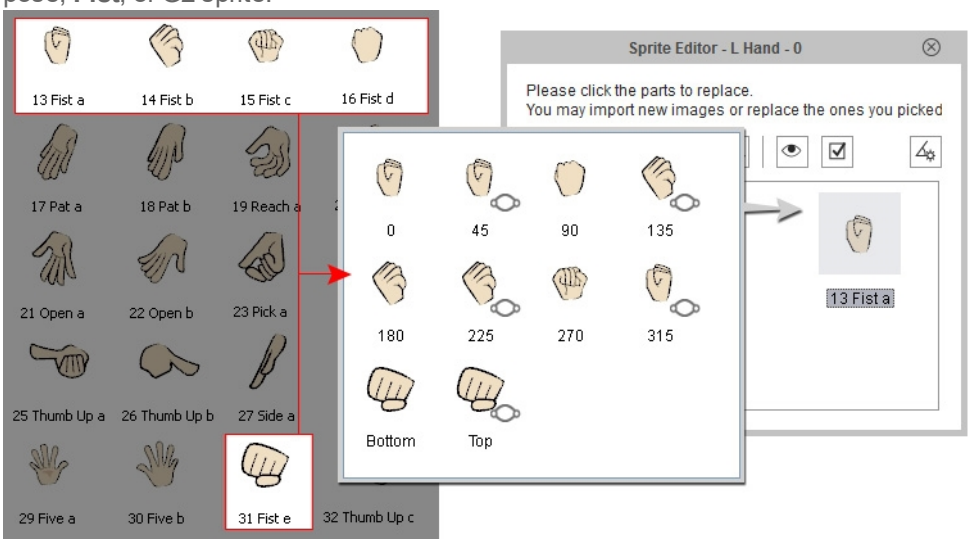
Alternatively, you may enter the **Composer Mode** first and click the **Convert G1 Hand to G2 Hand** button.

3. The hand elements with identical gestures of the G1 character (highlighted with same color) will be converted to angles of one pose.



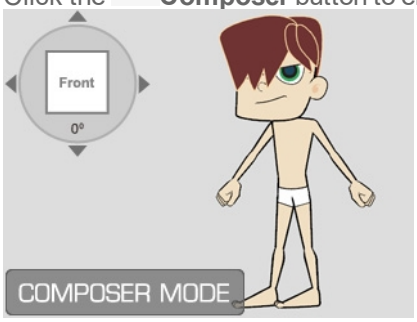
Take the **Fist** as an example, the elements of the fists from G1 sprite will be put together as the angles into the

pose, **Fist**, of G2 sprite.



Step 3: Optimizing the Character Pro & Pipeline

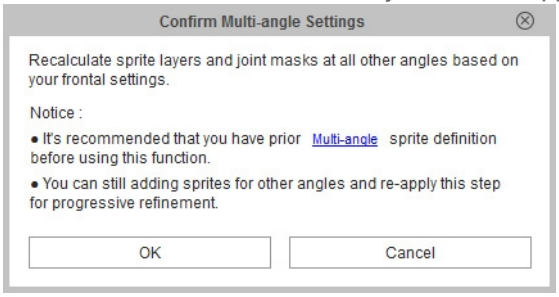
1. Click the **Composer** button to enter composer mode.



2. Click the **Confirm Multi-angle Settings** button on the tool bar.

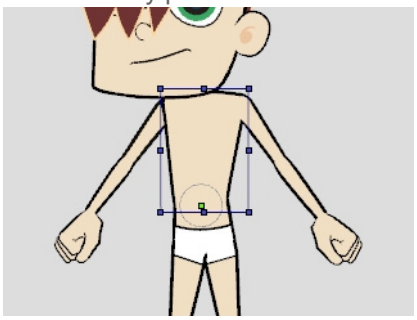


3. You will be informed that some objects will be applied to the character, click **OK** button to start the conversion.



Step 4: Add More Angles to Poses (for Pipeline and Pro Versions Only)

1. Select a body part.



2. Open the **Sprite Editor**.
3. Collaborating the **Sprite Editor** with the **Angle Switch**, add prepared media to different angles of the pose. Please refer to the Creating G2 Character section for more information.
4. The character is now a complete **G2 character** and ready to perform any motion from the library.

Attaching Accessories to a Character

If you wish to attach the accessory to any body part, then you may use the **Attach** feature to do so.

Attach to Body Parts

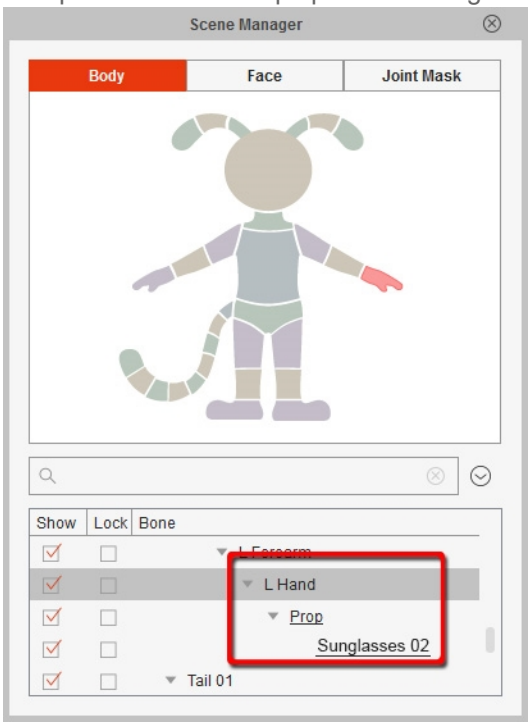
1. In the **Composer**, make sure the accessory is selected and then click the **Attach** button found on the tool bar.



2. Click on the target body part or facial feature, to attach the accessory.



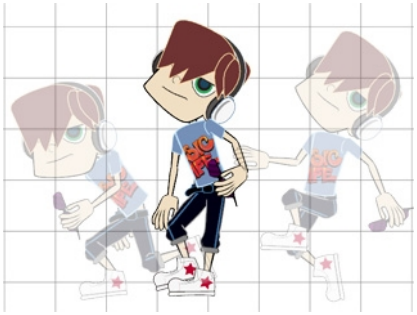
The parent node of this prop is now changed to the body part you assigned.



3. Move, rotate or scale the accessory to the appropriate location or size.



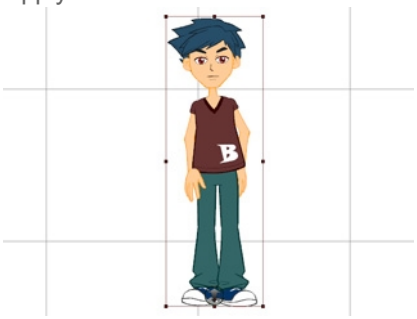
4. Click the **Back to Stage** button to leave the composer mode and update the character.
5. When the character is in motion, the prop will move along with the character.



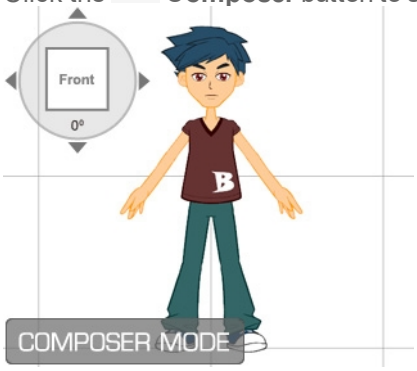
Changing Body Proportion

Each **G1** and **G2** character and its bone structures are by default fixed. However, you are able to use **Actor Proportion** panel to quickly change the appearance of the character.

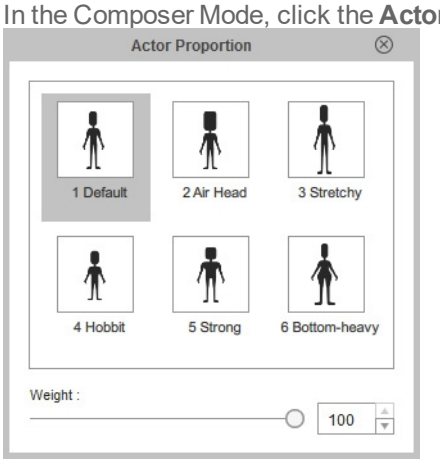
1. Apply a character from the **Actor** >> **Template** library.



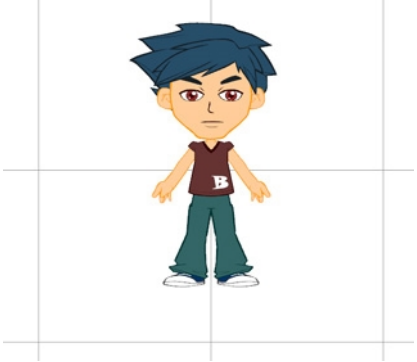
2. Click the **Composer** button to switch to the **Composer Mode**.



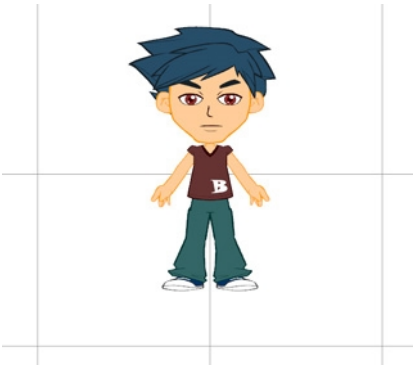
3. In the Composer Mode, click the **Actor Proportion** button to open the panel.



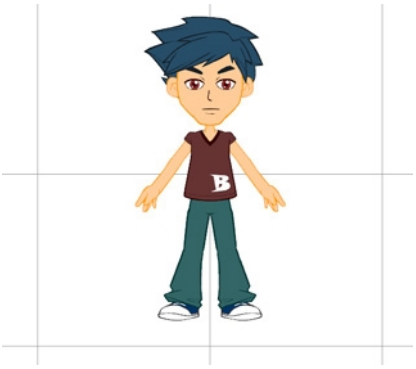
4. Click either one of the presets (in this case, the **4 Hobbit**) in the panel. The character will instantly change the appearance.



5. Drag the **Weight** slider to determine the influence level of the preset to the character.



Weight = 100



Weight = 50

Note:

If you want to further adjust the details for each body parts, then please refer to the Transforming Body Parts section for more information.

Transforming Body Parts

In order to optimize your characters, you may move and scale each body part (the bones of the character). **G1** and **G2** Characters with same parts may easily morph into different ones. Before starting to customize a character, you first need to select a character. Then click the **Composer** button to enter the **Composer Mode**.

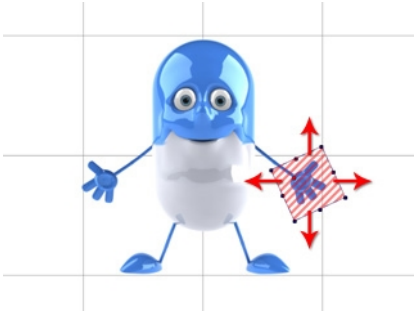
Transforming Body Parts

Characters can look totally different with even a slightly offset or scaled body parts.

1. Click on any body part. A transform handle box will appear around the selected part.



2. Move your cursor to the inside of the box, and drag to relocate the part.



3. You may drag the eight control points around the box to change the size of the part.
   Please note that the four points on the corners will help change the size while maintaining the current ratio.



4. You may rotate to preview results in the **Stage Mode**. The rotation data will not be kept in the **Composer Mode**. The body part will then return to the initial angle once the character is defined.
5. You may use the same method to modify all body parts.



Note:

- Each character pose is fixed in the **Composer Mode**. Therefore, you can only rotate each body part, or facial feature, for previewing.

- If you want to rotate the body parts or facial features, then you must modify all the elements inside of them. For more information please refer to the Transforming Poses in Body Parts section.

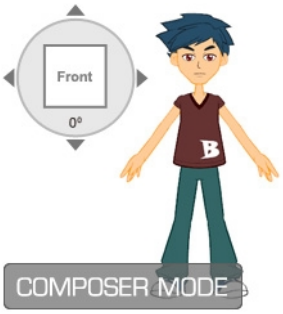
Transforming Poses in Body Parts

Pro & Pipeline

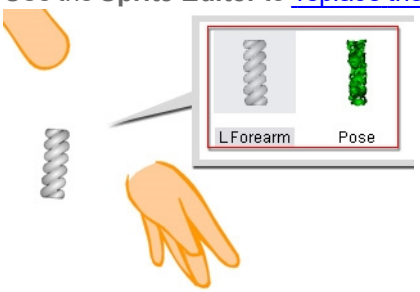
When you wish to Transform Body Parts, you may find that the sprites cannot rotate inside the composer. Also, when you load custom media files into an existing sprite, you might need to further modify the loaded file, in order for it to fit well with the sprite.

Transforming the Poses of a Sprite

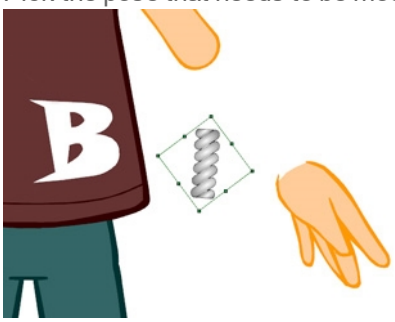
1. Select a **G1** or **G2** character. Click the **Composer** button to switch to the composer mode.



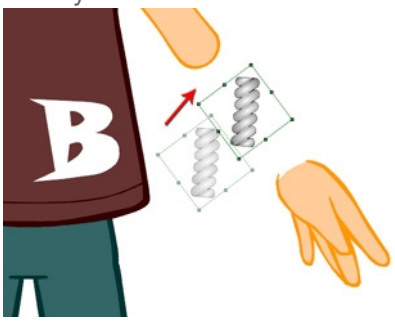
2. Use the **Sprite Editor** to replace the poses or add more poses to the sprite.



3. Pick the pose that needs to be modified.



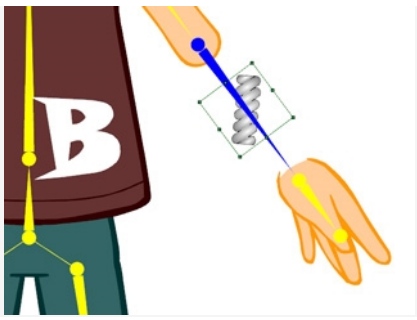
4. Move your cursor to the inside of the box to drag and moving the pose.



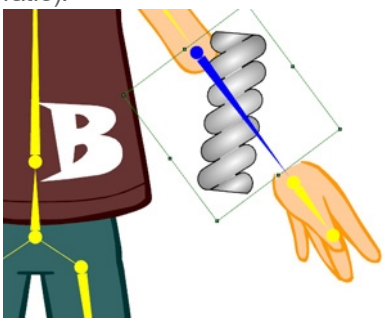
Note:

Activate the **Show Bone** box for better aligning the poses.

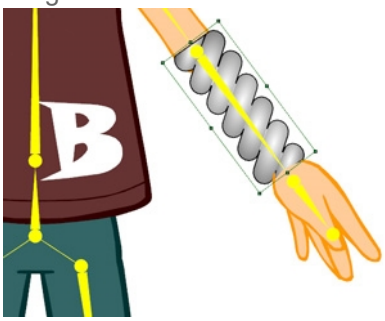




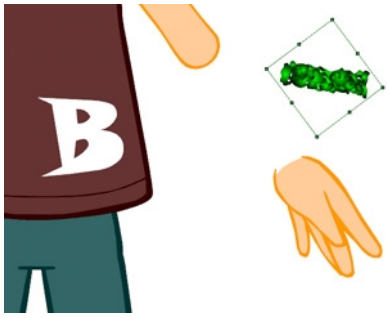
5. Drag the eight control points around the box in order to change the size of the pose (the corner ones keep the ratio).



6. Drag the area outside the box to rotate the pose.



7. Repeat the same steps to the other poses listed in the **Sprite Editor**.



Pick another pose in the sprite.



Transform the pose to an ideal appearance.

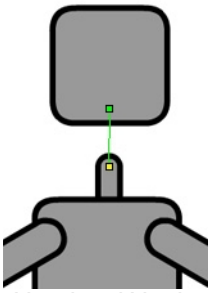
Note:

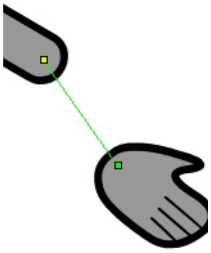
- To make the same modifications to the poses within another sprite, simply pick another sprites without closing the **Sprite Editor**.
- Please take note that each body part is called a "sprite". Refer to the sections below for more information:
  - Sprite Concept
  - Preparing a Custom Sprite

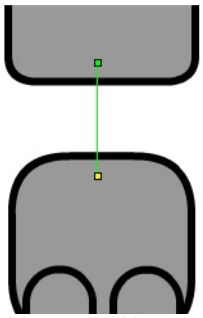
Setting Connection Points

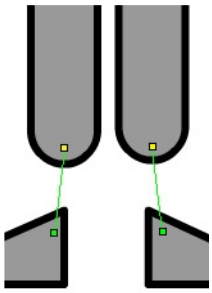
In order to let your new custom characters keep the simple, change-and-snap compatibility when switching body parts (**Head**, **Hands**, **Upper Body**, **Lower Body** and **Feet**); here is a guide for you to properly define all connecting points on body parts.

The connection points for body parts are described in the illustration below:


Head and Neck


Forearms and Hands


Upper and Lower Bodies


Shanks and Feet

- Body parts with green points are child nodes, while the ones with yellow points are parent nodes.
- Positions of the green and yellow points are kept individually by the child and parent nodes.
- Body parts with green points will be aligned to body parts with yellow points.

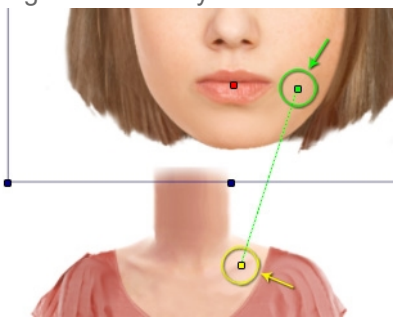
Setting the Connection Points

Follow the steps below (head and neck connection points as examples) to set the connection points.

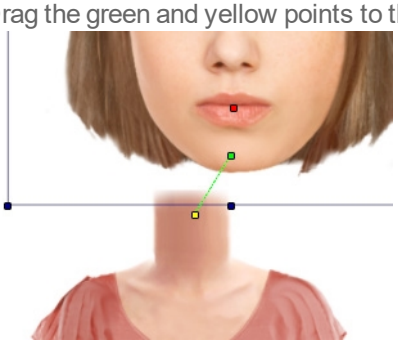
1. Select a character.



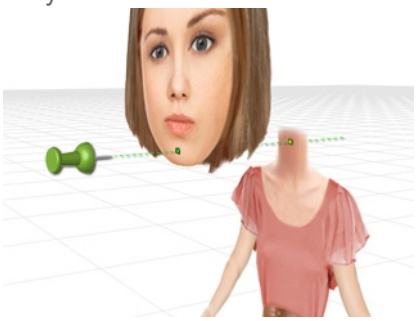
2. Click the  **Composer** button to enter the **Composer Mode**.
3. Make sure the connecting points are displayed by clicking the **Edit** >> **Show / Hide Connecting Points**.
4. Drag the head away. You will now see a green point and a yellow point.



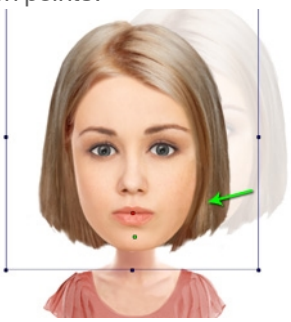
5. Drag the green and yellow points to the desired position of the body part.



6. The connection points will be set to the head and the neck. The position points will be kept by the head and the body.

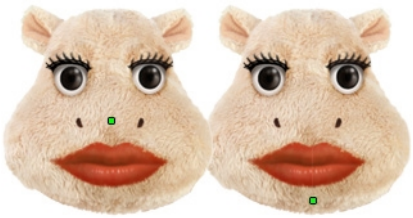


7. Click the **Edit** >> **Snap Connecting Points** command to align the two body parts together with the two connection points.

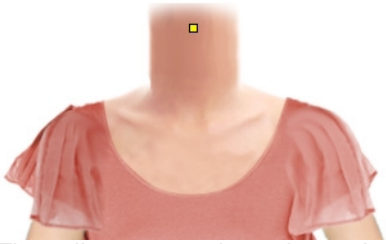


Replacing Body Parts

When you replace a new body part on characters, **CrazyTalk Animator** aligns the body part to its parent by snapping the green point to the yellow point on the parent.



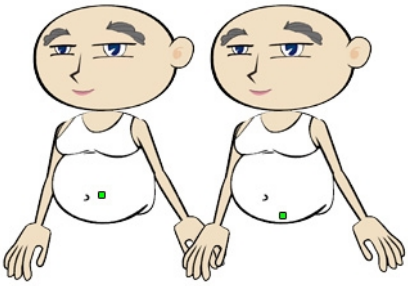
The green connection points on two heads



The yellow connection point on the neck



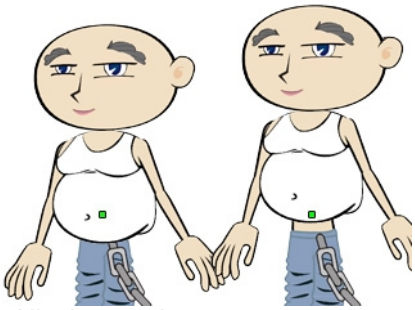
Aligning results



The green connection points on upper torsos



The yellow connection point on the lower torso



Aligning results

Modifying Joints with Joint Masks

The joints of two connected body parts have certain layer order by default because of the angles of the character and its body parts.

However, there might be some visual imperfections generated by the layer order at the joints of the character.



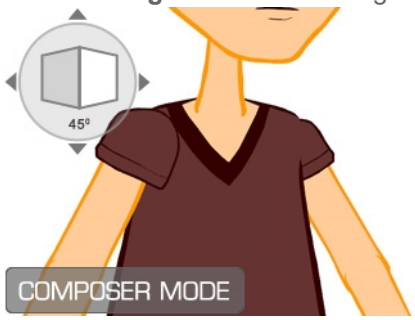
The character in zero degree.



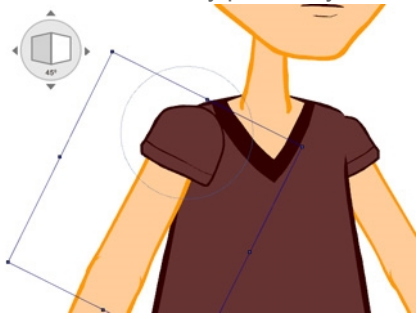
The character in 45 degree, which causes the shoulder joint display a visual flaw.

You may need to use the **Joint Masks** to modify it.

1. Apply a character, select it and click the **Composer** button to enter the **Composer Mode**.
2. Click the **Angle Switch** to an angle when the flaws show around the joint area.



3. Pick the child body part and you will see a circle shows around the joint, it is the **Joint Mask**.

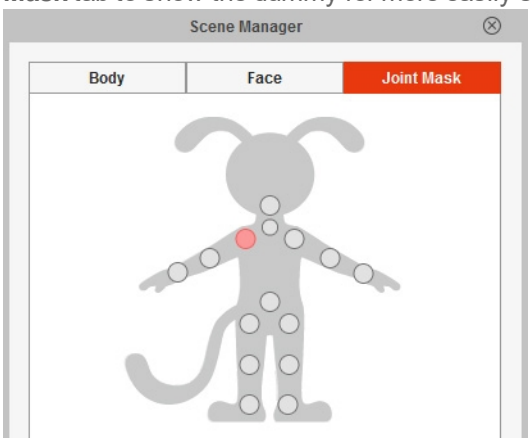


Note:

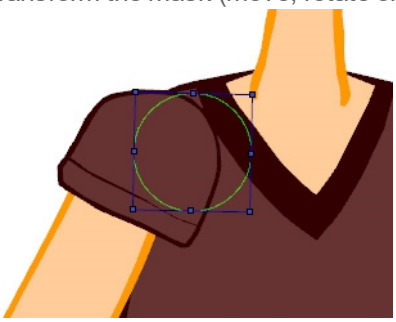
- If the joint mask does not show, then click the **Edit** >> **Add Joint Mask** command to add one.
- Click the **Edit** >> **Switch Joint Mask Color** command to circularly change the color of the mask color.



4. Click on the circle to select the mask. Alternatively, you may open the **Scene Manager** (**F5**) and switch to the **Joint Mask** tab to show the dummy for more easily select the masks.



5. Transform the mask (move, rotate or scale) to the area where you want to apply the mask effect to.



6. Click on the child body part again.
7. Click the **Sent to Front** or **Sent to Back** buttons on the **Properties Toolbar** to change the layer order of the body part.



8. Click the **Back to Stage** button to return to the stage.

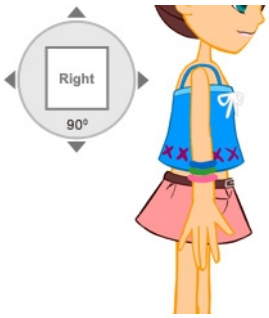
Note:

- Please note that the change of the layer order can only be seen **within the joint mask**.
- If you remove the mask and click the layer order buttons, then you will not see any influence.

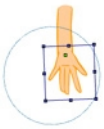
Setting and Examining Body Parts - Validate Multi-angle Setup

Pro & Pipeline

CrazyTalk Animator provides **Validate Multi-angle Setup** feature for you to focus on two body parts, the parent and the child ones, in order to examine the **Bone**, **Sprite** and **Joint Masks** relations between them.



In the right view, the left upper arm, fore-arm and hand are covered by the body, which makes it hard to modify them on the working area.

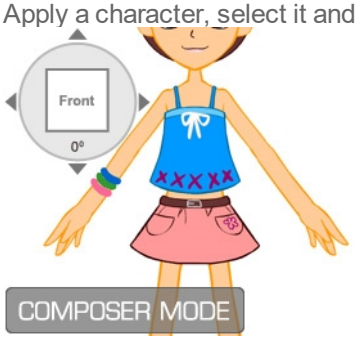


When the **Validate Multi-angle Setup** panel is opened, the working area shows only the selected body part and its parent one (in this case, the left hand and the forearm) while the other body parts are temporarily hidden.

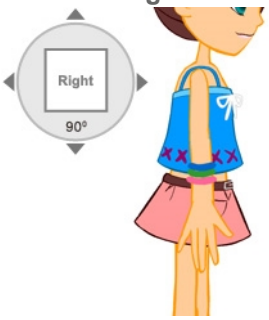
*Please note that this feature is for the **Pipeline** version only.

Open Validate Multi-angle Setup Panel

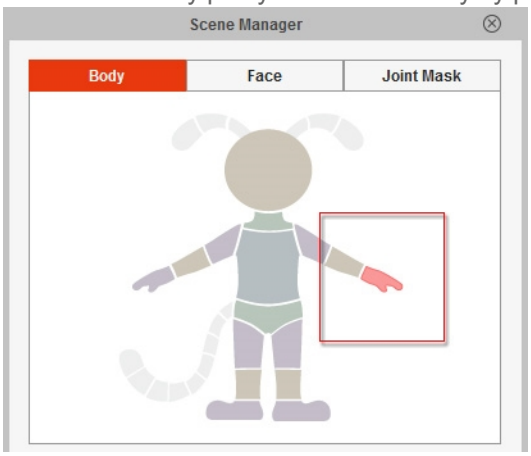
1. Apply a character, select it and click the **Composer** button to enter the **Composer Mode**.



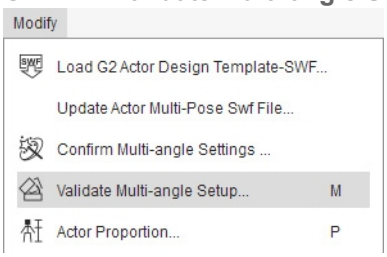
2. Click the **Angle Switch** to an angle when some body parts are covered by the other ones.



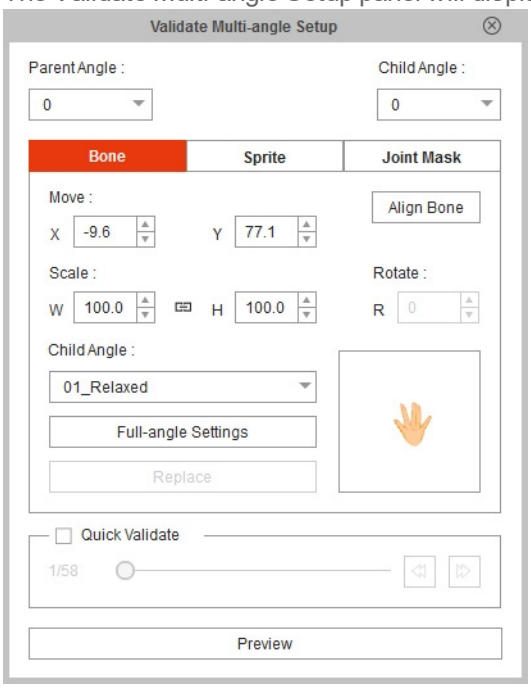
3. Click on the body part you want to modify by picking the area of the dummy in the **Scene Manager** (**F5**) panel.



4. Click the **Validate Multi-angle Setup** button.



5. The Validate Multi-angle Setup panel will display.



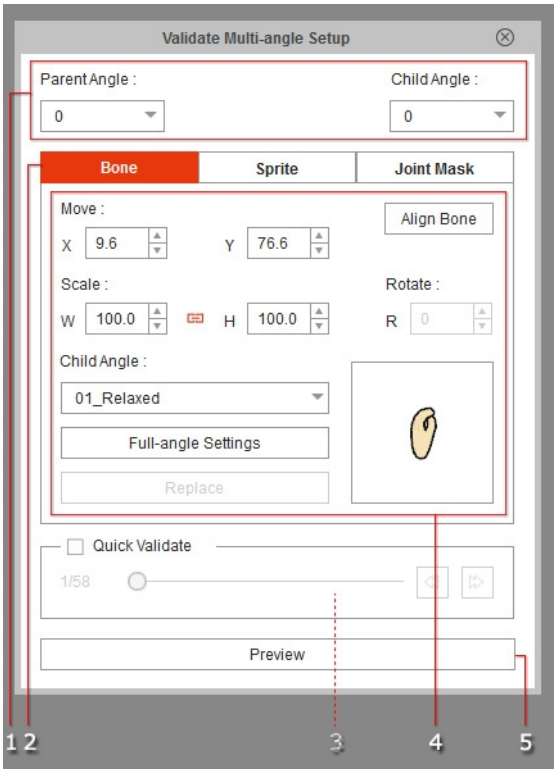
Note:

Please also refer to the sections below for more information.

- Introduction of Validate Multi-angle Setup Panel
- Viewing Angle Combinations of Parent-Child Body Parts
- Using the Bone Tab
- Using the Sprite Tab
- Using the Joint Mask Tab

Introduction of Validate Multi-angle Setup Panel

Pro & Pipeline



1. Angle Combination Controls
Use these two drop down lists to determine the individual angles of the parent and child body parts.
Please refer to the Viewing Angle Combinations of Parent-Child Body Parts section for more information.

2. Mode Tabs
Click the tab to switch to different tab for modifying the **Bone**, **Sprite** and **Joint Mask** of the **CHILD** (selected) body part.

3. Preview Quick Validate
Activate the box so that you may examine the rational angle-combinations of the parent-child body parts by clicking the buttons or by dragging the 2/58 slider.
Please refer to the Viewing Angle Combinations of Parent-Child Body Parts section for more information.

4. Controls in Tab
In the pane, you will see different controls in accordance with the mode tab you choose for modifying the transformation, the sprite, or the joint mask of the select body part. Please refer to the sections below for more information:

- Using the Bone Tab
- Using the Sprite Tab
- Using the Joint Mask Tab

5. Bone Rotate Preview
Click this button for quickly observing the rotating result of the selected body part.

Viewing Angle Combinations of Parent-Child Body Parts

Pro & Pipeline

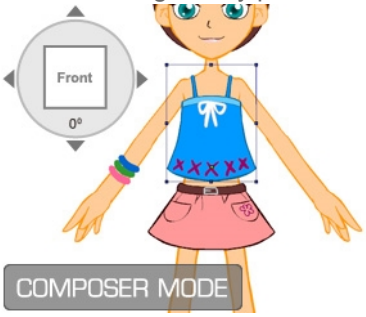
When the **Validate Multi-angle Setup** panel shows, only the **Parent-Child** body parts show on the working area for further editing. However, since each body part pose contains 10 angles (for G2 character), it is not easy for you to observe the angle combinations of the parent and child body parts in the working area by merely using the **Angle Switch**.

With the **Validate Multi-angle Setup** panel, you can easily determine the angle combinations of the parent and child body parts for better observation and further modification.

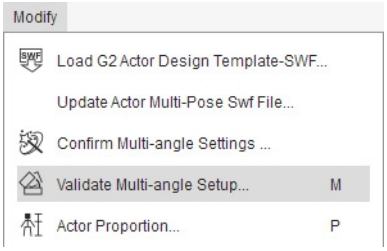
Manually Determine Angle Combinations

By using the **Parent Angle** and **Child Angle** drop down lists, you are able to determine the ideal angle combination for observation or editing.

1. Select the target body part in the **Composer Mode**.



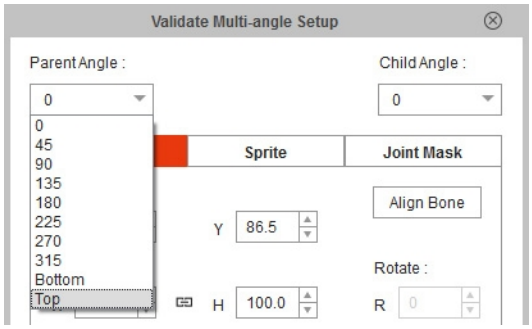
2. Click the **Validate Multi-angle Setup** button.



3. You will find that there are only the selected body part and its parent one show in the working area (the rest ones are temporarily hidden).



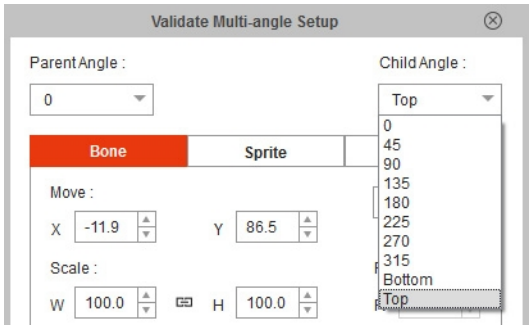
4. Open the **Parent Angle** drop-down list to select a specific angle (in this case, **Top**) for the parent body part.

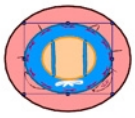




The parent body part will immediately turn to the specified angle.

5. Open the **Child Angle** drop-down list to select a specific angle (in this case, **Top**) for the child (selected) body part. You will see in the working area that the two body parts form a new angle combination by their own angle.

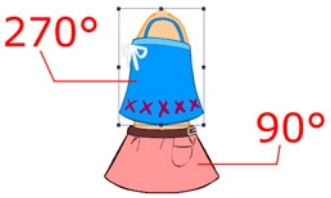




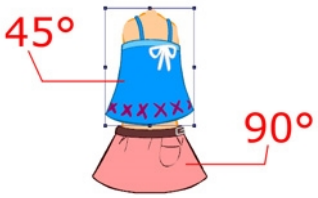
The child body part will immediately turn to the specified angle.

Using Quick Validate Controls

By using the **Quick Validate** controls, you can quickly choose a **pre-defined** and **logical** angle combination because some angle combinations can never appear for a real human. Editing the body parts, sprites or the joint masks under these combinations will be useless and wasting of time. **Quick Validate** feature filters out the illogical combinations to avoid from vainly editing.

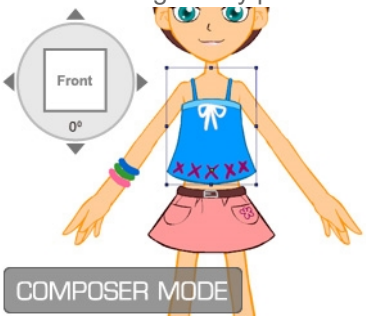


Illogical angle combination

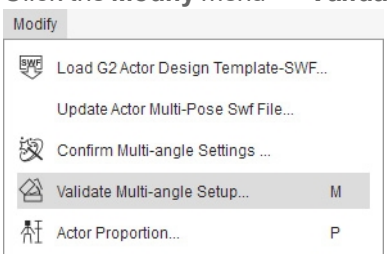


Logical angle combination

1. Select the target body part in the **Composer Mode**.



2. Click the **Modify** menu >> **Validate Multi-angle Setup** command.

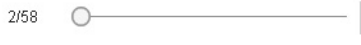


3. You will find that there are only the selected body part and its parent one showing in the working area (the rest ones are temporarily hidden).



4. Activate the **Quick Validate** box to enable the controls.



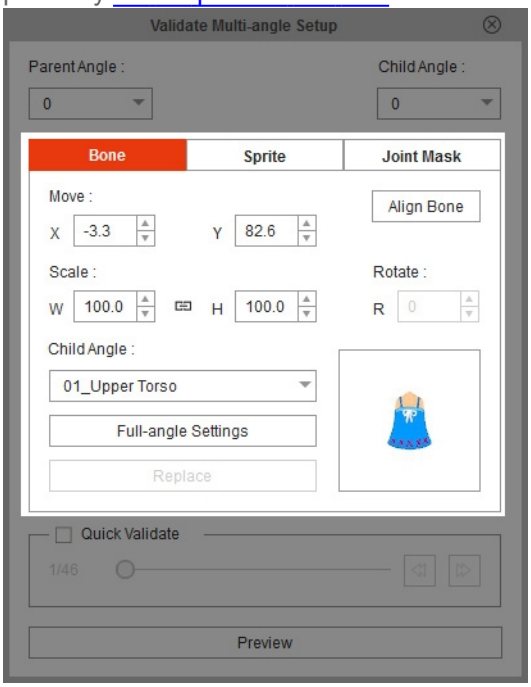
Click the **Previous**/**Next** buttons or the 

slider to switch to the previous or next angle combination of the body parts.

Using Bone Tab

Pro & Pipeline

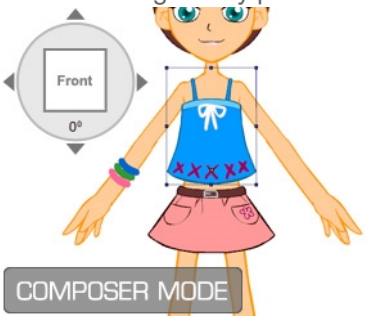
In the **Validate Multi-angle Setup** panel, the chosen tab, by default, is the **Bone** tab. You can use the controls in the tab to precisely set the position and size of the bones with only the parent-child body parts shown on the working area.



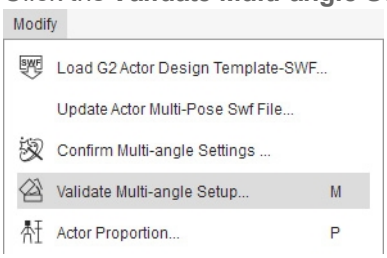
Transforming Selected Body Part (Bone)

In the **Bone** tab of the **Validate Multi-angle Setup** panel, you can precisely set the values for transforming the selected bone, which also change the sprite that stuck on the bone.

1. Select the target body part in the **Composer Mode**.



2. Click the **Validate Multi-angle Setup** button.

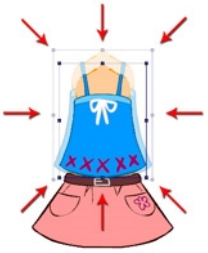


3. Switch to the **Bone** tab.
4. Set a desired angle combination of the body parts.

5. Adjust the position and size of the bone of the child (selected) body part on the working area.



Drag the body part to re-locate the bone.

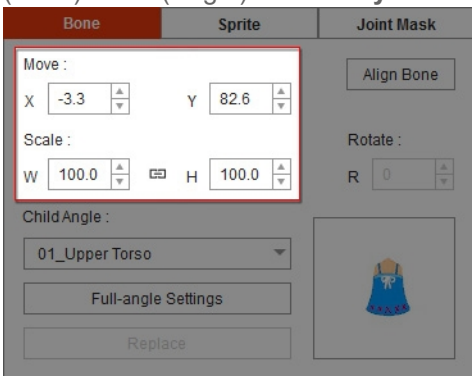


Drag the control points to resize the bone.

Note:

- The body part will be highlighted in **Blue**.
- You may adjust the bone position by dragging the body part.
- If you want to adjust the size of the bone, then drag the eight control points on the side of the bounding box (the 4 corner ones are used for resizing in ratio).

6. If you want to have a precise values for the position and size of the bone, then adjust the values of the **X**, **Y**, **W** (width) and **H** (height) in the **Body** tab.



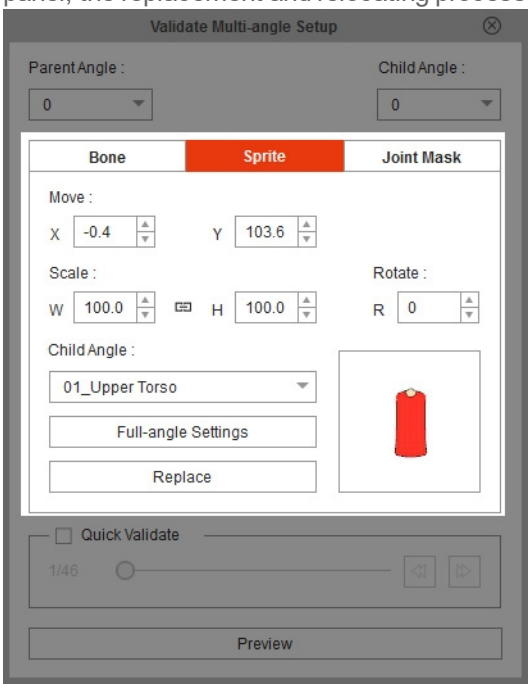
Note:

- Press down the **Keep Ratio** button for resizing in current ratio.
- You can not set the rotation value of the child (selected) bone.
- In addition to the **Move** and **Size** controls in this tab, there are some other controls. However, it is not necessary to use them because they are to be used in the **Sprite** tab.

Using Sprite Tab

Pro & Pipeline

In theory, you are able to use the **Sprite Editor** and the **Angle Switch** in the working area to add, replace or transform the **Angle** media for a **Pose** of a selected body part. However, by using the **Sprite** tab in the **Validate Multi-angle Setup** panel, the replacement and relocating process can be much more efficient.

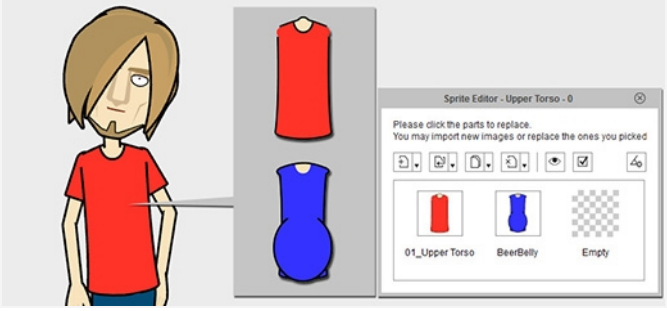


Selecting Poses and Transforming Angles

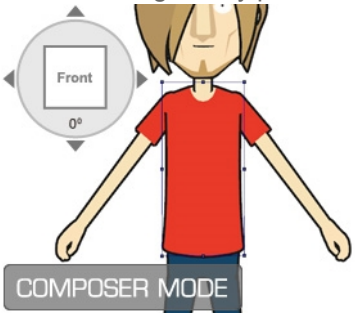
The **Sprite** tab provides controls for easily selecting poses and transforming angles in the sprite of the child (selected) body part.

Note:

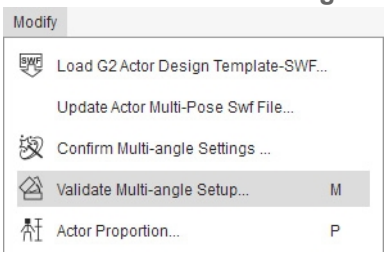
To use the pose-selecting feature, make sure the sprite of a body part has been given multiple poses by using the **Sprite Editor** because **Validate Multi-angle Setup** panel does not provide features for adding a new one.



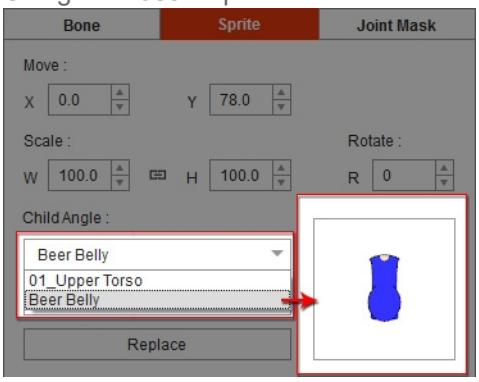
1. Select the target body part in the **Composer Mode**.



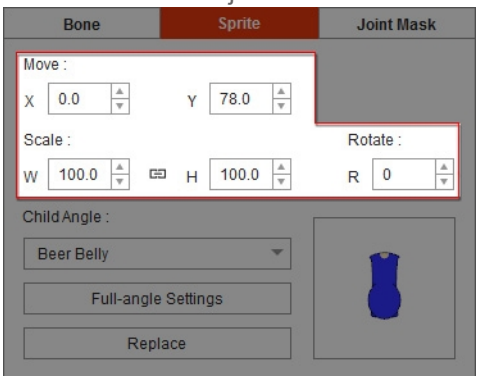
2. Click the **Validate Multi-angle Setup** button.



3. Switch to the **Sprite** tab.
4. Using the **Pose** drop-down list to select the desired pose for editing.

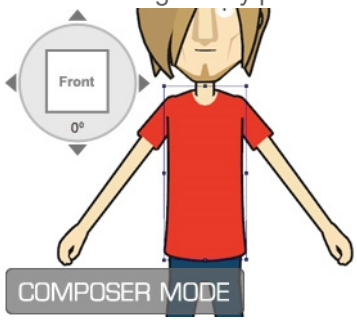


5. Set the values to adjust the transformation data (translation, rotation, scale) of the angle.

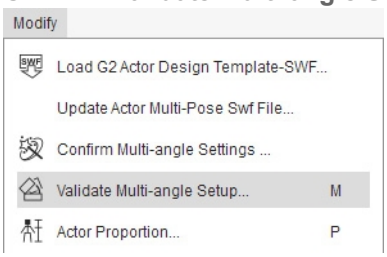


Replacing Angle

1. Select the target body part in the **Composer Mode**.



2. Click the **Validate Multi-angle Setup** button.



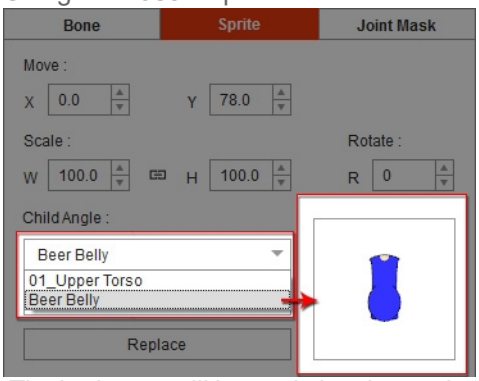
Only the selected body part and its parent will be display in the working area.



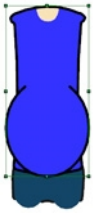
3. Switch to the **Sprite** tab and the bounding box will turn to be **Green**, which means you are in the sprite mode and the coming editing will be focused on the sprite.



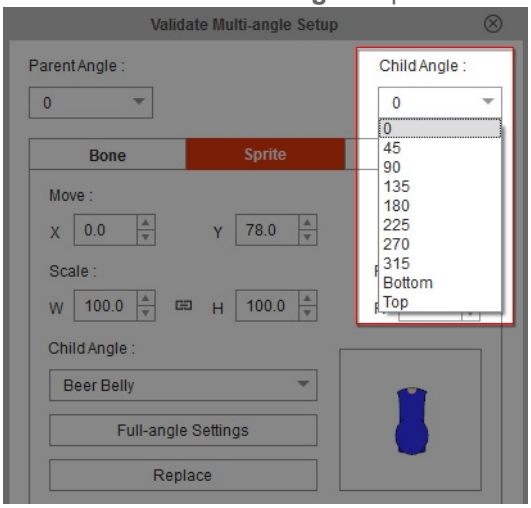
4. Using the **Pose** drop-down list to select the desired pose for editing.



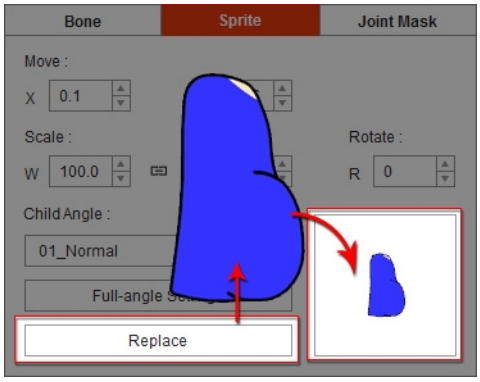
The body part will instantly be changed to the other pose.



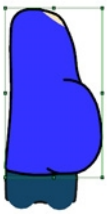
5. Choose from the **Child Angle** drop-down list to turn the body part to a specific angle.



6. Click the **Replace** button and load one of the prepared media to replace the original one.



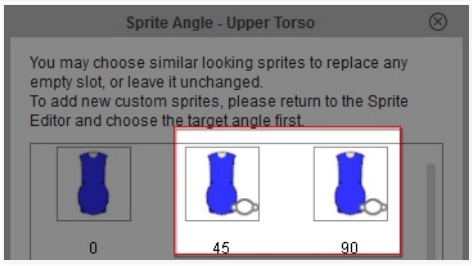
Click the **Replace** button to load one of the prepared media.



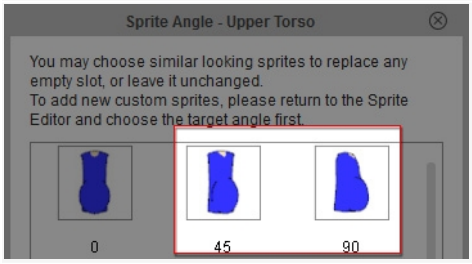
The angle is then changed to a prepared one.

Note:

You may click the **Full-angle Settings** button to show the media of the pose to check the replacing result.



Before replacement.

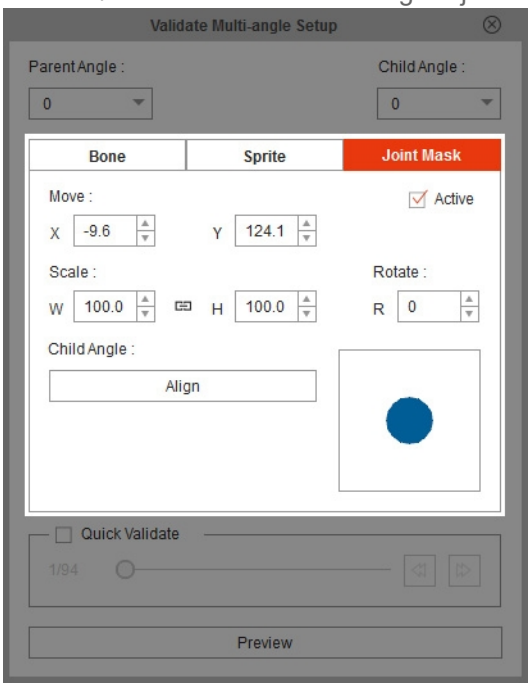


After replacement (the angles of 45 and 90 degree are replaced)

Using Joint Mask Tab

Pro & Pipeline

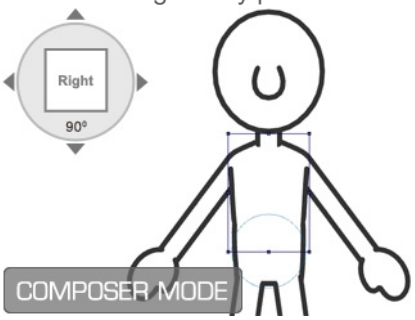
In addition to add or edit joint mask in the working area with related tools, you can also use the **Multi-angle Setup** panel to activate / deactivate or transforming the joint masks of the child (selected) body part under different angle of its parent.



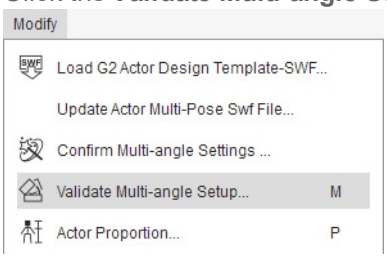
Activate / Deactivate Joint Mask

In order to downsizing the character, you are able to quickly remove unnecessary joint masks under certain parent angles by using the **Validate Multi-angle Setup** panel.

1. Select the target body part in the **Composer Mode**.

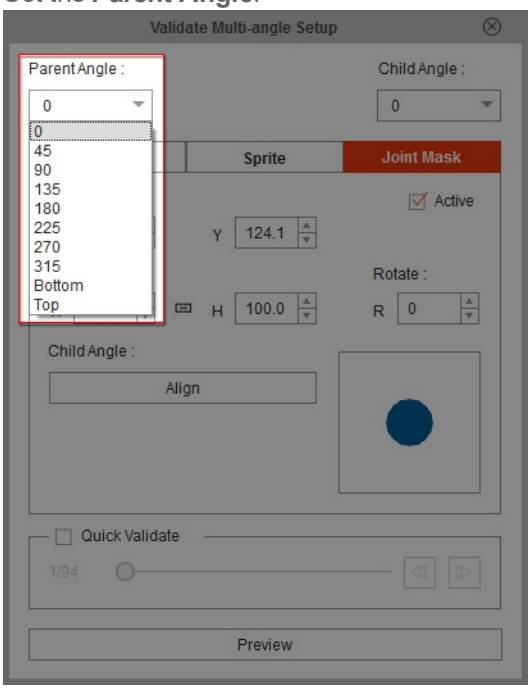


2. Click the **Validate Multi-angle Setup** button.

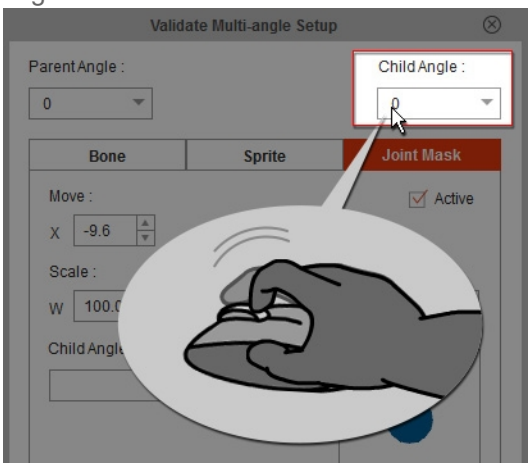


3. Switch to the **Joint Mask** tab.

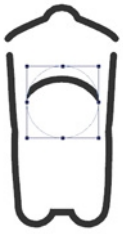
4. Set the **Parent Angle**.



5. Hover your cursor on the **Child Angle** drop down list and roll your mouse wheel to quickly change to different angles.



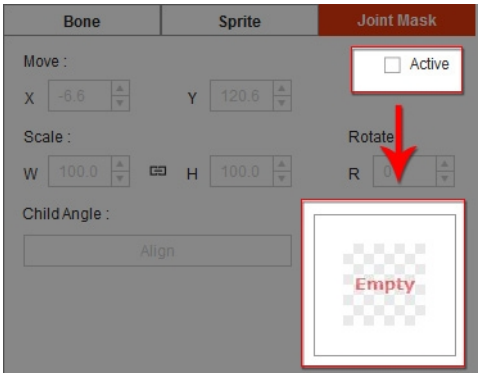
6. Also click the Preview **Bone Rotate Preview** button to auto-rotate the bone counterclockwise.
7. Observe the joint area to view if there is any connecting visual flaw.
   - If there is one or more flaws, then leave the joint mask untouched for adjusting the joint flaws after close the **Validate Multi-angle Setup** panel.



   - If there is no any flaw, then deactivate the **Active** box to remove the joint mask under current parent angle.



There is no any flaws at the elbow area when every **Child Angles** are examined once.



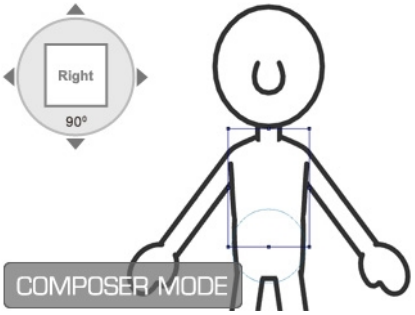
Deactivate the **Active** box because the joint mask is not necessary.

8. Repeat from step 4 to 7 until the joint masks under each **Parent Angle** have been reviewed.

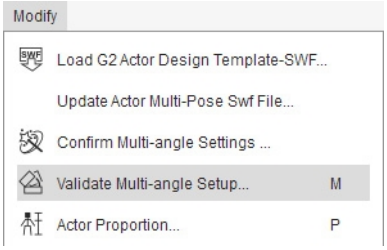
Transforming Joint Mask of Child (selected) Body Part

In the **Bone** tab of the **Validate Multi-angle Setup** panel, you can precisely set the values for transforming the selected bone, which also change the sprite that stuck on the bone.

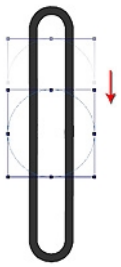
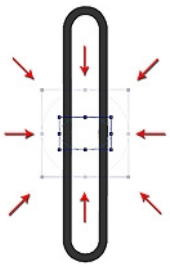
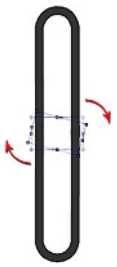
1. Select the target body part in the **Composer Mode**.



2. Click the **Validate Multi-angle Setup** button.



3. Switch to the **Joint Mask** tab.
4. Set a desired angle combination of the body parts.
5. Transform (**Move**, **Scale**, **Rotate**) the joint mask of the child (selected) body part on the working area.

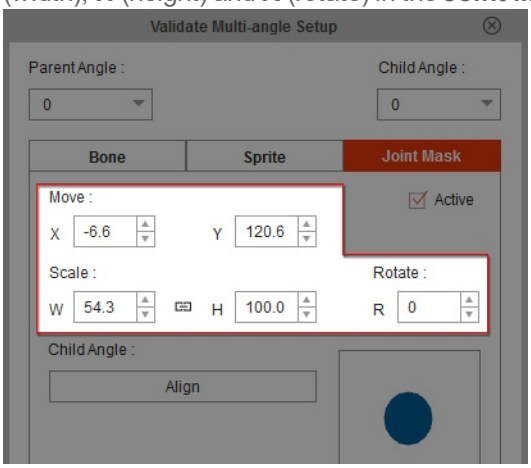
Drag, scale or rotate the joint mask.

Note:

- You may adjust the joint mask position by dragging it.

- If you want to adjust the size of the joint mask, then drag the eight control points on the side of the bounding box (the 4 corner ones are used for resizing in ratio).

6. If you want to have a precise values for the transformation of the joint mask, then adjust the values of the **X**, **Y**, **W** (width), **H** (height) and **R** (rotate) in the **Joint Mask** tab.



Note:

- Press down the **Keep Ratio** button for resizing in current ratio.

Modifying the Texture of Body Parts

Pro & Pipeline

If you want to change the texture of any element in a sprite, then you need to enter the **Composer Mode**.

For **Image-based** elements, you can use any **External Image Editor** for editing.

If you want to modify the mask of an element, then please refer to the Editing the Background Mask section for more information.

Editing Textures of Image-based Elements

If you want to use an external image editor to modify an image-based element, then follow the steps below:

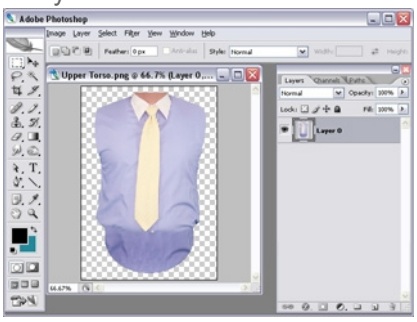
1. Pick a character in the **Stage Mode**. Click the **Composer** button to switch to the composer mode.



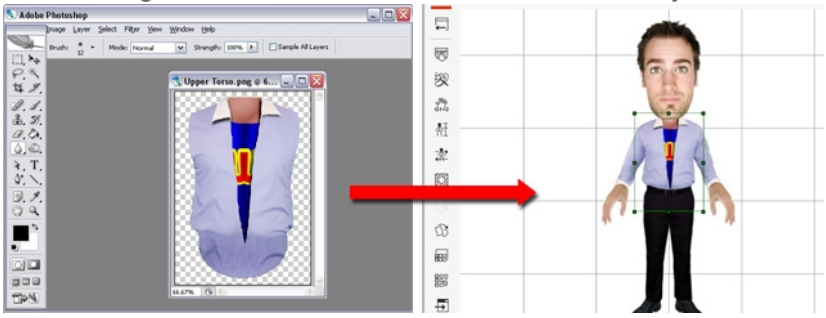
2. Select one of the body parts and then click the **Launch External Image Editor** button.



3. **CrazyTalk Animator** will then launch your specified image editor (e.g. Photoshop) with the texture opened in it ready for advanced modifications.



4. Edit the image and save. The data will then be automatically transferred into **CrazyTalk Animator**.



5. Click the **Back to Stage** button to update the character in the **Stage Mode**.



Note:

- Only image-based elements may be modified with an external image editor. If the element is video or SWF-based, then the **Launch External Image Editor** button will be disabled.

Editing the Body Background Mask

The background mask hides all unnecessary areas of the loaded photo. This helps you keeping only the areas you are interested in, such as the character's upper body.



Original upper body image

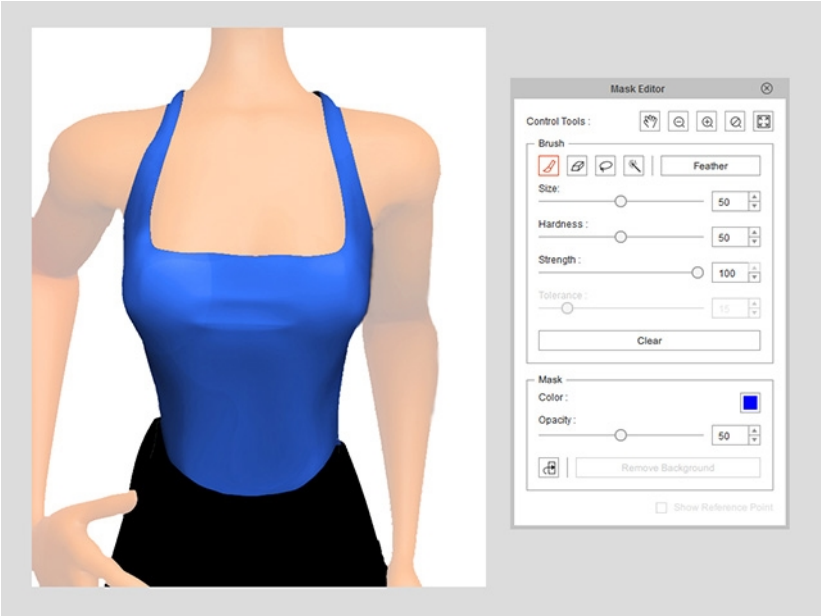


Masked upper body image

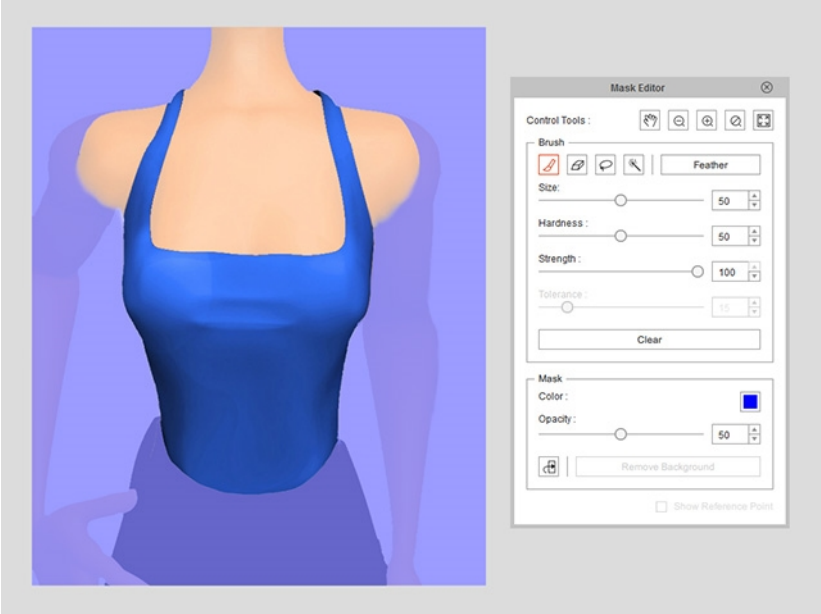
There are two methods to generate a background mask for your image.

Using Mask Editor Panel

1. Make sure you are in the composer mode.
2. Click the **Mask Editor** button at the tool bar to access the **Mask Editor** panel.



3. Using the tools in the panel to paint on the unnecessary parts in the image to add mask on the image.

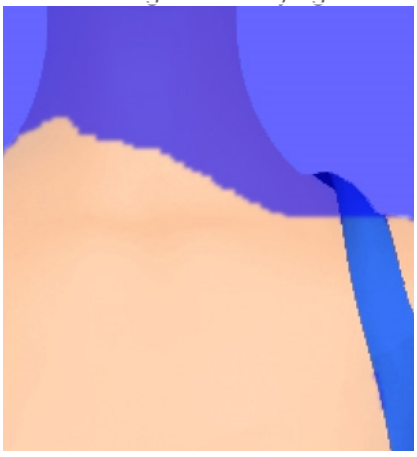


4. Click the **OK** button and the colored area of the image will be filtered out.

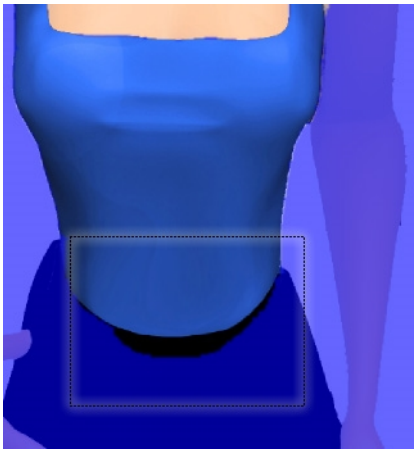
Zoom Tools in Mask Editor

- **Pan Tool**: After you zoom in the image, you may press down this button and drag the image in order to pan to the desired area for modifying.
- **Zoom Out**: Click this button to zoom out the image for observing more of the image.
- **Zoom In**: Click this button to zoom in the image for better observing and modifying the details.

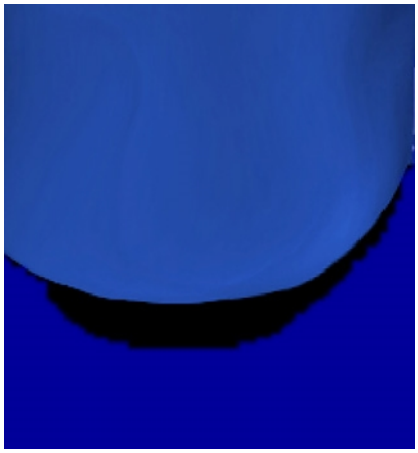

Before zoom in


Zoom in for more easily modifying the details

- **Actual Size**: Click this button so the image will be shown in its original resolution.
- **Fit to Window**: Click this button so that the image will be zoom in or zoom out in order to just fit into the preview window.
- **Magnify Tool**: Press down this button and drag a rectangle around the desired area of the image in order to zoom in to the area for better observing and modifying the details.



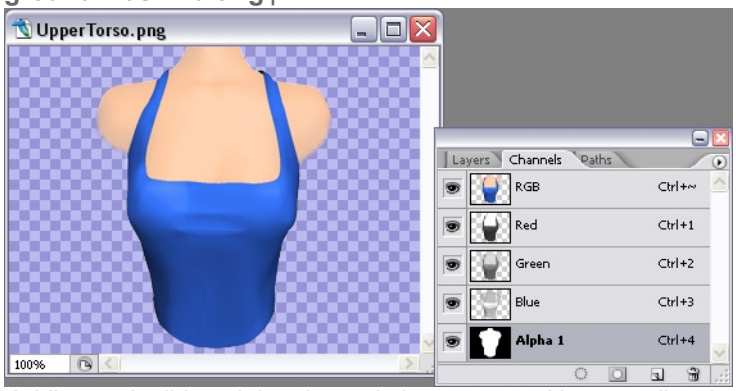
Drag a rectangle to surround the desired area



Zoom in for more easily modifying the details

Loading an Image with a Predefined Alpha Channel

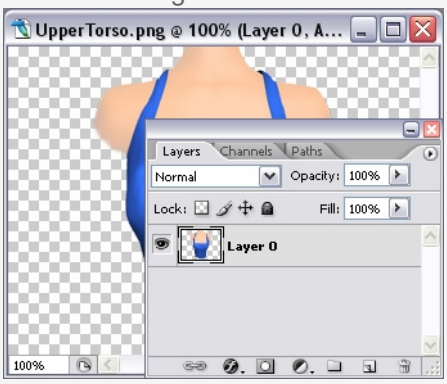
If you wish to perfect your image mask, then you may pre-save your image with a pre-defined alpha channel. This can be done by means of an external image editor. Once you create your mask outside, simply load the image into **CrazyTalk Animator**. The alpha channel information will automatically be applied as the background mask in the **Background Mask Editing** panel.



Adding and editing alpha channels in an external image editor (e.g. Photoshop)

Note:

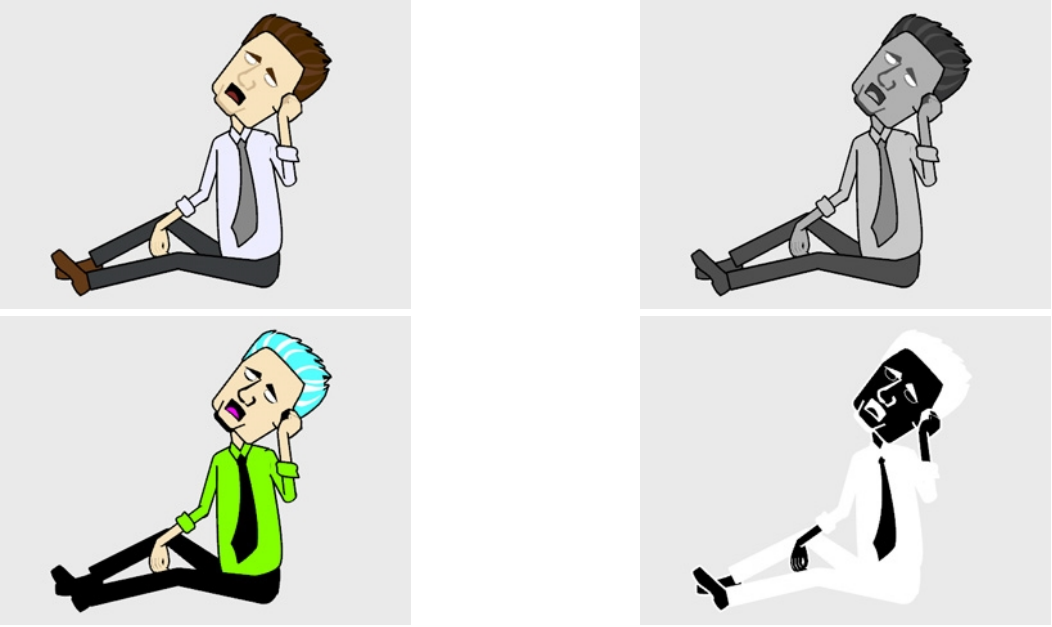
- The alpha channel information can be in 32-bit BMP, TGA or PNG format.
- If you wish to save the source image as PNG file, then remove the background layer, erase any unnecessary area of the image and save. You do not need to create an alpha channel layer in the **Channels** panel.



- Please also refer to the sections below for more information:
  - Editing the Face Background Mask
  - Editing the Prop Background Mask

Modification with Render Style

CrazyTalk Animator provides **Render Style** feature for changing the color of your character, either vector-based or image based. By setting different render styles, the character can be matching with or standing out from various scenarios .



Please refer to the sections below for more information:

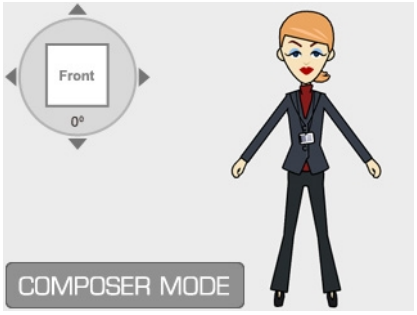
- Changing Character Render Style - Basic: For switching between different template of **Render Styles**.
- Changing Character Render Style - Advanced: For modifying the render styles of individual body parts and facial features to the templates.
- Grouping Sprites for Render Style: For creating and designing contents that are compatible with the render style feature.

Changing Character Render Style - Basic

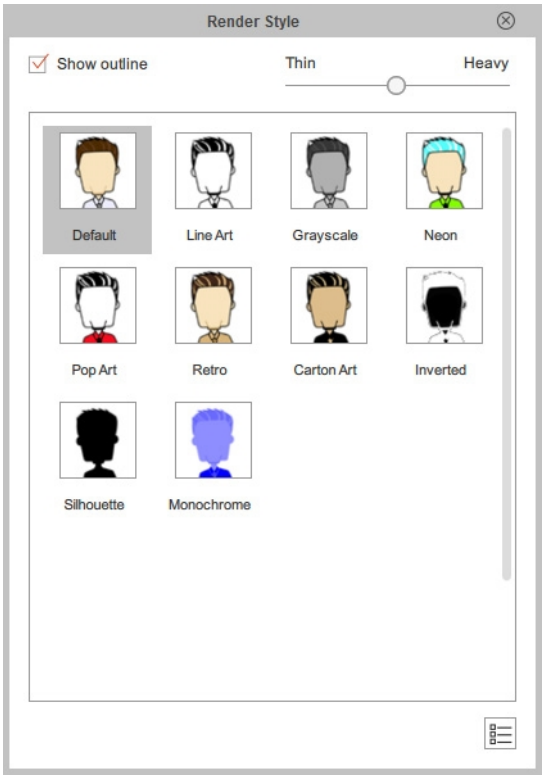
Pro & Pipeline

For each **G2** default character, its sprites are well-grouped and is embedded with pre-defined render styles. You may simply select the ideal style and the colors of the sprites simultaneously change.

1. Apply a G2 character and switch to the composer mode.



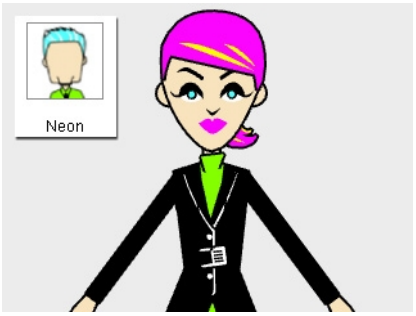
2. Click the **Render Style** button to open the panel.



3. Click on either of the template to change the render style of the character.



None: This template shows the initial color of the character's sprites.



Avant-Garde: Innovative and experimental fashion style for the character.

4. Drag the **Weight** slider to determine the level of the render style effect on the character.



Weight = 100

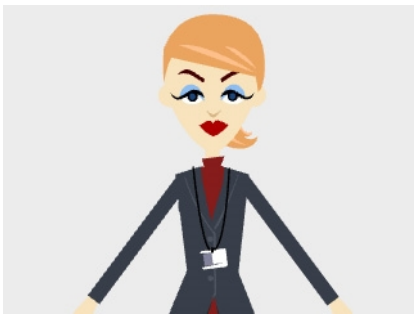


Weight = 30
(the character's color will be closer to the initial color, which is blue)

5. You can also activate or deactivate the **Show Line** box to show/hide the contour line of the character.



Show Line = On



Show Line = Off

Note:

If you want to create custom groups of the character's sprites, then refer to the section below for more information (please note that the feature only supported by **Pro** or **Pipeline** version):

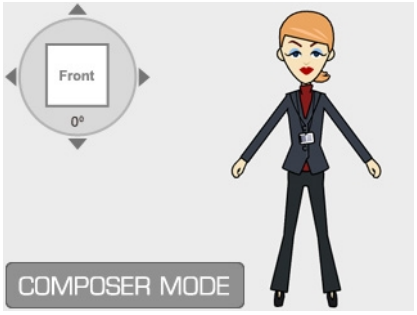
- Changing Character Render Style - Advanced

Changing Character Render Style - Advanced

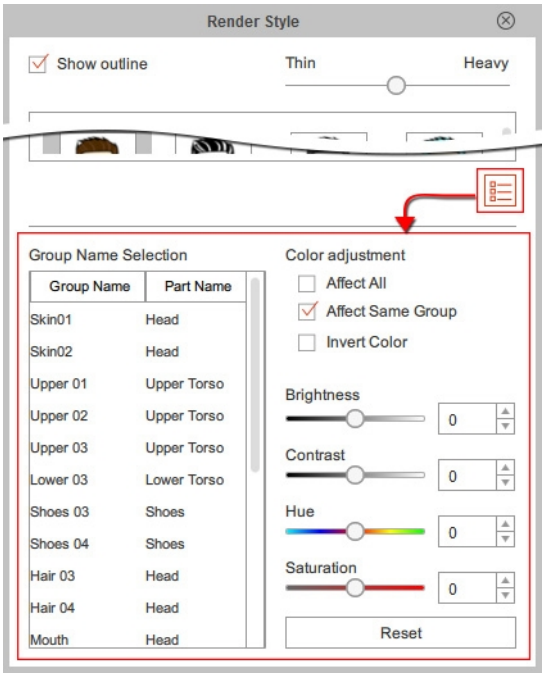
Pro & Pipeline

In addition to changing the character's render style by embedded templates, you are able to manually set the render style by pre-defined sprite groups if you are using the **CrazyTalk Animator Pro** or **Pipeline** version.

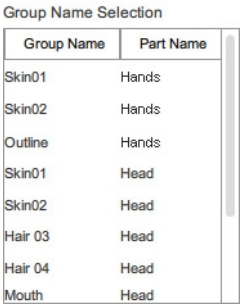
1. Apply a G2 character and switch to the composer mode.



2. Click the **Render Style** button to open the panel (you may optionally follow the steps in the Changing Character Render Style - Basic section to set the character in different render style).
3. Click on the **Advance Settings** button at the bottom right of the panel to show the advanced settings.

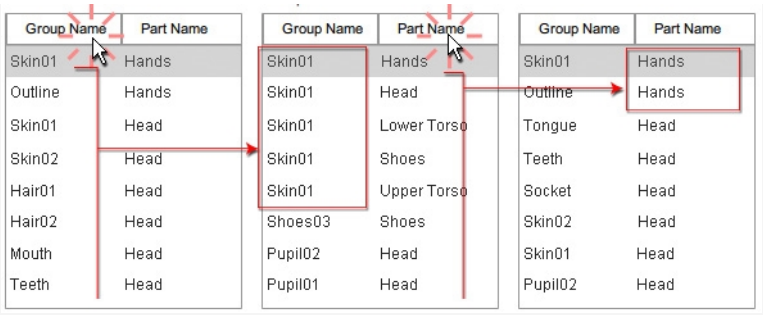


4. Select an item in the **Group Name Selection** pane.



Note:

- You may click on the **Group Name** or **Part Name** captions to re-order the list so that the items with same name will be listed together.

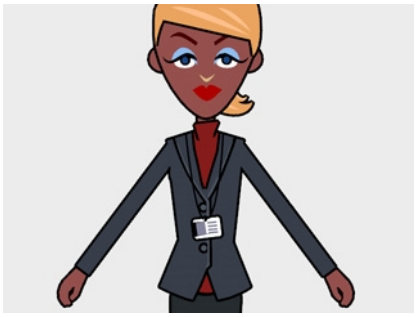


- You may also grouping the sprites for setting render style together. Please refer to the Grouping Sprites for Render Style - Body Parts and Grouping Sprites for Render Style - Facial Features sections for more information.

5. Drag the **Brightness**, **Contrast**, **Hue** and **Saturation** sliders to adjust the body parts with same group name.



The initial look of the skin color.



The color of the body parts with same group name are simultaneously adjusted.

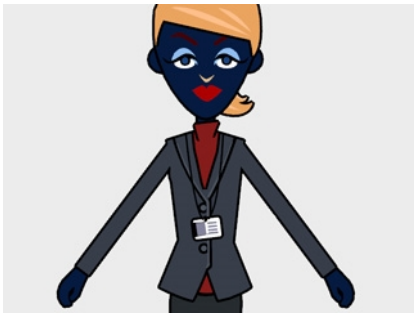
Note:

Click the Reset **Reset** button to reset the four sliders to the initial settings of the currently selected template.

6. If you activate the **Invert Color** box, then the items in the same group will be changed to the complementary color.



The initial look of the skin color.



The color is changed to its complementary color.

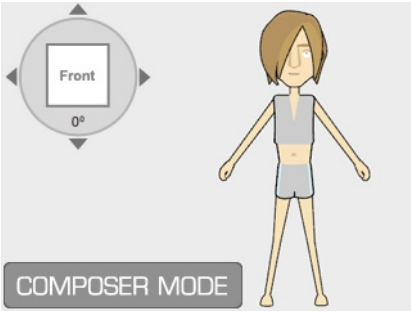
Grouping Sprites for Render Style

Pipeline Only

The **Render Style** feature assists you to change the color of grouped sprites once and for all. You are able to group custom poses and angles in sprites for easily adjusting their colors using the **Render Style** feature.

*Please note that this feature is for the **Pipeline** version only.

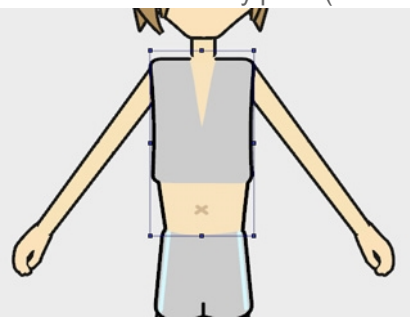
1. Create a custom character and switch to the **Composer Mode** by clicking the **Composer** button.



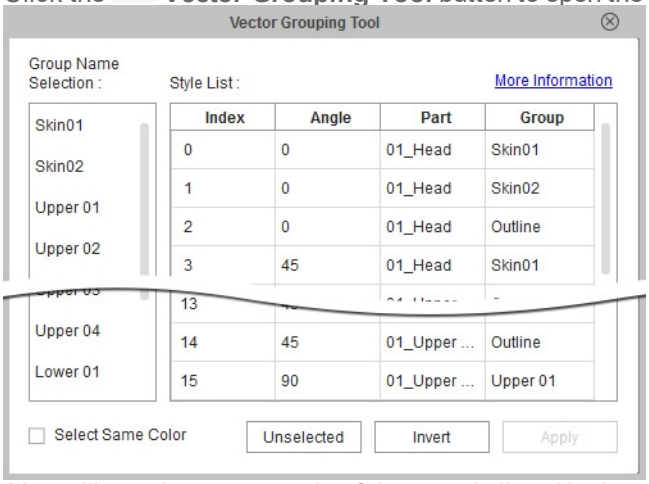
Please refer to the sections below for more information about creating G1 and G2 characters:

- Creating G1 Characters with Frontal Angle
- Creating G2 Characters with Multiple Angles

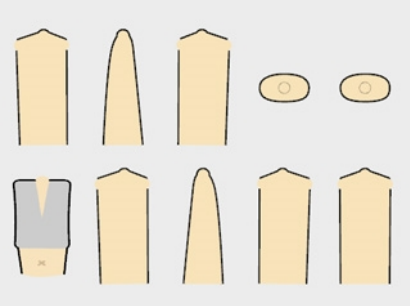
2. Select one of the body parts (in this case, the upper body).



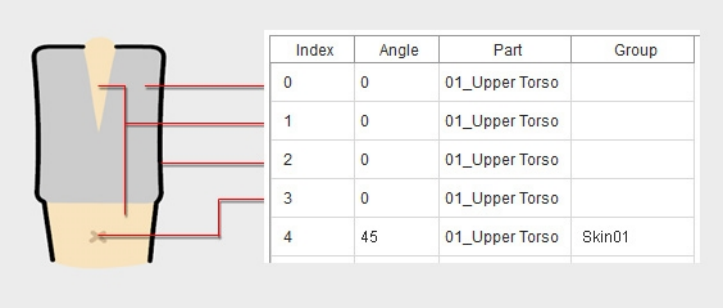
3. Click the **Vector Grouping Tool** button to open the panel.



You will see that every angle of the pose is listed in the view port.

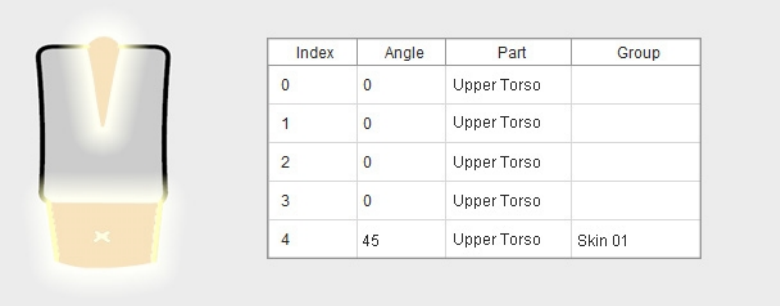


The right pane of the editor lists the components that build up the angles in the view port.



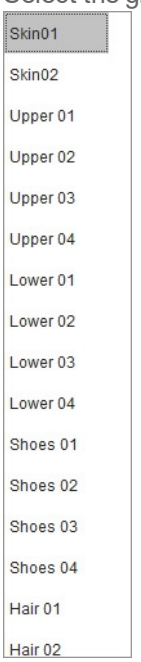
Index	Angle	Part	Group
0	0	01_Upper Torso	
1	0	01_Upper Torso	
2	0	01_Upper Torso	
3	0	01_Upper Torso	
4	45	01_Upper Torso	Skin01

4. Click to select one of the component rows. The selected area in the view port will be flashing.



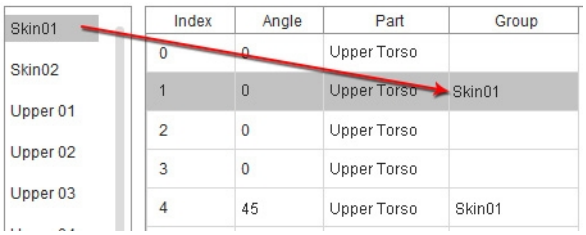
Index	Angle	Part	Group
0	0	Upper Torso	
1	0	Upper Torso	
2	0	Upper Torso	
3	0	Upper Torso	
4	45	Upper Torso	Skin 01

5. Select the group name from the left pane of the editor.



- Skin01
- Skin02
- Upper 01
- Upper 02
- Upper 03
- Upper 04
- Lower 01
- Lower 02
- Lower 03
- Lower 04
- Shoes 01
- Shoes 02
- Shoes 03
- Shoes 04
- Hair 01
- Hair 02

6. Click the **Apply** button at the bottom right of the editor to assign the group name to the component.



- Skin01
- Skin02
- Upper 01
- Upper 02
- Upper 03

Index	Angle	Part	Group
0	0	Upper Torso	
1	0	Upper Torso	Skin01
2	0	Upper Torso	
3	0	Upper Torso	
4	45	Upper Torso	Skin01

7. Repeat the same steps to assign group names to every component that is without a group name.

Index	Angle	Part	Group
0	0	Upper Torso	Upper 01
1	0	Upper Torso	Skin 01
2	0	Upper Torso	Outline
3	0	Upper Torso	Custom 01
4	45	Upper Torso	Skin 01

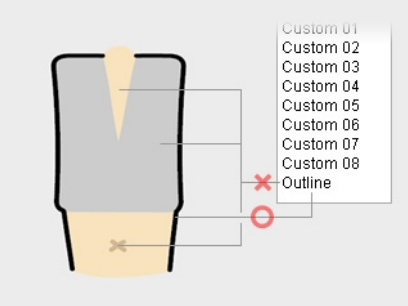
Note:

Please refer to the Quickly Picking and Mapping Identical Color Shapes (version 2.1 or above) section for more information.

8. Select another body part and repeat steps 2 to 7 until every sprite and its angles are grouped.

Note:

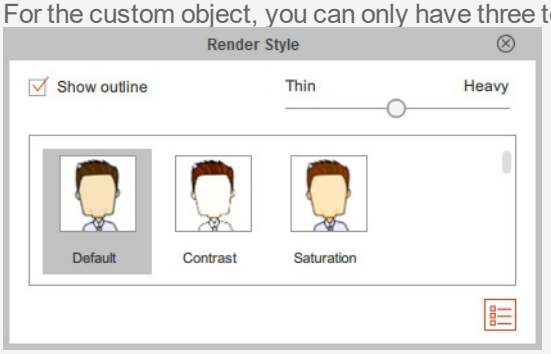
Please note that since the **SWF** from **Flash** can be divided into two main components, **Shape** and **Line**, when you are doing the vector grouping procedure, **DO NOT** assign the "shapes" into the **Outline** group, because although the color of the shapes are able to be adjusted with the real lines, they can not be turned off by deactivating the **Show Outline**. Make sure you only assign "lines" to the **Outline** group.



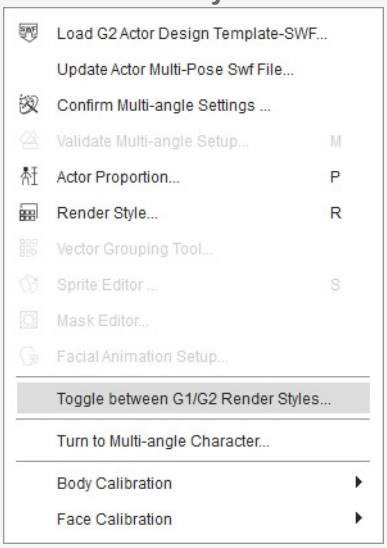
9. Close the editor and open the **Render Style** panel by clicking the button.

Note:

- For the custom object, you can only have three templates after the **Render Style** button is clicked.

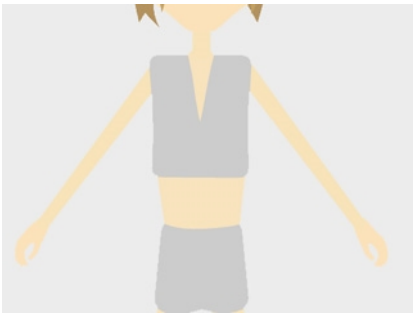


- If you want to have ten default **Render Style** templates, then execute the **Modify** >> **Toggle between G1/G2 Render Styles** command for switching to the list with these templates.

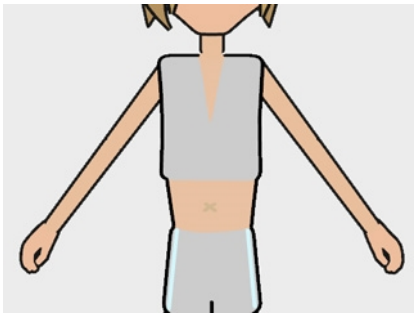


- Please note that you need to manually set the settings of the ten templates, including the **Default** one.

10. The grouped sprites thus can be adjust together.



The outline is turned off



The skin tone is adjusted.

Note:

Please refer to the sections below for more information:

- Changing Character Render Style - Basic
- Changing Character Render Style - Advanced

Quickly Picking and Mapping Identical Color Shapes

Pipeline Only

When you are using the **Vector Grouping Tool** to map the color shapes to certain group names as described in the Grouping Sprites for Render Style section, it often takes a long time to do the mapping one by one. By using the **Select Same Color** feature provided in **CrazyTalk Animator**, you may quickly pick the same color shapes in different angles and simultaneously map them into specific groups.

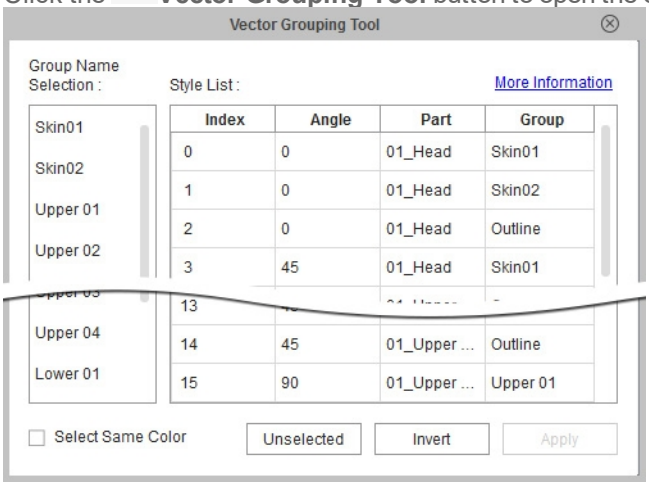
1. Create a character and enter the **Composer** mode.



2. Select one of the body parts (in this case, the upper torso).



3. Click the **Vector Grouping Tool** button to open the editor.



4. Each angle of the selected body part will be shown in the working area.



5. Select one of the shapes in the **Style List**.
   The selected shape of the specific angle in the view port will be flashing.



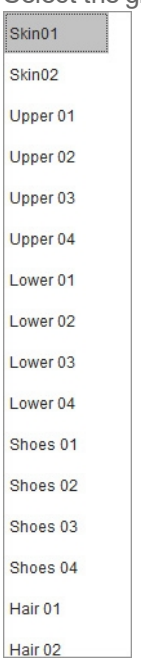
Index	Angle	Part	Group
0	0	01_Upper Torso	
1	0	01_Upper Torso	Skin01
2	0	01_Upper Torso	
3	0	01_Upper Torso	
4	0	01_Upper Torso	
5	45	01_Upper Torso	
6	45	01_Upper Torso	
7	45	01_Upper Torso	
8	45	01_Upper Torso	
9	45	01_Upper Torso	
10	90	01_Upper Torso	
11	90	01_Upper Torso	
12	90	01_Upper Torso	
13	90	01_Upper Torso	
14	90	01_Upper Torso	
15	135	01_Upper Torso	

6. Activate the **Select Same Color** box at the bottom left of the **Vector Grouping Tool** editor.
7. The shapes **OF THE SAME COLOR** in different angles will start flashing as well.

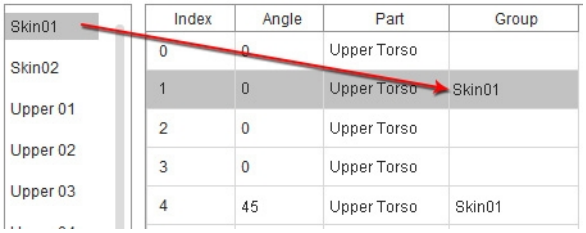


Index	Angle	Part	Group
0	0	01_Upper Torso	
1	0	01_Upper Torso	
2	0	01_Upper Torso	
3	0	01_Upper Torso	
4	0	01_Upper Torso	
5	0	01_Upper Torso	
6	0	01_Upper Torso	
7	0	01_Upper Torso	
8	0	01_Upper Torso	
9	0	01_Upper Torso	
10	45	01_Upper Torso	
11	45	01_Upper Torso	
12	45	01_Upper Torso	
13	45	01_Upper Torso	
14	45	01_Upper Torso	
15	90	01_Upper Torso	

8. Select the group name from the left pane of the editor.



9. Click the **Apply** button at the bottom right of the editor to assign the group name to these shapes.

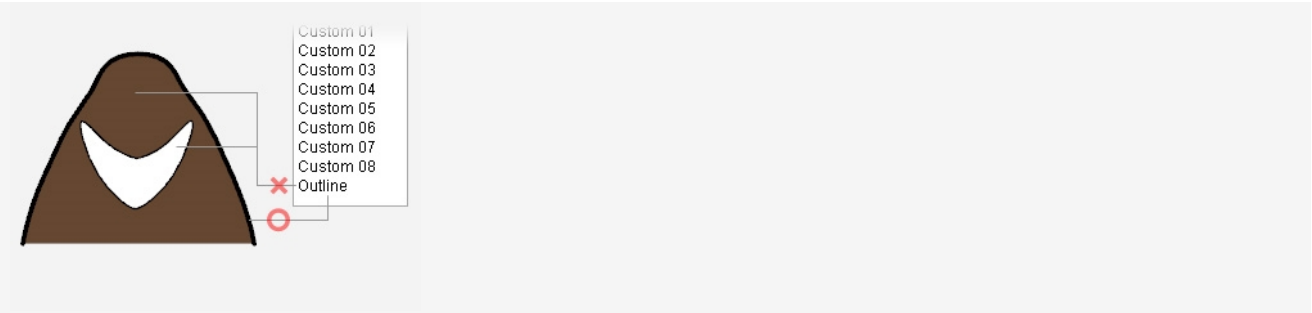


10. Repeat the same steps to assign group names to every shape that is without a group name.

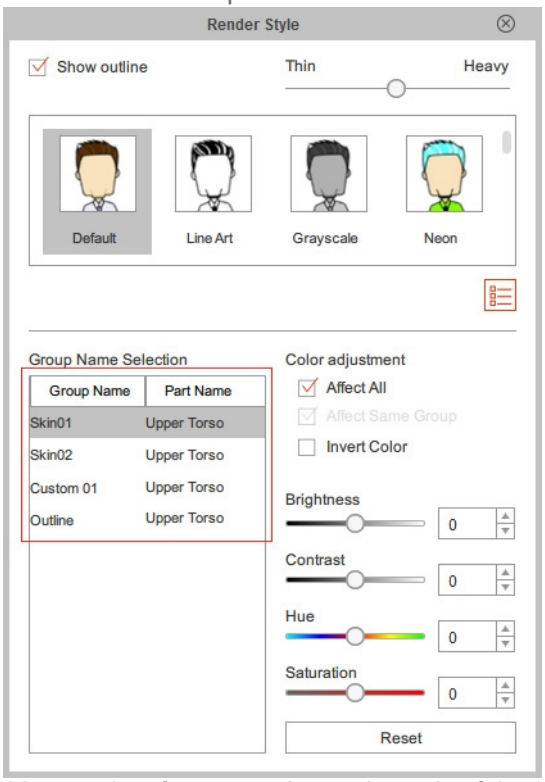
Index	Angle	Part	Group
0	0	01_Upper Torso	Custom 01
1	0	01_Upper Torso	Skin01
2	0	01_Upper Torso	Skin02
3	0	01_Upper Torso	Outline
4	0	01_Upper Torso	Outline
5	45	01_Upper Torso	Custom 01
6	45	01_Upper Torso	Skin02
7	45	01_Upper Torso	Skin01
8	45	01_Upper Torso	Outline
9	45	01_Upper Torso	Outline
10	90	01_Upper Torso	Custom 01
11	90	01_Upper Torso	Skin02
12	90	01_Upper Torso	Skin01
13	90	01_Upper Torso	Outline
14	90	01_Upper Torso	Outline
15	135	01_Upper Torso	Custom 01

Note:

Please note that since the **SWF** from **Flash** can be divided into two main components, **Shape** and **Line**, when you are doing the vector grouping procedure, **DO NOT** assign the "shapes" into the **Outline** group, because although the color of the shapes are able to be adjusted with the real lines, they can not be turned off by deactivating the **Show Outline**. Make sure you only assign "lines" to the **Outline** group.



11. Close the editor and open the **Render Style** panel by clicking the **Render Style** button.
12. The same color shapes are now included into the group names in the **Group Name Selection** list.



You are then free to set the render style of the color shapes within the same groups.

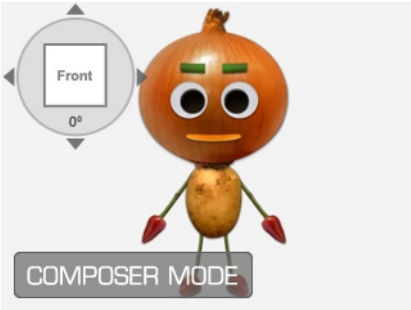
Customizing Render Styles for Image-based Body Parts

Pro & Pipeline

Although the **Render Style** is suitable for vector-based body parts of a character, you are able to use this feature to modify the appearance of image-based characters as well.

By setting the render style presets of the image-based body parts in the composer, you are able to change the body parts to certain colors as designated.

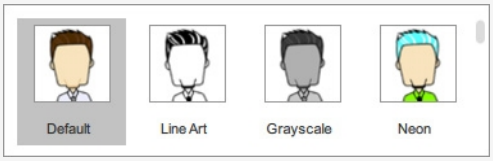
1. Apply an image-based character and switch to the **Composer** mode.



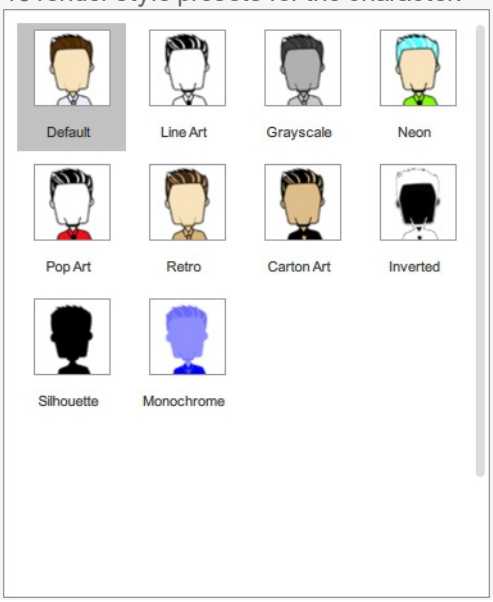
2. Click the  **Render Style** button to open the panel.

Note:

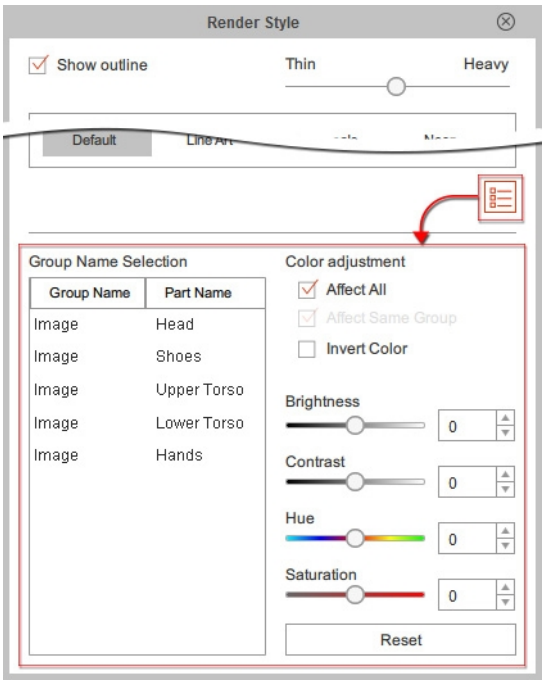
- Normally, image-based characters only have 3 embedded Render Style presets: **Default**, **Contrast** and **Saturation**.



- You may optionally execute the **Modify** >> **Toggle Between G1/G2 Render Styles** command to toggle the 10 render style presets for the character.



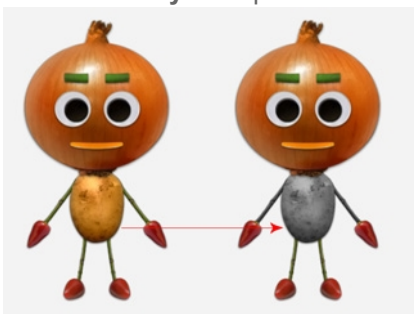
3. Click on the **Advanced Settings** button at the bottom right of the panel to show the advanced settings.



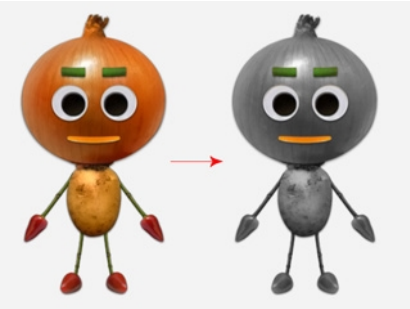
4. Because this is an image-based character, all body parts will be automatically be put into the **Image** group in the **Group Name Selection** pane.



5. Select the body part from the **Group Name Selection** list (in this case, the **Upper Torso**).
6. Leave the **Default** preset unchanged to keep the original color of the body parts in this preset.
7. Select the **Grayscale** preset. Minimize the **Saturation** value to turn the body parts gray.



By default, the **Affect Same Group** box is activated, which can affect every part that is in the same group.



Note:

There are two boxes that allow you to quickly adjust the body parts simultaneously.

- **Affect Same Group**: Activate this box to affect body parts with identical group names.

Group Name	Part Name
Image	Head
Image	Shoes
Image	Upper Torso
Image	Lower Torso
Skin01	Hands
Skin02	Hands
Outline	Hands

- **Affect All**: Activate this box to affect every body part simultaneously.

Group Name	Part Name
Image	Head
Image	Shoes
Image	Upper Torso
Image	Lower Torso
Skin01	Hands
Skin02	Hands
Outline	Hands

8. Select different presets and set the **Brightness**, **ContrastHue** and **Saturation** values to create different customized looks for the character's body parts.

Examining Character Animation Using Calibration Templates

After the compositions and the modifications of the character are done, you may use the built-in body motion for further calibration by **Calibration** feature. With this you may view all character artifacts, such as; joint areas and body parts. You may then correct any imperfections.

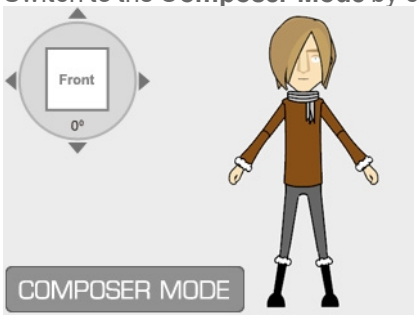
1. Create a character.

   Note:

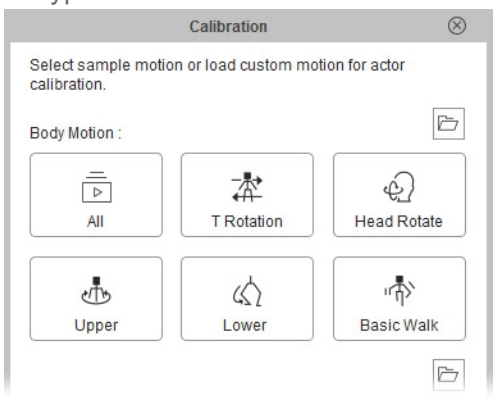
   Follow the sections below to create a custom character:

   - Creating G1 Character with Frontal Angle
   - Creating G2 Character with Multiple Angles

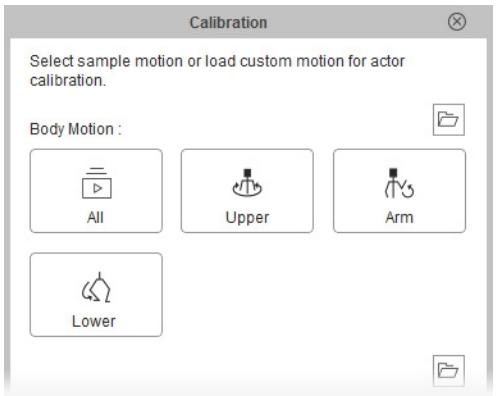
2. Switch to the **Composer Mode** by clicking the **Composer** button.



3. Click the **Calibration** button to open the panel. Please note that the number of the templates differs according to the type of the current character.

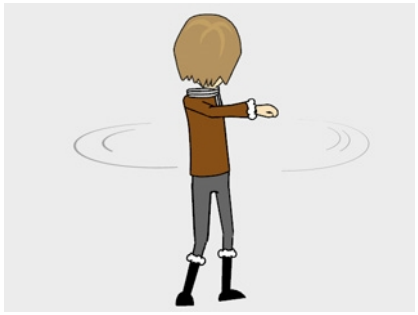


Calibration templates for G2 characters.

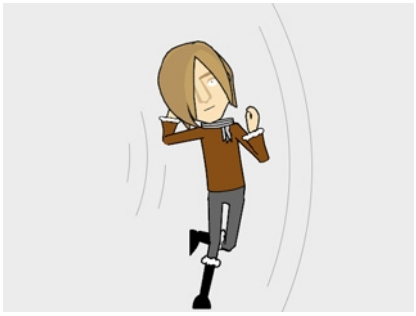


Calibration templates for G1 characters.

4. Click on the template from the **Body Motion** pane to preview the motion of the character. Fix visual artifacts if needed.



Upper body movement



Dance movement

Runtime Setting up Bones

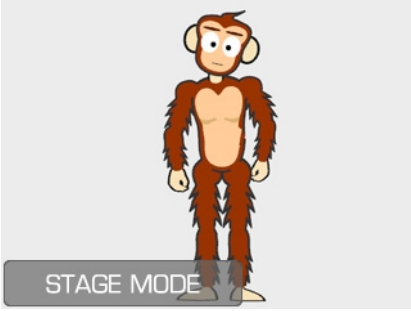
Pro & Pipeline

In addition to build up custom the body proportions of a character in the **Composer Mode**, you are able to quickly set up bones in the **Stage Mode**. This feature saves your time to go back and forth between the **Stage** and **Composer Modes** while the character still can be completely initialized, especially when you are not satisfied with the body proportions of the character.

*Please note that this feature initializes the transformation of each bones but will **NOT** setting any **Transform** keys.

*Also note that this feature is for the **Pipeline** and **Pro** versions only.

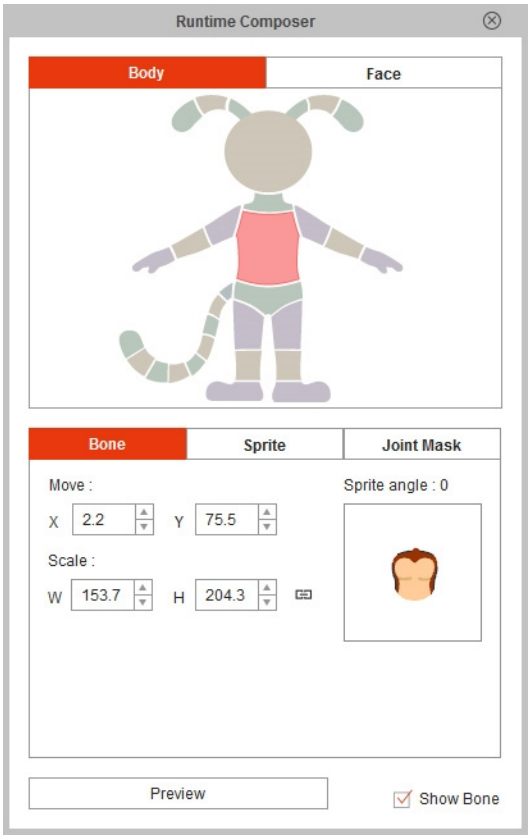
1. In **Stage Mode**, apply a character.



Note:

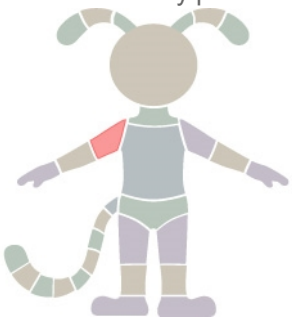
Because the steps below does not set any keys, you can do them at any time frame to initialize the character's bone transformations.

2. Make sure the character is selected and click the **Runtime Composer** button to open the panel.

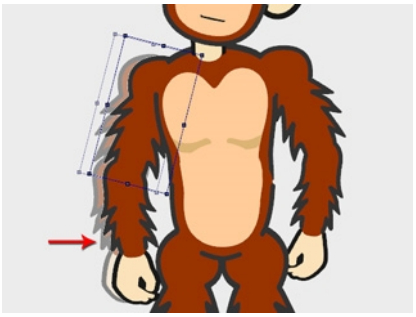


3. By default, it is switched to the **Bone** tab.

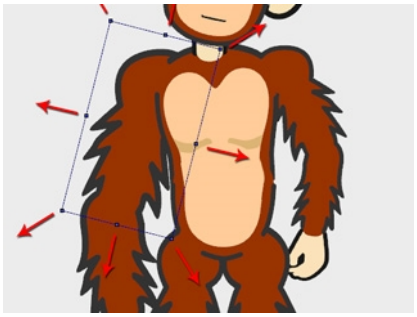
4. Pick the desired body parts that you want to initialized by clicking on the dummy.



5. Adjust the position and size of the bone on the working area.



Drag the body part to re-locate the bone.

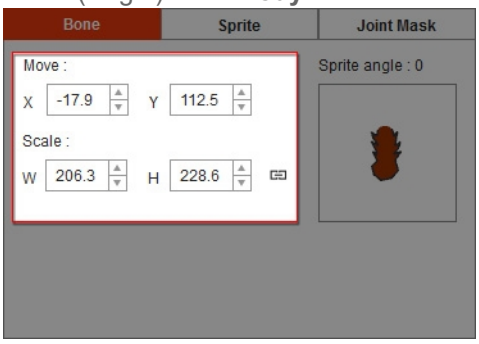


Drag the control points to resize the bone.

Note:

- It is highly suggested that you adjust from parent bones to child bones because the child ones inherit the transformation data from the parent ones.

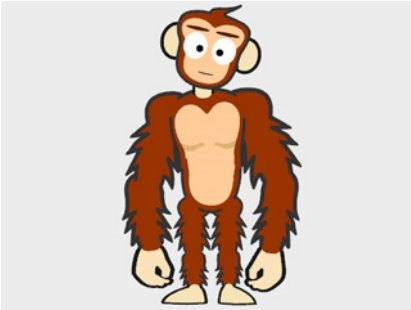
6. If you want to have a precise values for the position and size of the bone, then adjust the values of the **X**, **Y**, **W** (width) and **H** (height) in the **Body** tab.



Note:

- Press down the **Lock/Unlock Ratio** button for resizing in current ratio.
- You can not set the rotation value of the selected bones.

7. Repeat the same steps until the bones are ideally adjusted and initialized.



Runtime Setting up Poses

Pro & Pipeline

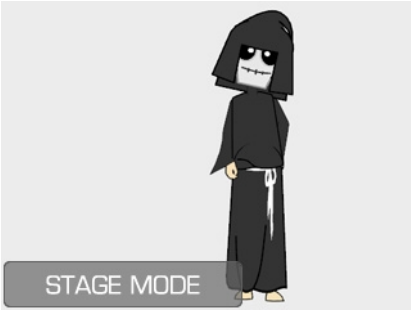
When you apply a motion to a character, the animation is auto-generated by the bone transformation and sprite switching. However, you may sometimes encounter issues caused by the automation. The issues can be:

- **Body part missing** - some angle slots of a pose are empty and when the motion needs the angle, you may see a missing body part.
- **More poses in need** - you are not satisfied with the poses or merely want to add new poses and angles but you do not want to enter the **Composer Mode**.

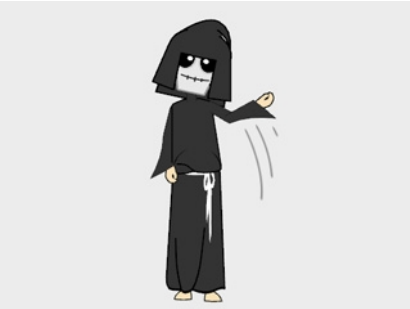
By using the **Runtime Composer**, you can add poses, replace angles or even set sprite switch keys to certain timing for a motion without entering the **Composer Mode** to build up the character from scratch.

*Please note that this feature is for the **Pipeline** and **Pro** versions only.

1. In **Stage Mode**, apply a character.

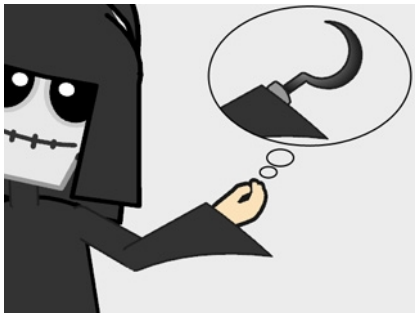


2. Apply a motion to the character.

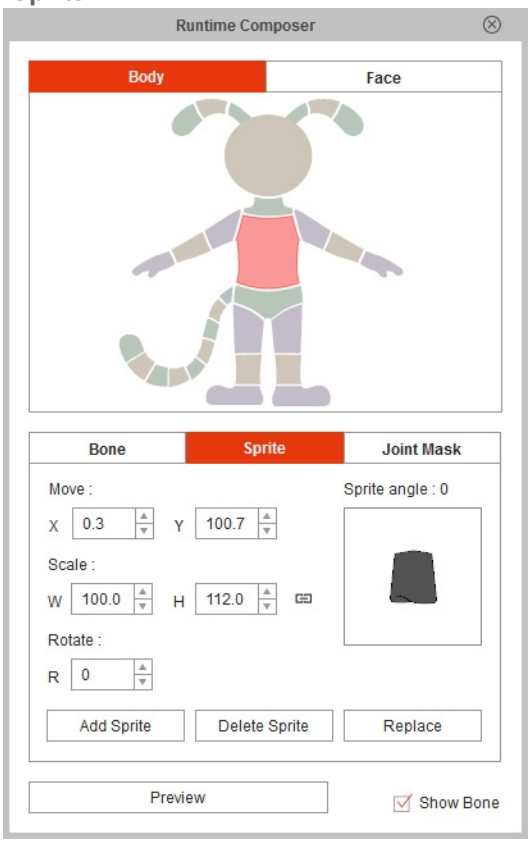


3. Go to the time frame when you are not satisfied with the results as described in the beginning of this page.

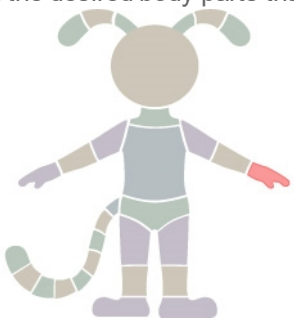

The pose missing issue.


Anticipation for desired poses.

4. Make sure the character is selected and click the **Runtime Composer** button to open the panel and switch to the **Sprite** tab.

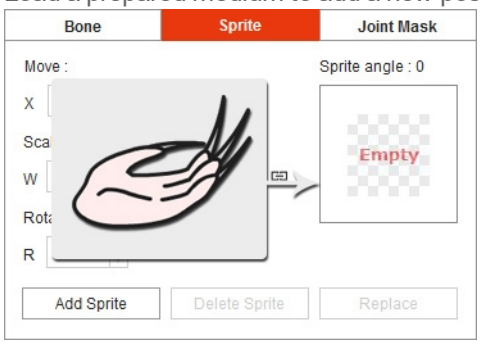


5. Pick the desired body parts that you want to initialized by clicking on the dummy.

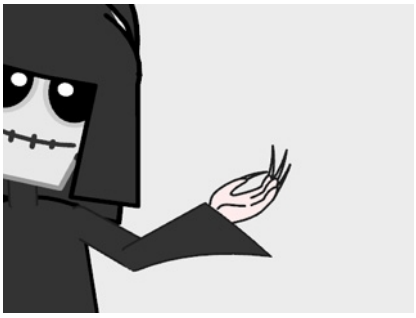


Fixing the Angle-Missing Issue

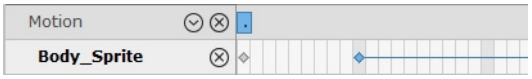
1. For the missing angle, click the **Add Sprite** button.
2. Load a prepared medium to add a new pose for the empty slot.



3. The angle-missing issues is then fixed while a sprite switching key of the loaded medium is added.



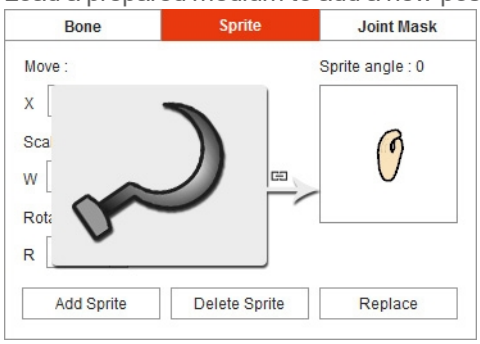
Add a new pose for the missing body part.



A new sprite switching key is added.

Anticipation for Better Poses.

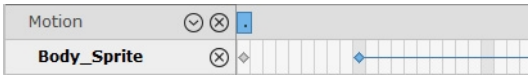
1. For adding expected pose, click the Replace **Replace** button.
2. Load a prepared medium to add a new pose for the empty slot.



3. The angle-missing issues is then fixed while a sprite switching key of the loaded medium is added.



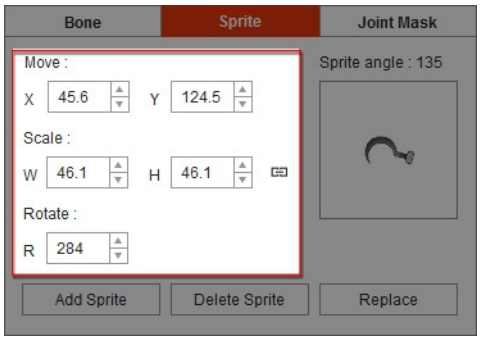
The original angle is replaced by the new one.



A new sprite switching key is added.

Transform the Pose

If you want to have a precise values for the position and size of the bone, then adjust the values of the **Move**, **Scale** and **Rotate**.



Note:

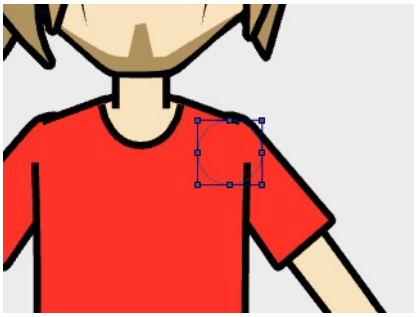
- Press down the **Keep Ratio** button for resizing in current ratio.

Runtime Setting up Joint Masks

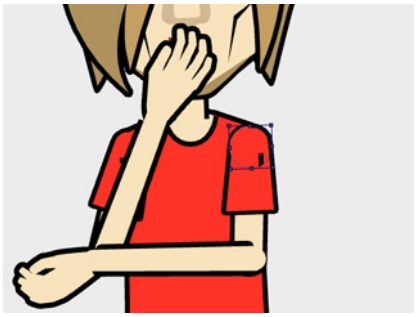
Pro & Pipeline

Each standard G2 character contains joint masks at the joint areas for hiding the unwanted edges of the body parts so that the adjacent body parts appear continuous.

However, each joint mask is transformed along with the body part it attaches. Therefore, when the character performs motions, the transformation of the bones may also transform the joint masks and causes it away from the edges that are supposed to be masked out.



The initially set joint mask in the **Composer Mode**.

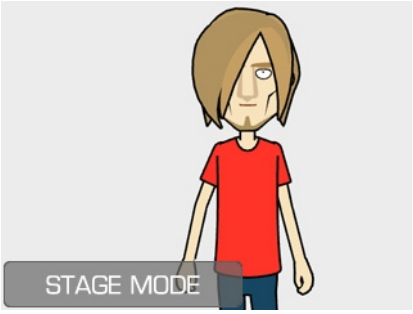


The joint mask transformed causes the edges of body parts appear.

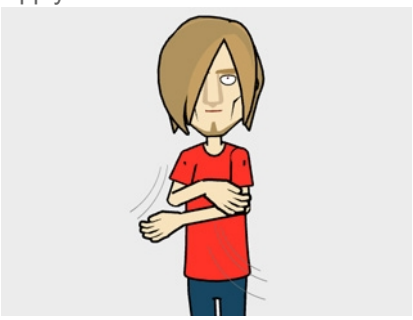
CrazyTalk Animator provides **Runtime Composer** so that you may quickly set up the joint masks without entering the **Composer Mode** so that they can still conceal the edged during the character' motion.

*Please note that this feature is for the **Pipeline** and **Pro** versions only.

1. In **Stage Mode**, apply a character.



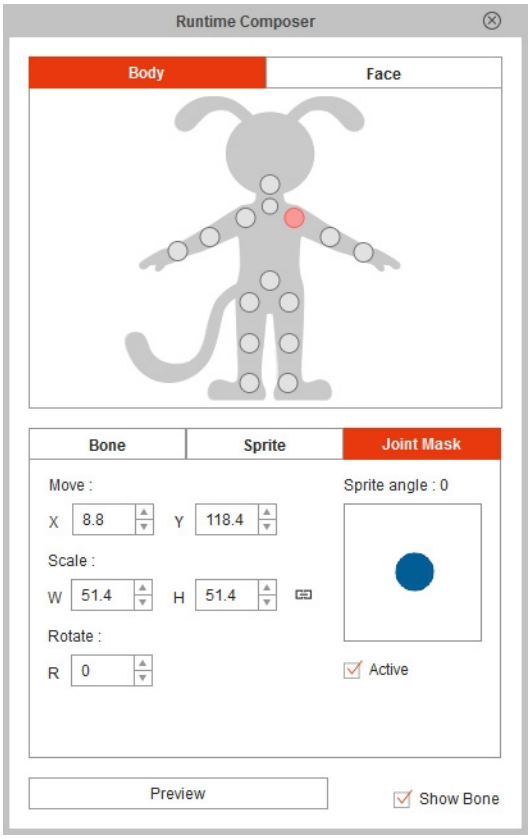
2. Apply a motion to the character.



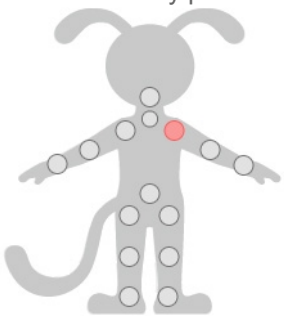
3. Go to the time frame when the entire or partial edges of two adjacent body parts appear.



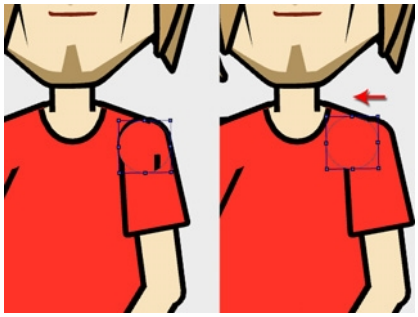
4. Make sure the character is selected and click the **Runtime Composer** button to open the panel and switch to the **Joint Mask** tab.



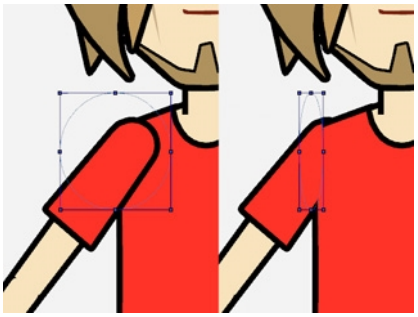
5. Pick the desired body parts that you want to initialized by clicking on the dummy.



6. Transform the joint mask by dragging it or the control points on the working area to conceal the edges.

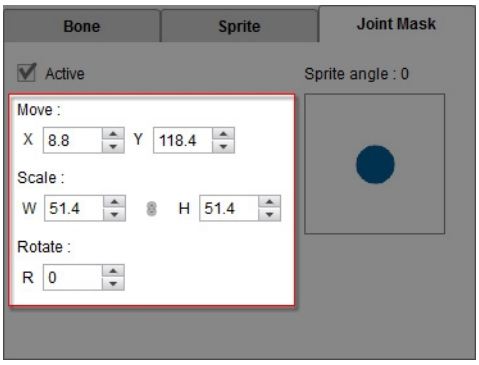


Move the joint mask to conceal the redundant edge lines.



Scale the joint mask to conceal the redundant edge lines.

7. If you want to have a precise values for the position and size of the bone, then adjust the values of the **Move**, **Scale** and **Rotate**.



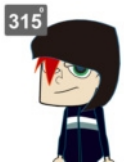
Character Types (New for v3)

In **CrazyTalk Animator**, there are several kinds of characters; **G1** (**CrazyTalk Animator v1** or above), **G2** (**CrazyTalk Animator v2** or above), **Template Bone Character** (**CrazyTalk Animator v3** or above) and **Free Bone Character** (**CrazyTalk Animator v3** or above).



Character Thumbnails and Paths

The thumbnails and paths of the embedded characters are as described in the table below:

Assets	Thumbnail	Location (default)	Description
G1 Characters		• **Windows XP** - C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\G1\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\G1\	• The thumbnail of the G1 character is marked with the character's direction.
G2 Characters		• **Windows XP** - C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\	• The thumbnail of the G1 character is marked with **G2**. • The **RS** stands for **Render Style**, which indicates that the character is also given the **Render Style** settings.
Template Bone Characters	 	• **Windows XP** - C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\	• The thumbnail of the template bone character is marked with **TB**. • The thumbnail of the template bone character can also be marked with various entities such as dogs, worms, or simply the look of the bones.
Free Bone Characters		• **Windows XP** - C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\	• The bone structure of this kind can be constructed freely. There are no specific rules for them. • The source images for this kind of bones are unlimited and can be anything.

Comparison Table

The comparison of the G1 and G2 characters are as shown in the table below:

	G1 Characters	G2 Characters
Angles	Flat, only divided into Front and Side categories.	Full angle with 10 perspectives.
2D Motion Compatibility	Fully supported.	Fully supported.
3D Motion Compatibility	Supported with visual flaws.	Fully supported.
Body Parts Replacement	Only with G1 characters.	Only with G2 characters.
Image-based	Fully supported.	Fully supported.
Vector-based	Fully supported.	Fully supported.
Render Style Ability	Not supported.	Fully supported (except the upgraded **Eddie** and **Cherry**).

Please also refer to the following sections for more information:

- G1 Character
- G2 Character with Multiple Angles
- G3 Character
- Free Bone Character
- Mix-matching Composite Character from Library

G1 Character (New for v3)

G1 (generation 1) characters can be found in **CrazyTalk Animator Version 1**. They are designed facing either front or side views (implied by the directions of the left feet of the character). There is no way to change the direction of this type of character in **CrazyTalk Animator Version 1**.

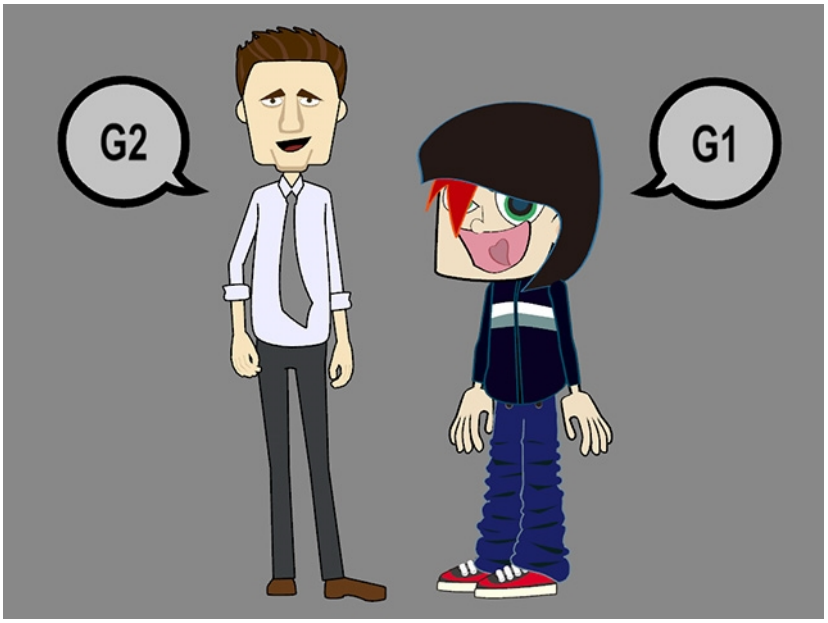


If you apply this type of characters to **CrazyTalk Animator Version 2 or above**, then the character will be put into all 10 different slot angles. Therefore, no matter which angle you turn the character, it will still look the same. Please refer to the G2 Character with Multiple Angles section for more information.

Most of the **G1** sprite-based characters of this type that are seen in the **Content Library** of **CrazyTalk Animator version 2, or above** are characters that have been converted, even if they are marked **G1** at the corner of their thumbnails.

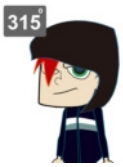
G2 Characters with Multiple Angles (New for v3)

In **CrazyTalk Animator v2 or above**, there are two kinds of characters with multiple angles - **G1** and **G2**. They are able to turn in 10 angles during animations. For more information view the sections below, on these two types of multiple-angle characters.



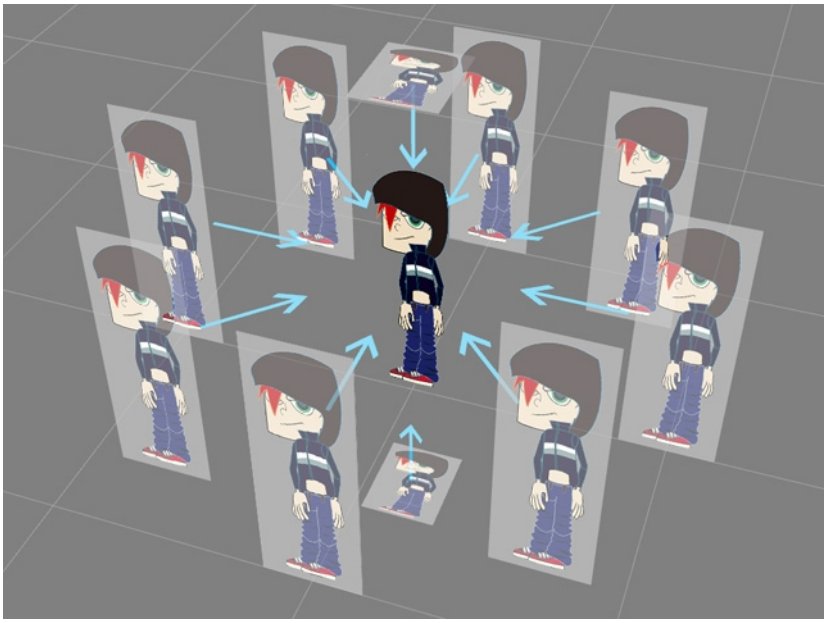
Character Thumbnails and Paths

The thumbnails and paths of the embedded characters are as described in the table below:

Assets	Thumbnail	Location (default)	Description
G1 Characters		• **Windows XP** - C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\G1\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\G1\	• The thumbnail of the G1 character is marked with the character's direction.
G2 Characters		• **Windows XP** - C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\	• The thumbnail of the G1 character is marked with **G2**. • The **RS** stands for **Render Style**, which indicates that the character is also enjoys the **Render Style** settings.

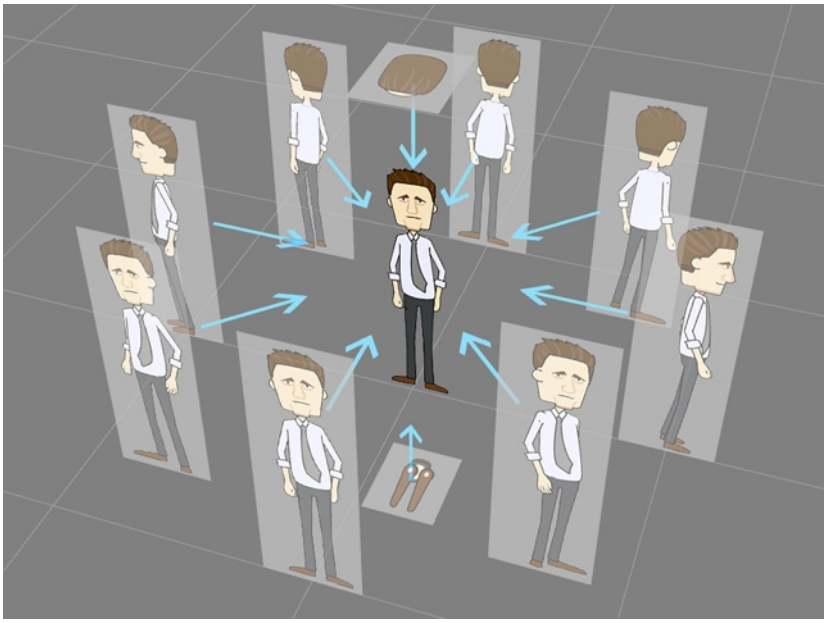
Angles

G1 Characters and their body parts in **CrarzyTalk Animator v2, or above** are basically flat with a single view (front or side). The perspectives of the other 9 angles use this view as a reference. Most of the **G1** characters that you see in the **Content Library** of **CrazyTalk Animator version 2, or above** are the characters being converted, no matter if they are marked **G1**, **315** or **0** at the corner of their thumbnails.



G1 character with single view. Each perspective takes the view as a reference.

On the other hand, **G2 characters** and their body parts in **CrazyTalk Animator v2, or above** have up to 10 angles.



G2 character with 10 perspectives

Motion Compatibility

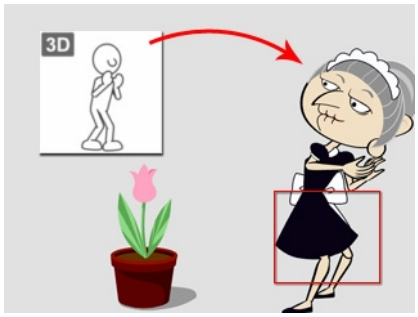
G1 Character

The G1 characters can be applied with 2D flat motions just as you did in the previous version of **CrazyTalk Animator**.



G1 character with 2D flat motion applied

Applying 3D or flattened 3D motions to a G1 character can generate visual imperfections because each body part contains or refers to only one view.



G1 character with 3D motion applied

G2 Character

G2 characters, however, are able to perform not only the flat motions but also multi-dimensional ones (3D motions) because of the multi-angle characteristic. By applying the 3D motions, you can increase the possibility for a character to perform in different perspective views.



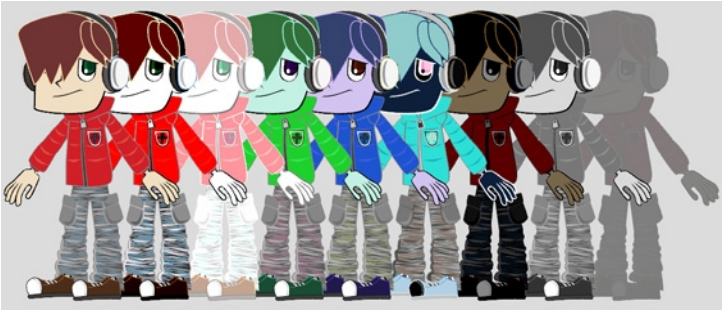
G2 character with 2D motion applied



G2 character with 3D motion applied

Render Style Capability

G1 characters are not given the render style capability, so that you can change the color of the entire body at once. There are no separate adjustments for G1 characters' body parts.



G1 characters do not contain render styles; color-changing will always be applied to the entire character.

Default G2 characters are built with certain render styles. You can snap and change the style of the characters by clicking on prepared profiles. In addition to that, each body part can be adjusted individually.



G2 character with different render styles. Grouped body parts can be individually adjusted to compose special appearances and styles.

Comparison Table

The comparison of the G1 and G2 characters are as shown in the table below:

	G1 Characters	G2 Characters
Angles	Flat, only divided into front and side categories.	Full angle with 10 perspectives.
2D Motion Compatibility	Fully supported.	Fully supported.
3D Motion Compatibility	Supported with visual flaws.	Fully supported.
Body Parts Replacement	Only with G1 characters.	Only with G2 characters.
Image-based	Fully supported.	Fully supported.
Vector-based	Fully supported.	Fully supported.
Render Style Ability	Not supported.	Fully supported (except the upgraded **Eddie** and **Cherry**).

G3 Character (New for v3)

The default **G3** (generation 3) characters are created with **CrazyTalk Animator Version 3, or above**. They are built with fixed regulated bone structures. Therefore, motions can be exchanged between them if they are of the same species.



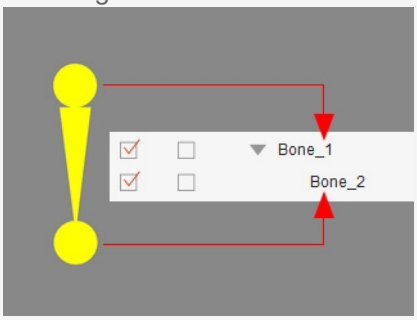
Theory of G3 and Free Bone Characters

The theory of the **G3** or **Free-bone** characters is based on the **Bone-rig** technique.



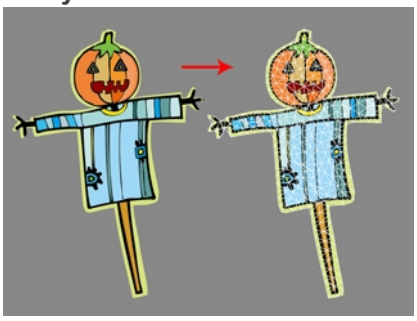
Note:

- Please note that the bone at the bottom side of the triangle is the **Parent** bone while the one at the tip point of the triangle is the **Child** bone.

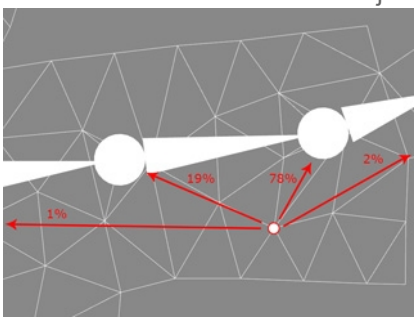


- The triangle between two bones is actually **Not a Bone**. It is only an indication for showing the direction of the bone string and the connection between bones.

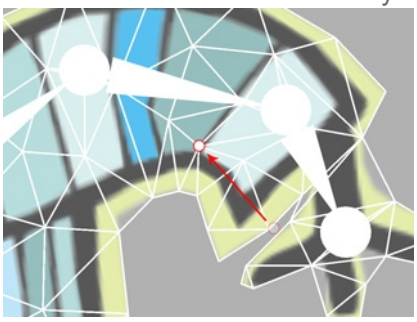
1. **CrazyTalk Animator** first subdivides the loaded image into numerous triangles.



2. Afterwards, **CrazyTalk Animator** calculates the influence weights for each endpoint of the triangles in accordance with their distance to the adjacent bones.

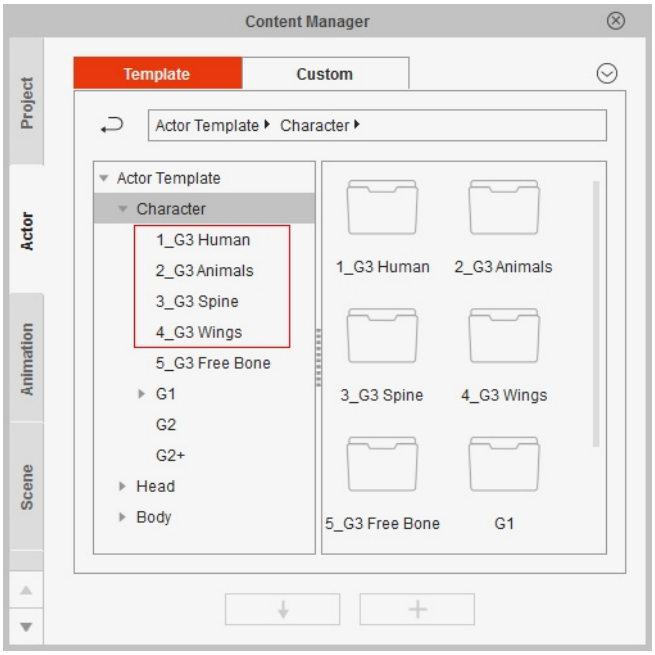


3. When the bones offset or rotate by **IK** or **FK** methods, the image will thus be driven to distort and animate.

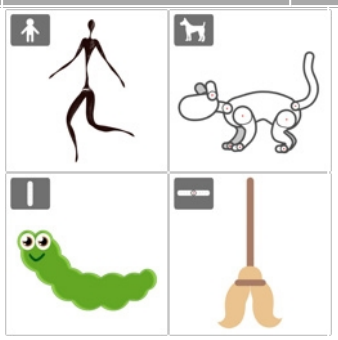


G3 Character Types

The **G3** characters are divided into **G3 Human**, **G3 Animals**, **G3 Spine**, and **G3 Wings**.



The thumbnails and paths of the characters are as described in the table below:

Assets	Thumbnail	Location (default)	Description
Template Bone Characters		• **Windows XP** - C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\	• The thumbnail of the template bone character can also be marked with various entities such as human, quadruped animal, worms, or simply the look of the bones.

Motion Compatibility

The embedded **G3** characters can only use the motions that are specially created for them. They **CANNOT** be applied with 2D or 3D motions because these motions are specially made for **G2** characters.

For the **G3** characters, they are compatible with the template motions that are created for them in the library.



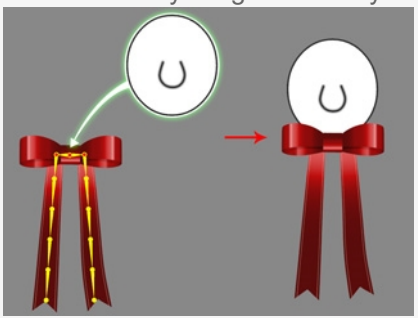
Free Bone Character (New for v3)

The default **Free Bone** characters can be created with **CrazyTalk Animator Version 3, or above**. It is built with free structures of bones. Therefore, the character can be human or non-human.



Note:

Basically, the **Free Bone Characters** do not have any heads. You must attach a head in the **Composer Mode** onto one of the bones of the bone structure in order to have the character talk. The heads in the illustration at the beginning of this section are only images driven by bones and do not have the ability to talk.



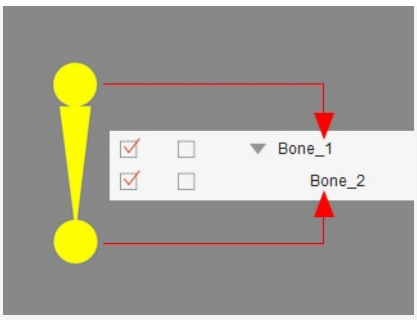
Theory of G3 and Free Bone Characters

The theory of the **G3** or **Free Bone** Characters is based on a **Bone-rig** technique.



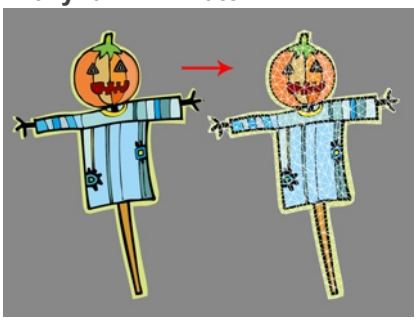
Note:

- Please note that the bone at the bottom side of the triangle is the **Parent** bone while the one at the tip point of the triangle is the **Child**.

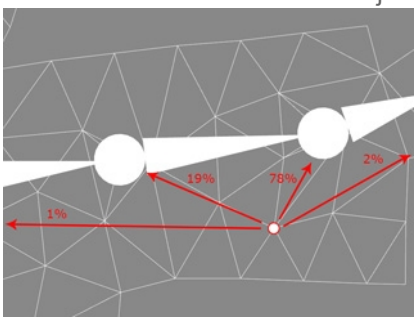


- The triangle between two bones is actually **Not a Bone**. It is only an indication for showing the direction of the bone string and the connection between bones.

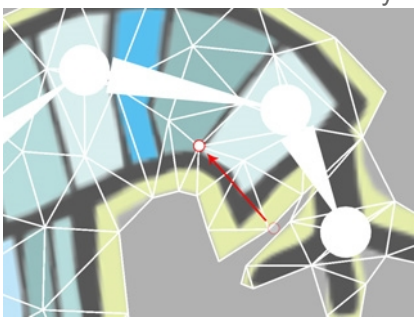
1. **CrazyTalk Animator** first subdivides the loaded image into numerous triangles.



2. Afterwards, **CrazyTalk Animator** calculates the influence weights for each endpoint of the triangles in accordance with their distance to the adjacent bones.

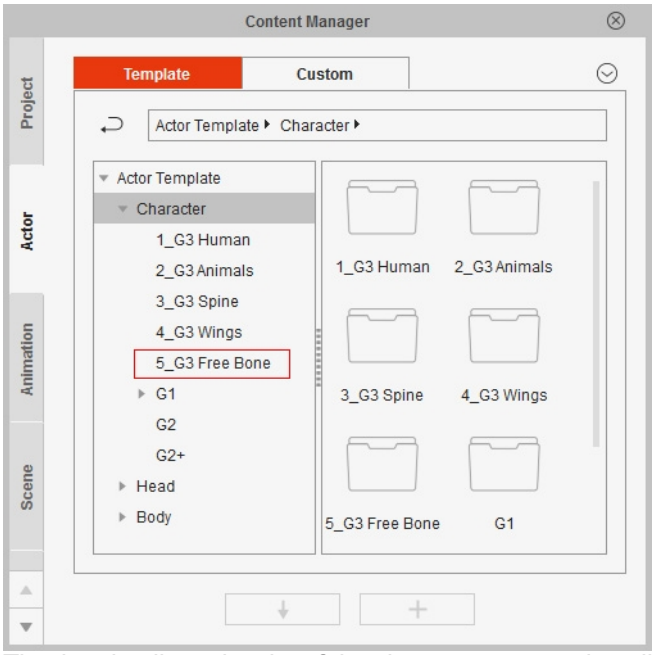


3. When the bones offset or rotate by IK or FK methods, the image will thus be driven to distort and animate.



Free Bone Character Library

The **Free Bone** characters embedded can be found in the **G3 Free Bone** library.



The thumbnails and paths of the characters are as described in the table below:

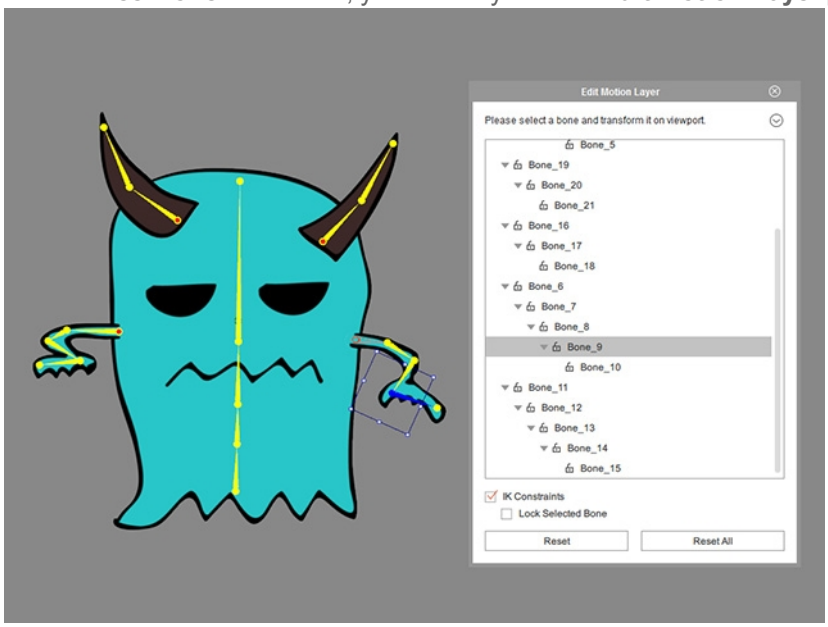
Assets	Thumbnail	Location (default)	Description
Free Bone Characters		• **Windows XP** - C:\Documents and Settings\All Users \Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template \CrazyTalk Animator3 Template\Character\	• A bone structure of this kind can be freely constructed. There are no specific rules for them. • The types of source images for this kind of bones are unlimited and can be anything.

Note:

Please note that even though **Free Bone** characters are provided in the **Content Manager**, you are still free to create any kind of character with different bone structures.

Motion Compatibility

For the **Free Bone** characters, you can only use the **Edit Motion Layer** panel to do the key-frame animation for them.

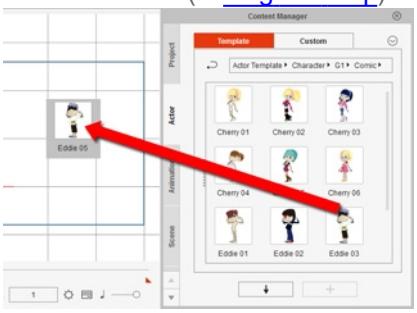


Mix-match Composite Characters from Library (New for v3)

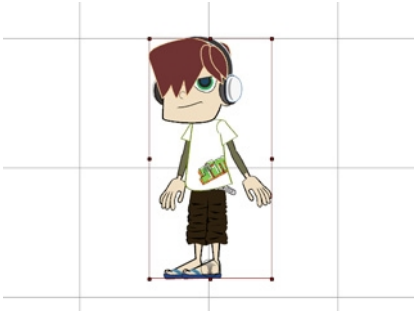
By mixing up the bodies and heads from the Content library, you can create various types of characters that are suitable for your projects.

Creating a G2 Character from the Library

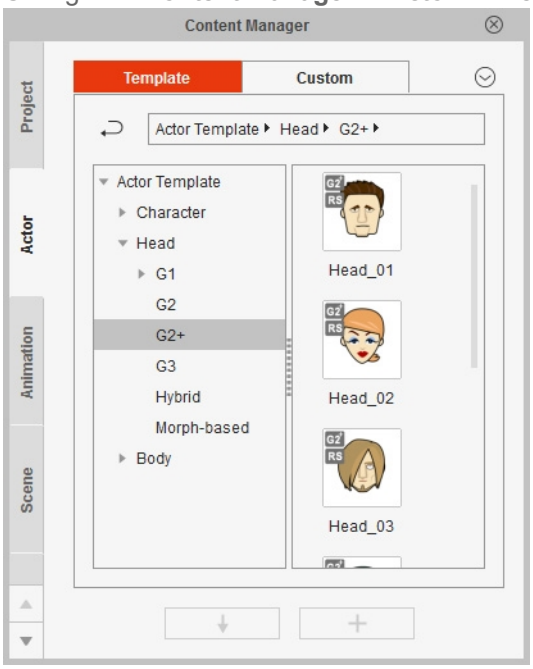
1. Switch to the **Actor** tab in the **Content Manager**. Find the **Character** content folder.
2. Double-click on (or drag and drop) one of the templates to apply.



3. Select the character if it is not selected.



4. Change the **Content Manager** to **Actor** >> **Head** library.



5. Apply different head templates from the **Template** or **Custom** libraries found in the **Content Manager**.

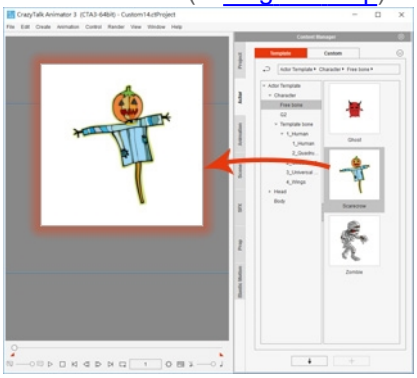


6. Change to **Actor** >> **Body** library.
7. Apply different body templates from the **Template** or **Custom** libraries found in the **Content Manager**.

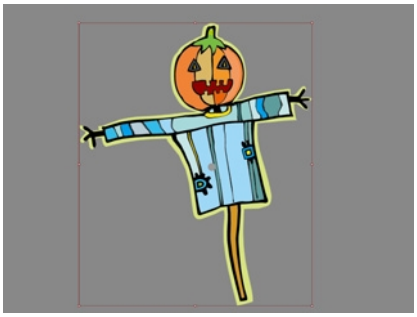


Mixing a G3 Character with a Desired Head

1. Switch to the **Actor** tab in the **Content Manager**. Find the **Character** content folder.
2. Double-click on (or drag and drop) one of the templates in the **Free Bone** or **Template Bone** folder.

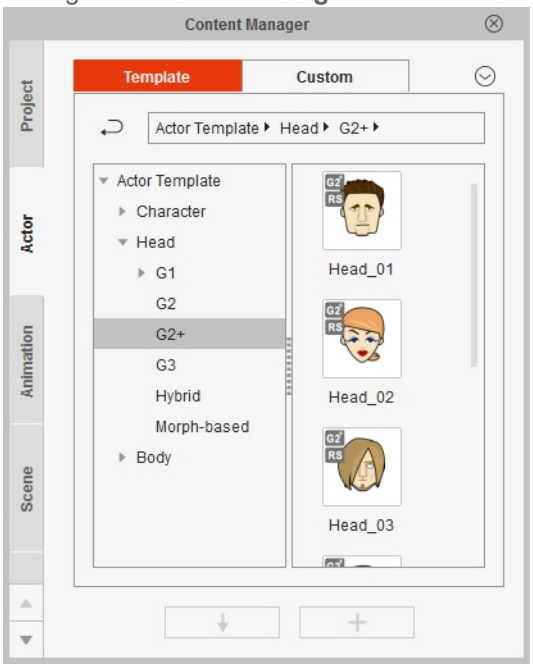


3. Make sure that the character is selected.

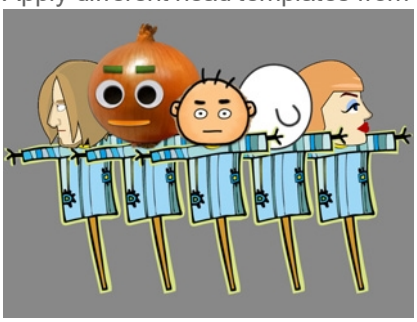


4. Switch to the **Composer Mode**.

5. Change the **Content Manager** to **Actor** >> **Head** library.

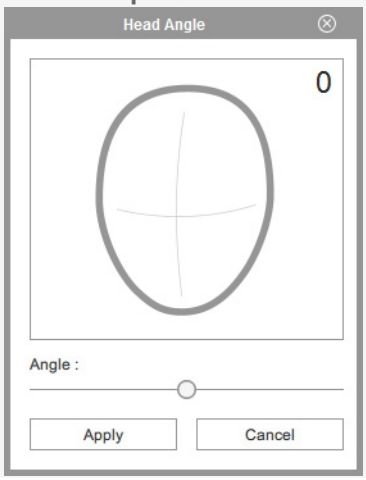


6. Apply different head templates from the **Template** or **Custom** libraries found in the **Content Manager**.



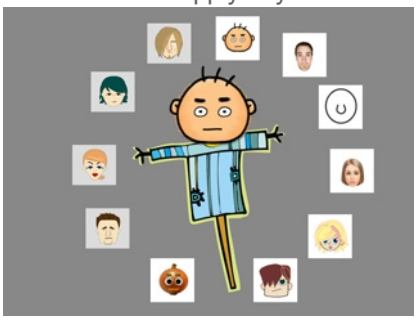
Note:

You will be asked to extract the face view from one of the 5 angles (**270**, **315**, **0**, **45** and **90** degrees) if the target head is a **Sprite Based** one because the **G3** character does not support multiple angles.



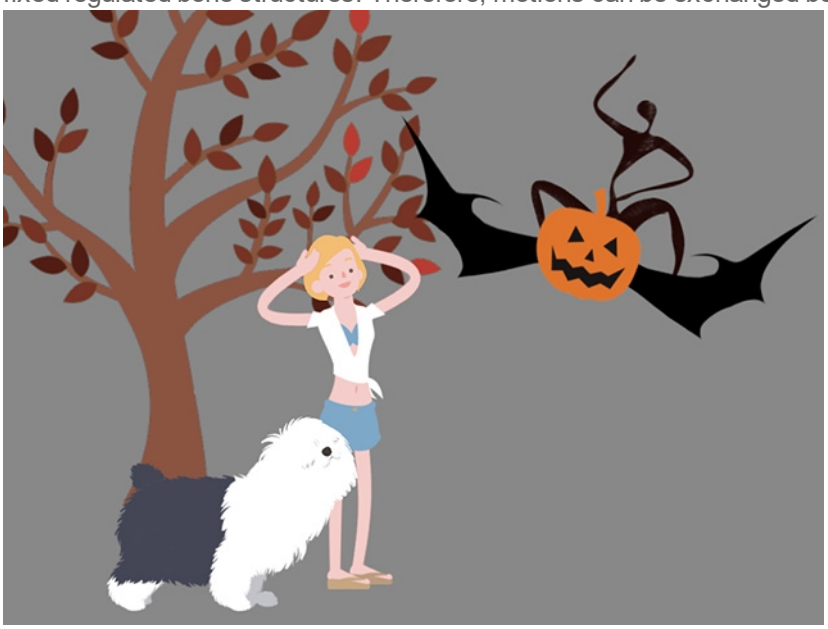
7. Switch back to the **Stage Mode**.

8. You are able to apply any kind of head from the library after a head is attached to the character in Step 6.



G3 Character (New for v3)

The default **G3** (generation 3) characters are created with **CrazyTalk Animator Version 3, or above**. They are built with fixed regulated bone structures. Therefore, motions can be exchanged between them if they are of the same species.



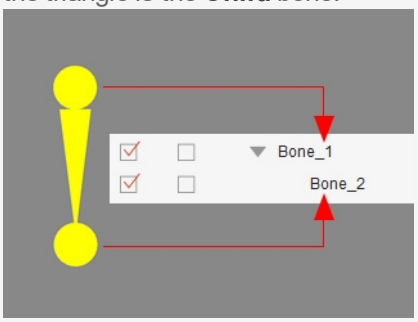
Theory of G3 and Free Bone Characters

The theory of the **G3** or **Free-bone** characters is based on the **Bone-rig** technique.



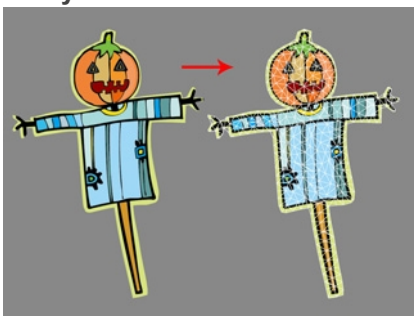
Note:

- Please note that the bone at the bottom side of the triangle is the **Parent** bone while the one at the tip point of the triangle is the **Child** bone.

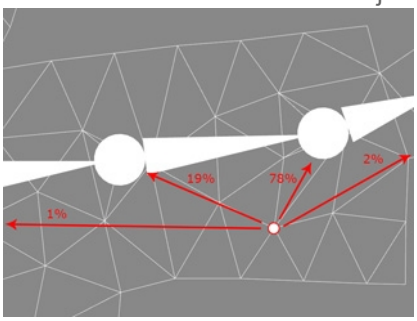


- The triangle between two bones is actually **Not a Bone**. It is only an indication for showing the direction of the bone string and the connection between bones.

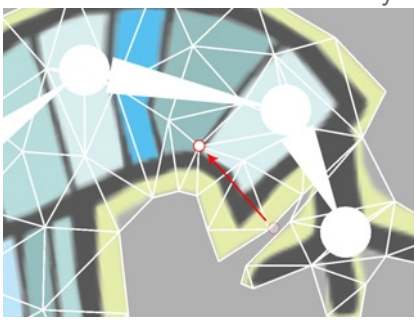
1. **CrazyTalk Animator** first subdivides the loaded image into numerous triangles.



2. Afterwards, **CrazyTalk Animator** calculates the influence weights for each endpoint of the triangles in accordance with their distance to the adjacent bones.

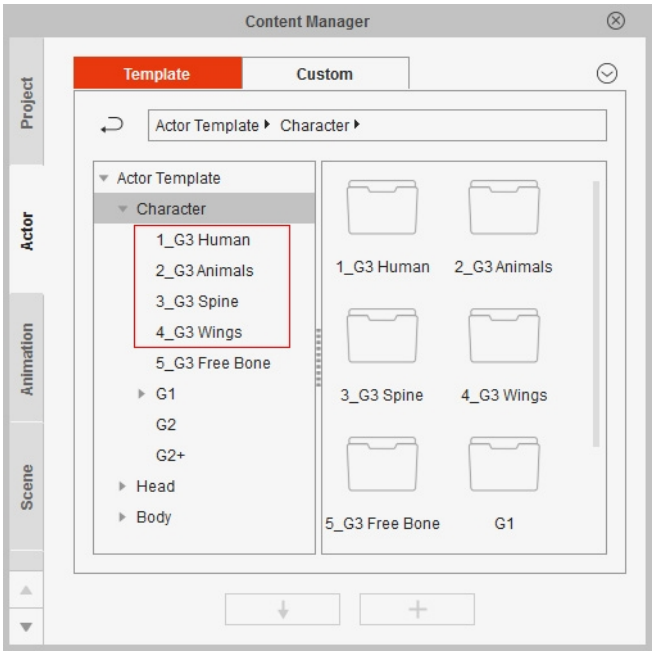


3. When the bones offset or rotate by **IK** or **FK** methods, the image will thus be driven to distort and animate.

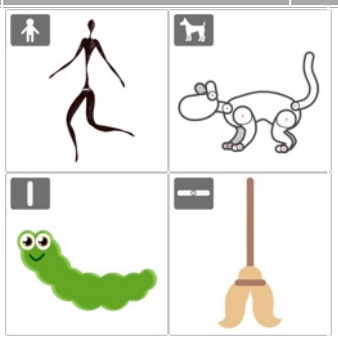


G3 Character Types

The **G3** characters are divided into **G3 Human**, **G3 Animals**, **G3 Spine**, and **G3 Wings**.



The thumbnails and paths of the characters are as described in the table below:

Assets	Thumbnail	Location (default)	Description
Template Bone Characters		• **Windows XP** - C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\	• The thumbnail of the template bone character can also be marked with various entities such as human, quadruped animal, worms, or simply the look of the bones.

Motion Compatibility

The embedded **G3** characters can only use the motions that are specially created for them. They **CANNOT** be applied with 2D or 3D motions because these motions are specially made for **G2** characters.

For the **G3** characters, they are compatible with the template motions that are created for them in the library.

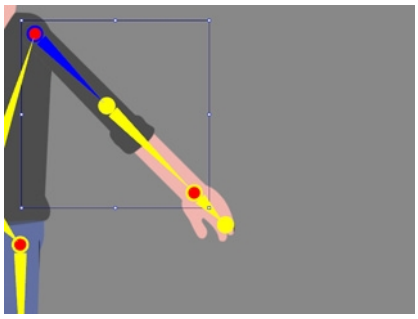


Transforming Parts, Sprites, or Bones (New for v3)

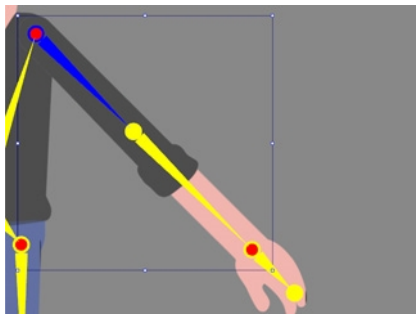
In the **Composer Mode**, for **G3** and **Free Bone Characters**, you are free to select body parts, sprites, or bones with 3 different tools for further adjustments. You can find them in the **General Toolbar**.



1. **Transform Part** (shortcut key: **1**): Press down this button in order to select a body part, including the bone and the sprite attached to the bone. Then, you are able to transform this part.

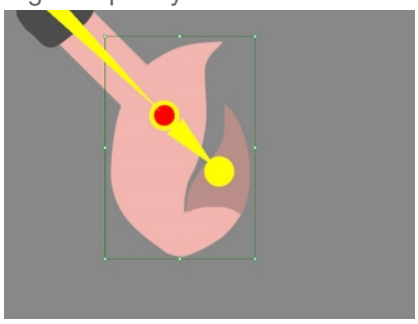


The bone and the sprite are both selected

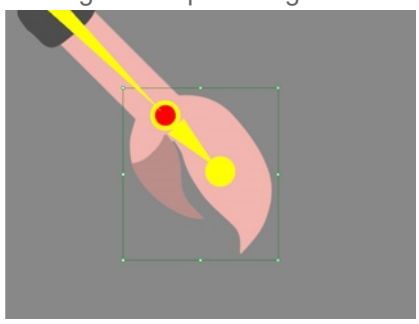


Simultaneously transform the bone and the sprite.

2. **Transform Sprite** (shortcut key: **2**): Press down this button in order to select a target sprite and transform it. You might frequently use this tool and transform a sprite after loading a new sprite image.



The sprite is selected



Transform the sprite.

3. **Transform Bone** (shortcut key: **3**):
   A. **Transforming Bone and Child Bones** - Press down this button in order to only select the bone. You are free to transform the selected bone, including offsetting and rotating without influencing the sprite attached to it. This method is applied often after you apply a sprite image and the bone is not propperly overlapped onto it.



The bone is selected



Transform the bone.

   B. **Transforming Bone without Influencing Child Bones** - Press down this button in order to only select the bone. By pressing down the **Shift** key on the keyboard and dragging the bone, you can transform the bone while the child bones are left untouched.

	
The bone is selected	Transform the bone without influencing the child bones.

The Color Code of Bones (New for v3)

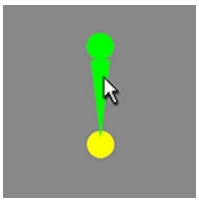
In **CrazyTalk Animator**, the colors of bones for **G2** and **G3** have special meanings. You are able to identify the status of the bones by means of color.

Composer Mode (G2 and G3 Characters)

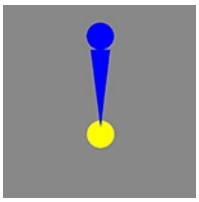
For G2 and G3 characters



The neutral status of a bone after it is created.
Please note that the neutral color can be manually changed.



The bone that is highlighted when the mouse cursor hovers over it. It means that the bone is ready to be selected by clicking on it.



The bone that is selected. You can transform the bone afterwards.

For G3 characters



The bone that is the root of a layer in a bone structure, which contains bone and sprite.



The bone that does not control any sprite image. It may be moved out of the sprite image.



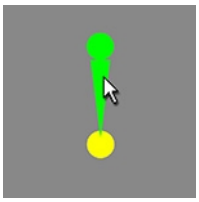
The bone is locked and can not be selected from the working area.

Stage Mode (G3 Characters)

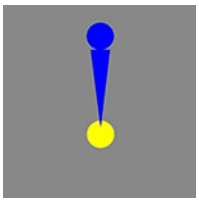
When a G3 character is to be animated with the **Motion Key Editor**, the color code of the bones are as described below:



The neutral status of a bone.
Please note that the neutral color can be manually changed.



The bone that is ready to be selected by clicking on it.



The bone that is selected.



The bone that does not control any sprite image. It may be moved out of the sprite image.



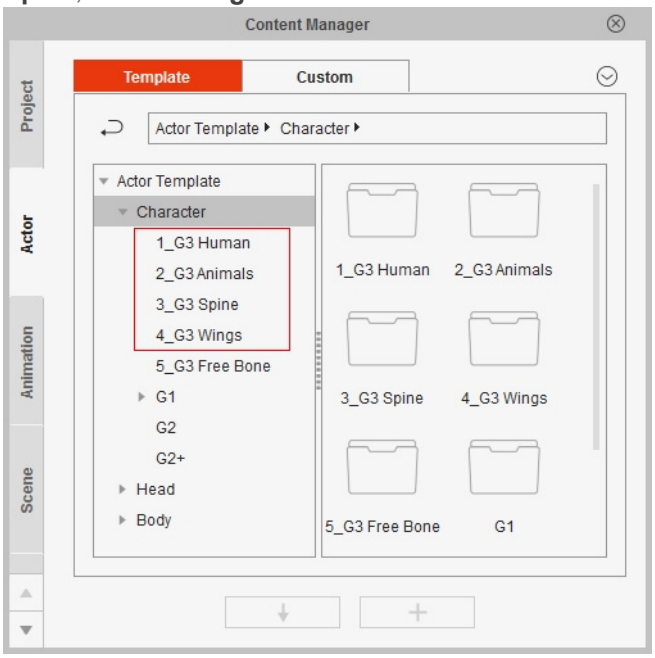
The bone is locked and can not be selected from the working area.



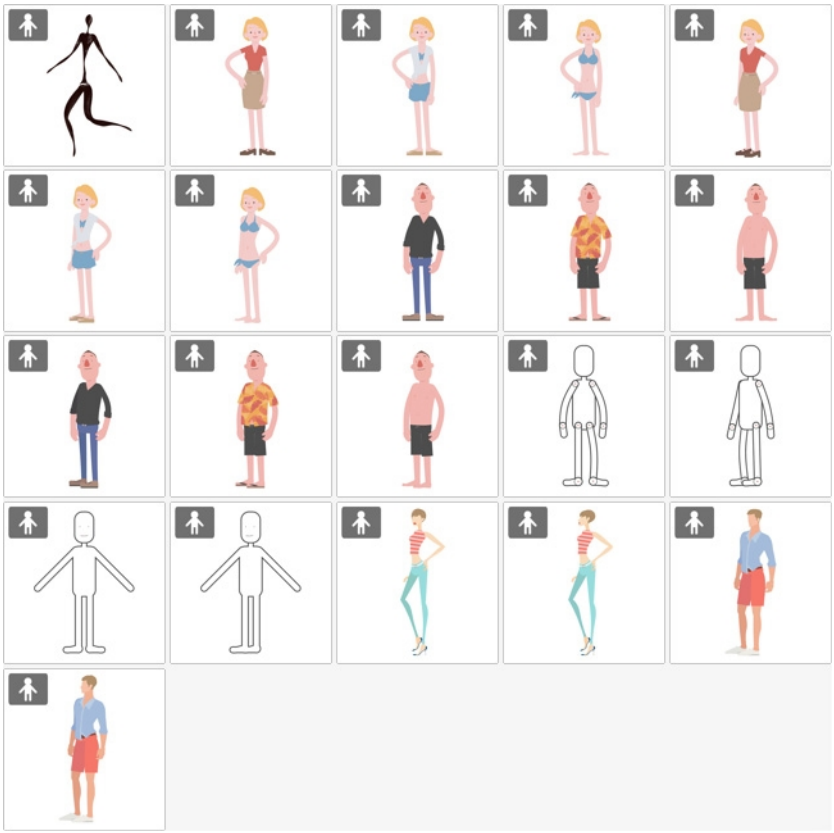
The bone that is the root bone of an **IK** chain. It can be rotated but cannot be moved.

Using G3 Characters (New for v3)

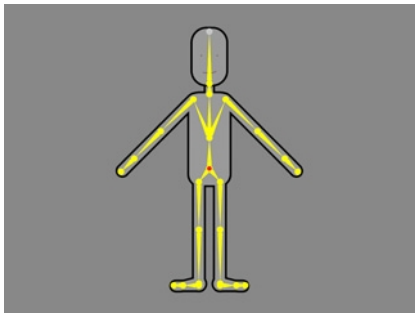
The **G3** characters embedded in **CrazyTalk Animator V3** are divided into four categories - **G3 Human**, **G3 Animals**, **G3 Spine**, and **G3 Wings**.



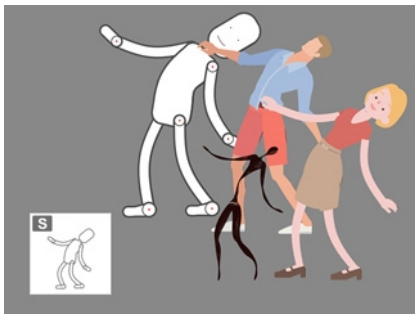
G3 Human



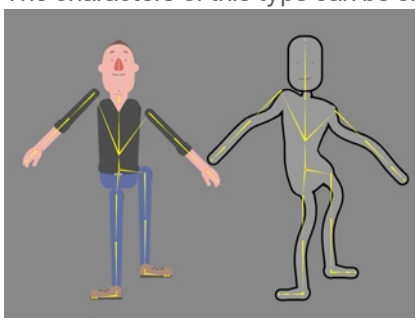
- The characters in this sub-folder are constructed with identical bone structures.



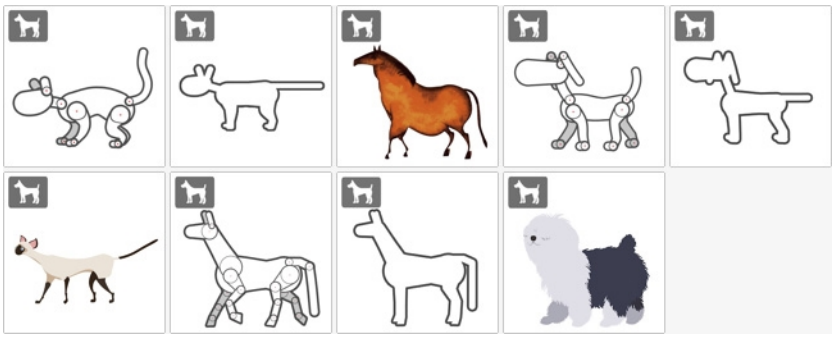
- Because the bone structures are the same, then the animations for them are sharable.



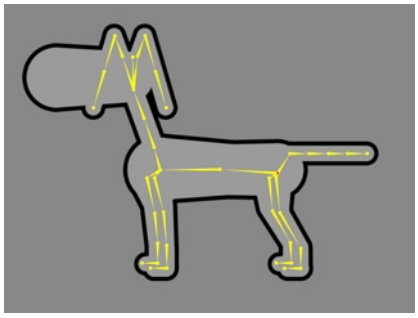
- The characters of this type can be one-piece, or dissected ones.



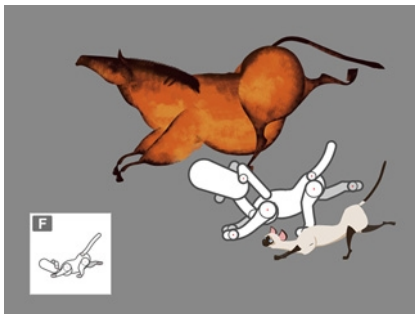
G3 Animals



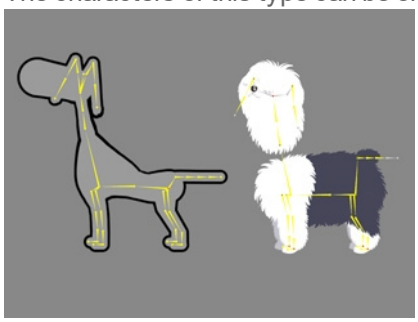
- The characters in this sub-folder are constructed with identical bone structure.



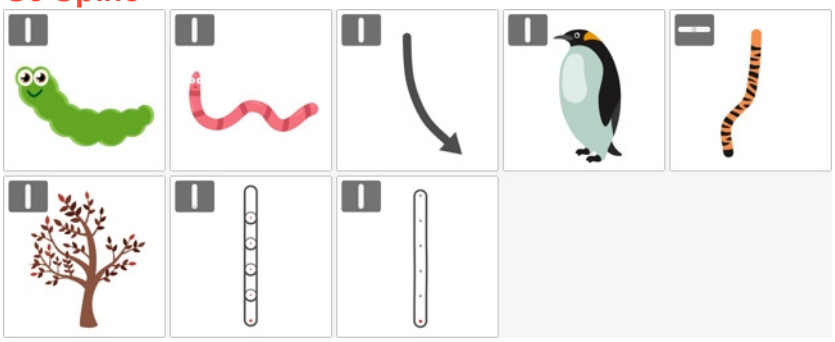
- Because the bone structures are the same, then the animations for them are sharable.



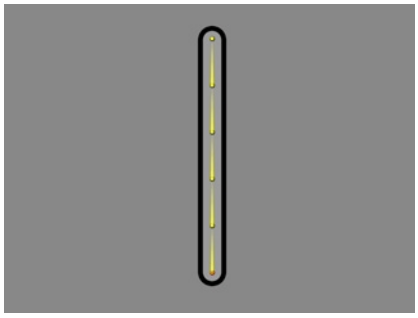
- The characters of this type can be one-piece, or dissected ones.



G3 Spine



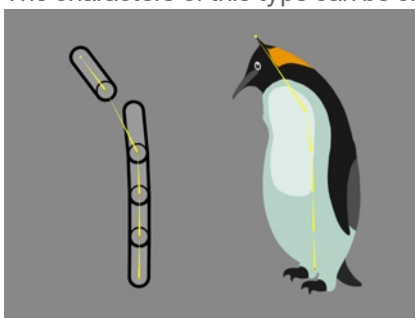
- The characters in this sub-folder are constructed with identical bone structure.



- Because the bone structures are the same, then the animations for them are sharable.



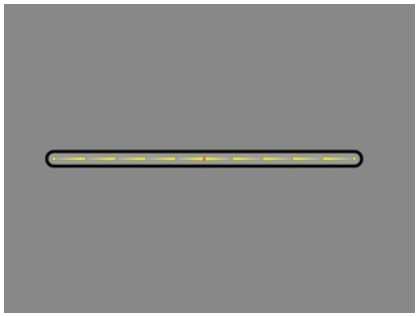
- The characters of this type can be one-piece, or dissected ones.



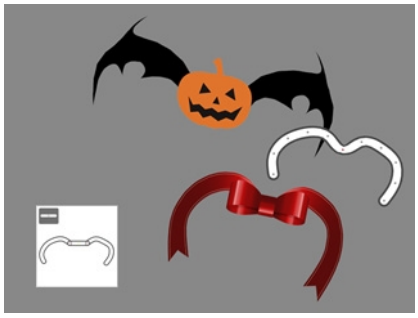
G3 Wings



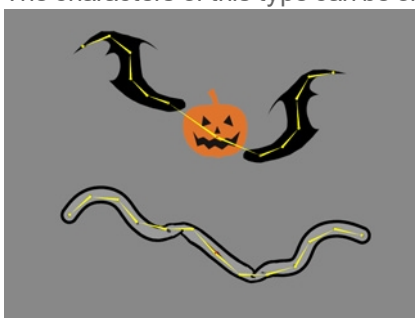
- The characters in this sub-folder are constructed with identical bone structure.



- Because the bone structures are the same, then the animations for them are sharable.



- The characters of this type can be one-piece, or dissected ones.



Customizing Characters Using the Sprite Editor (New for v3)

Pro & Pipeline

In addition to applying a template bone character from the **Content Manager**, you are also allowed to create customized template bone characters with the **Sprite Editor**. By changing the element image in the sprite of a default template bone character, you can create unlimited characters with custom images.

Note:

The supported image formats are: **PNG**, **BMP**, **GIF**, **TGA**, **JPG**, **JPEG**.

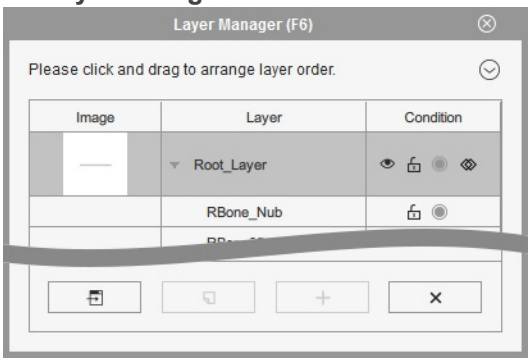
One-piece Replacement

In this section, the initial character contains only one sprite and the entire sprite is driven by its original bone structure.

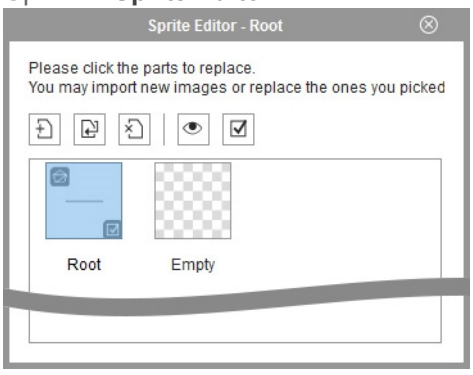
1. Apply a template bone character from the **Content Manager** and make sure it is selected.



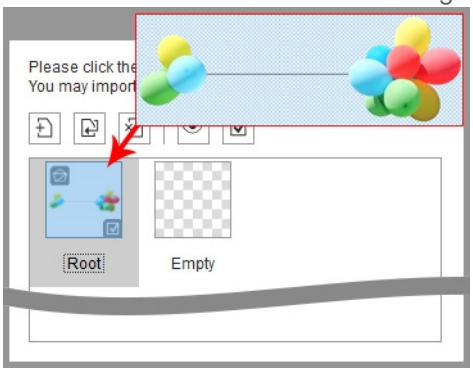
2. Switch to **Composer Mode**.
3. Select the desired character body part for replacement. It is highly suggested that you select the desired part from the **Layer Manager**.



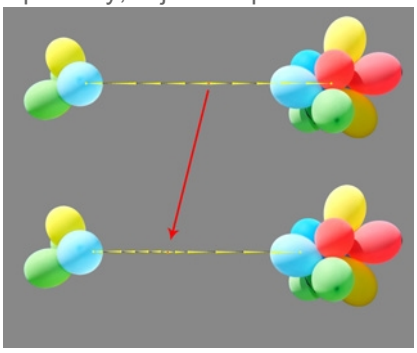
4. Open the **Sprite Editor**.



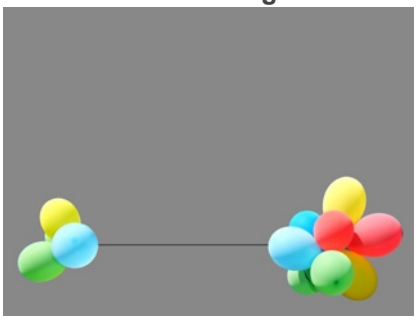
5. Double-click on the element thats being replaced and load a prepared image to replace the original image.



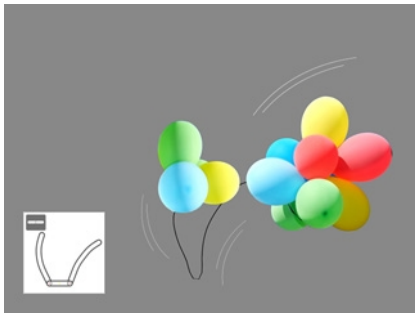
6. Leave the **Sprite Editor**.
7. Optionally, adjust the position and angle of the bones if necessary.



8. Switch back to the **Stage Mode**.



9. The template bone character is ready for applying the embedded animations that are compatible with the original character before the replacement.



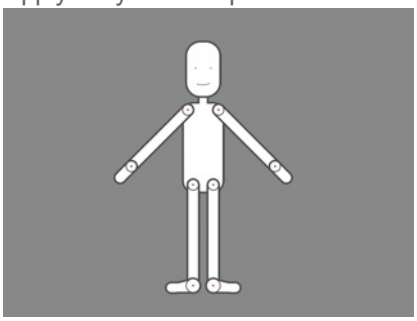
Layered Body Parts Replacement

In this section, the initial character contains several body part sprites. You need to replace them in order to create a custom template bone character.

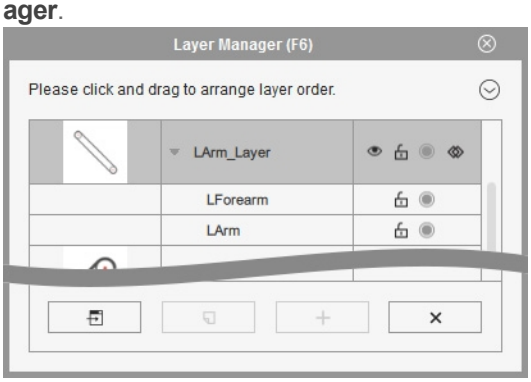
Note:

It is not necessary that you replace every element in every sprite.

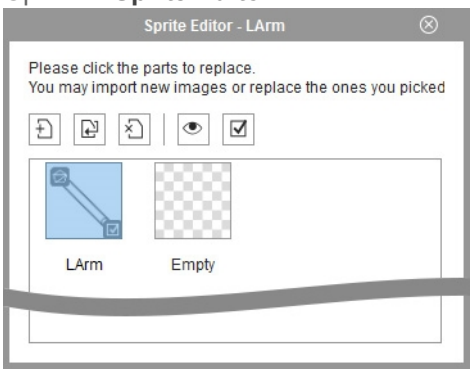
1. Apply a layered template bone character from the **Content Manager** and make sure that it is selected.



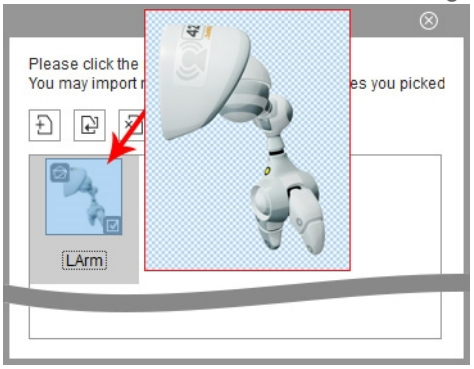
2. Switch to **Composer Mode**.
3. Select the desired character body part for replacement. It is highly suggested that you select from the **Layer Manager**.



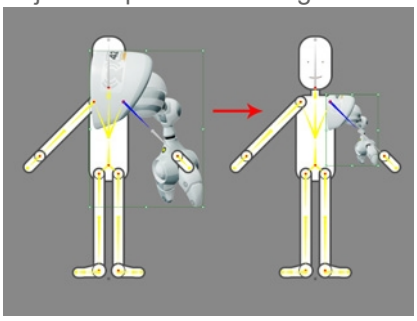
4. Open the **Sprite Editor**.



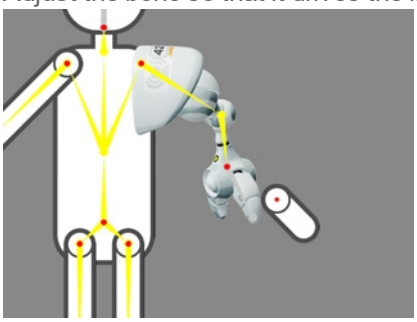
5. Double-click on the element that's being replaced and load a prepared image to replace the original image.



6. Adjust the position and angle of the sprite if necessary.

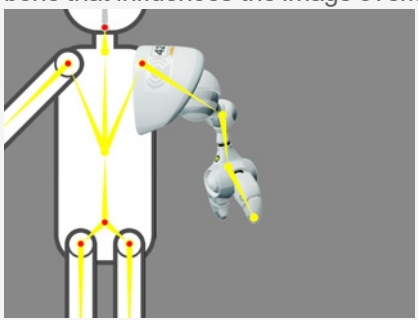


7. Adjust the bone so that it drives the image movement.

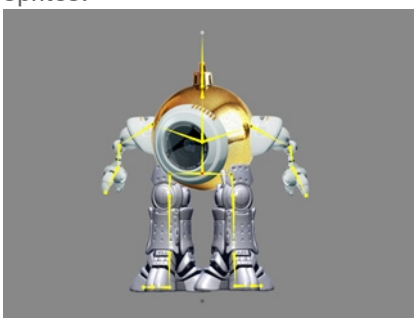


Note:

- In this example, the hand bone turns gray because it is moved outside of the hand sprite.
- Select the hand sprite and delete it in order to remove the layer of the hand, this will release the gray bone that influences the image overlapped under it.



8. Select another body part and repeat from Step 3 to Step 7 in order to replace the elements of the other body part sprites.

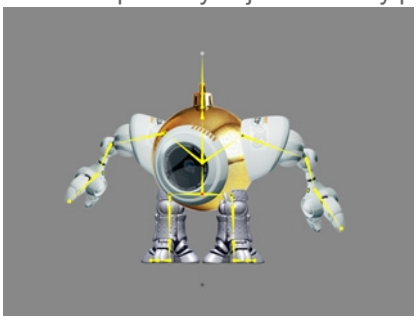


Note:

- You do not need to replace elements of every body part. **CrazyTalk Animator** allows you to leave a bone without a sprite to animate.
- If you want to completely remove the original head of the template bone character, then please click the **Remove Head** button on the Toolbar (In this example, the head is completely removed by this method).

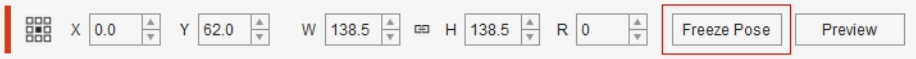


9. You can optionally adjust the body parts by selecting the target layer from the Layer Manager and transform it.

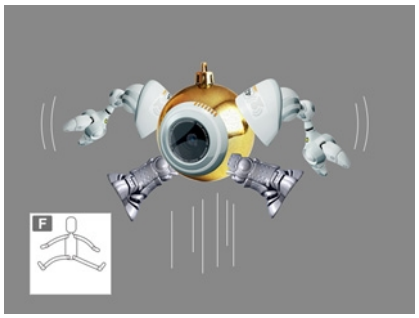


Note:

Make sure that the **Freeze Pose** button is **OFF** when you wish to transform the body parts.

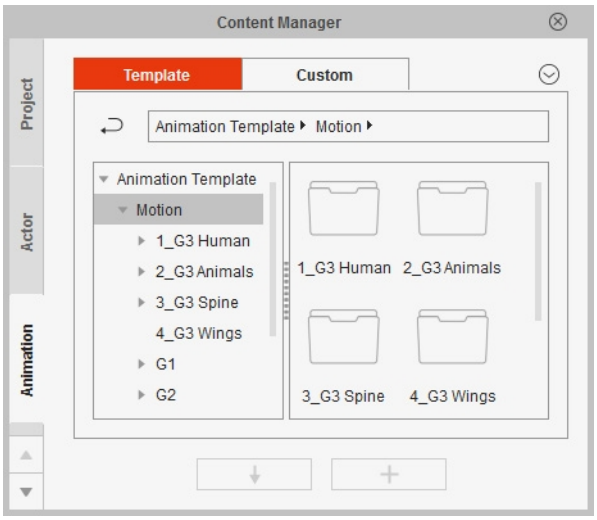


10. Switch back to the **Stage Mode** and the custom template bone character will be ready for applying the embedded animations that have been made compatible with the original character, before the replacements.



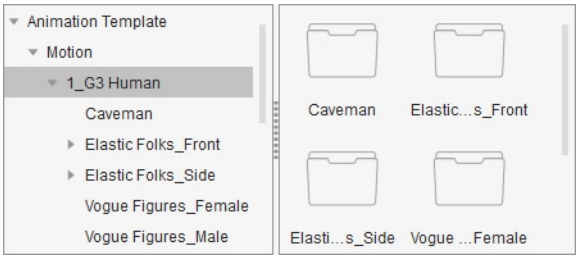
Applying G3 Motion Templates (New for v3)

In **CrazyTalk Animator**, various motion templates in different categories are specially made for certain embedded template bone characters. These motions **CANNOT** be applied to **G1** or **G2** characters, nor to template bone characters with different bone structures.



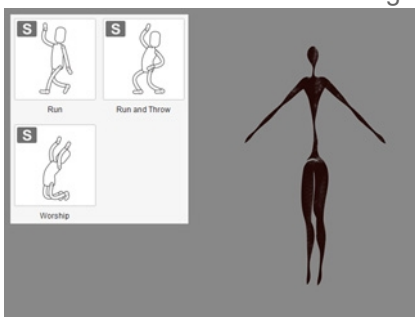
G3 Human

The motions for human are divided into different sub-categories - **Caveman**, **Vogue Figures_Female**, **Vogue Figures_Male**, **Ealstic Folks_Front** and **Ealstic Folks_Side**.



Cave man

The motions in this folder are designed for the **Caveman** character.



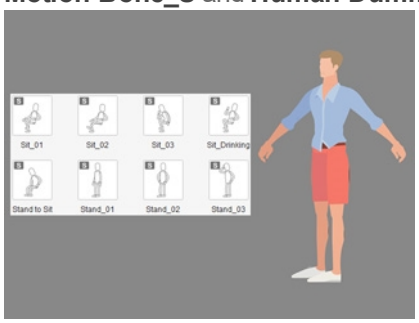
Vogue Figures_Female

The motions in this folder are designed for the **Vogue Figures_Female_S** character, but can also be applied to the **Human Motion Bone_S** and **Human Dummy_S** characters.



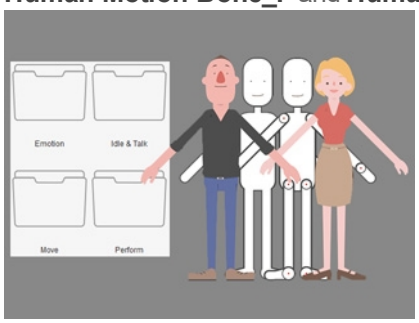
Vogue Figures_Male

The motions in this folder are designed for the **Vogue Figures_S** character, but can also be applied to the **Human Motion Bone_S** and **Human Dummy_S** characters.



Ealstic Folks_Front

The motions in this folder are designed for the **Elastic Folks_Male_01~03_F**, **Ealstic Folks_Female_01~03_F**, **Human Motion Bone_F** and **Human Dummy_F**characters that are facing the front.



Ealstic Folks_Side

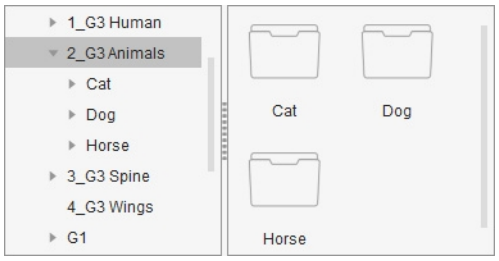
The motions in this folder are designed for the **Elastic Folks_Male_01~03_S**, **Ealstic Folks_Female_01~03_S**, **Human Motion Bone_S** and **Human Dummy_S**characters that are facing the side.



Note:

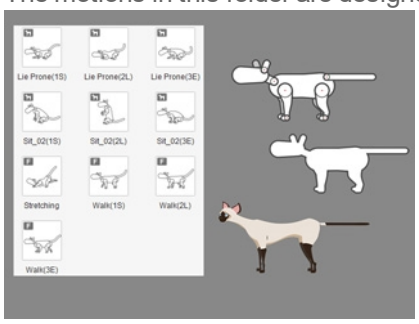
- Although they are made specifically for certain characters, they are allowed to be applied to any other **G3** template bone human character because they are built with same bone structure.
- The letter marked on the upper-left corner of the template thumbnail indicates that the motion is made for characters facing front (**F**) or facing side (**S**).

G3 Animals



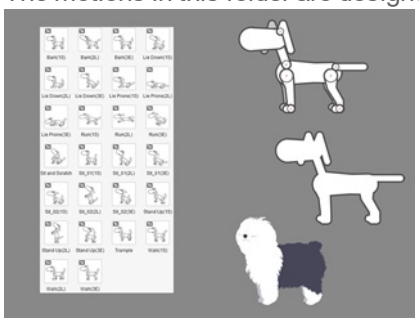
Cat

The motions in this folder are designed for **Cat** characters.



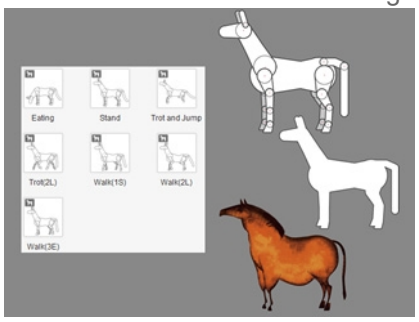
Dog

The motions in this folder are designed for **Dog** characters.



Horse

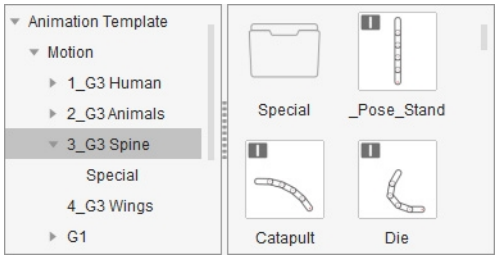
The motions in this folder are designed for **Horse** characters.



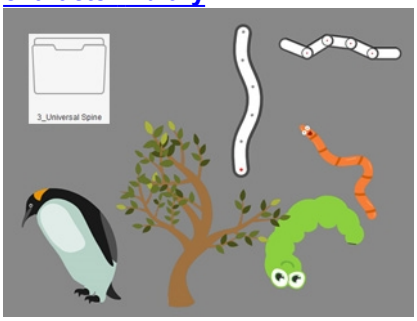
Note:

- Although they are made for certain characters, they are allowed to be applied to any other **G3** template bone quadruped character because they are built with same bone structure.

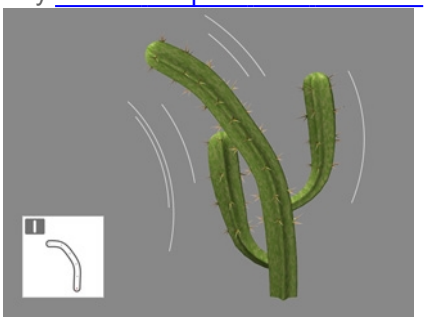
G3 Spine



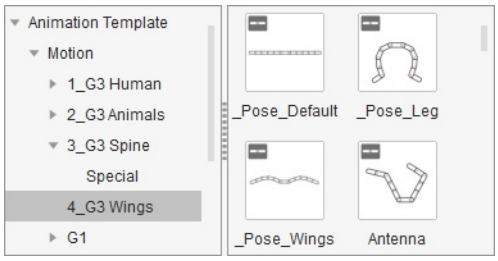
- These motion templates can be applied to the template bone characters under the **Universal Spine folder in the character library**.



- Any custom template bone character with the same bone structure can be applied with these motion templates.



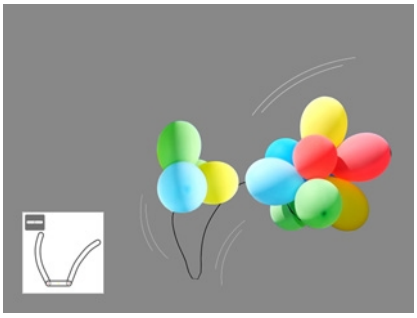
G3 Wings



- These motion templates can be applied to the template bone characters under the **Wings folder in the character library**.



- Any custom template bone character of the same bone structure can be applied with these motion templates as well.



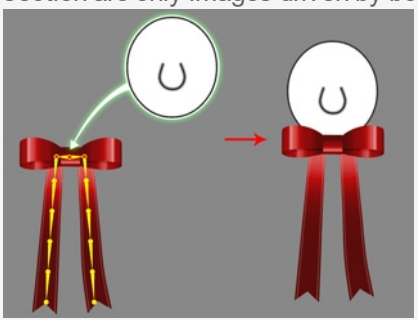
Free Bone Character (New for v3)

The default **Free Bone** characters can be created with **CrazyTalk Animator Version 3, or above**. It is built with free structures of bones. Therefore, the character can be human or non-human.



Note:

Basically, the **Free Bone Characters** do not have any heads. You must attach a head in the **Composer Mode** onto one of the bones of the bone structure in order to have the character talk. The heads in the illustration at the beginning of this section are only images driven by bones and do not have the ability to talk.



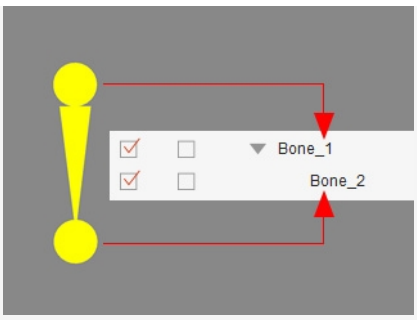
Theory of G3 and Free Bone Characters

The theory of the **G3** or **Free Bone** Characters is based on a **Bone-rig** technique.



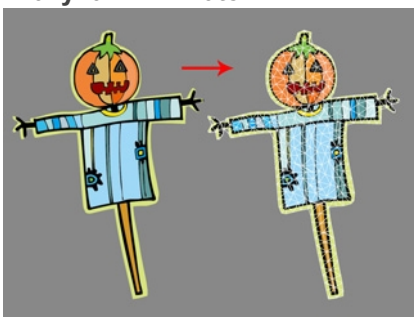
Note:

- Please note that the bone at the bottom side of the triangle is the **Parent** bone while the one at the tip point of the triangle is the **Child**.

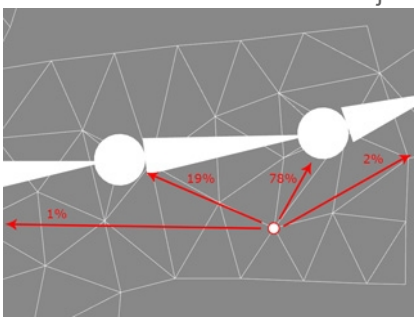


- The triangle between two bones is actually **Not a Bone**. It is only an indication for showing the direction of the bone string and the connection between bones.

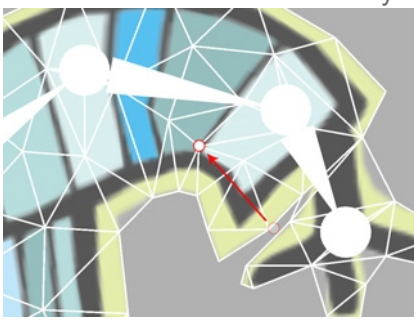
1. **CrazyTalk Animator** first subdivides the loaded image into numerous triangles.



2. Afterwards, **CrazyTalk Animator** calculates the influence weights for each endpoint of the triangles in accordance with their distance to the adjacent bones.

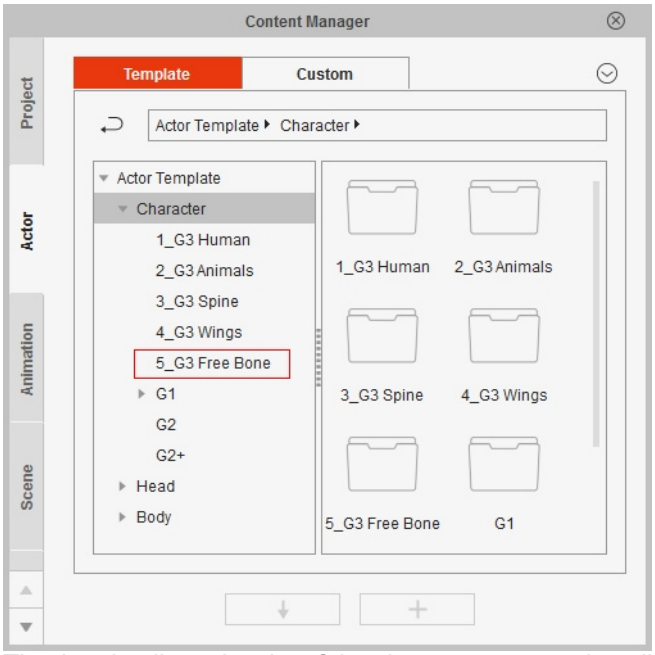


3. When the bones offset or rotate by IK or FK methods, the image will thus be driven to distort and animate.



Free Bone Character Library

The **Free Bone** characters embedded can be found in the **G3 Free Bone** library.



The thumbnails and paths of the characters are as described in the table below:

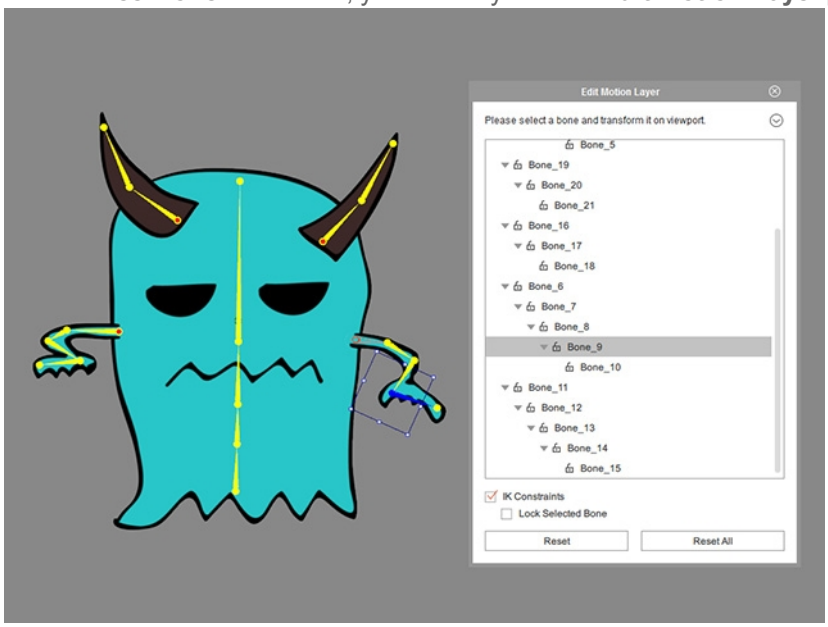
Assets	Thumbnail	Location (default)	Description
Free Bone Characters		• **Windows XP** - C:\Documents and Settings\All Users \Documents\Reallusion\Template\CrazyTalk Animator3 Template\Character\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template \CrazyTalk Animator3 Template\Character\	• A bone structure of this kind can be freely constructed. There are no specific rules for them. • The types of source images for this kind of bones are unlimited and can be anything.

Note:

Please note that even though **Free Bone** characters are provided in the **Content Manager**, you are still free to create any kind of character with different bone structures.

Motion Compatibility

For the **Free Bone** characters, you can only use the **Edit Motion Layer** panel to do the key-frame animation for them.

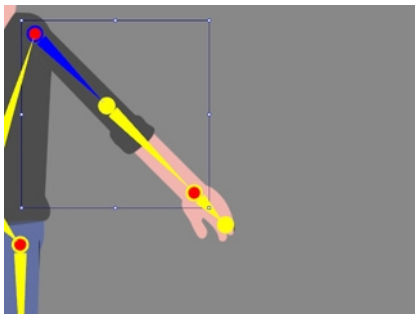


Transforming Parts, Sprites, or Bones (New for v3)

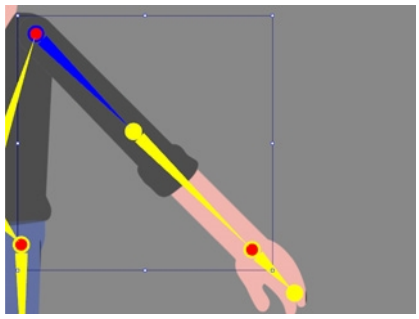
In the **Composer Mode**, for **G3** and **Free Bone Characters**, you are free to select body parts, sprites, or bones with 3 different tools for further adjustments. You can find them in the **General Toolbar**.



1. **Transform Part** (shortcut key: **1**): Press down this button in order to select a body part, including the bone and the sprite attached to the bone. Then, you are able to transform this part.

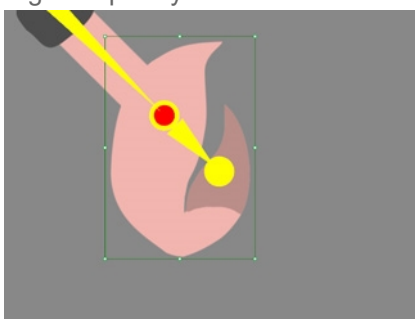


The bone and the sprite are both selected

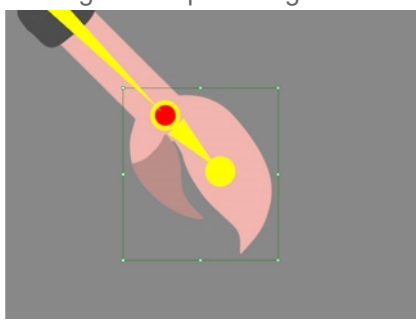


Simultaneously transform the bone and the sprite.

2. **Transform Sprite** (shortcut key: **2**): Press down this button in order to select a target sprite and transform it. You might frequently use this tool and transform a sprite after loading a new sprite image.



The sprite is selected



Transform the sprite.

3. **Transform Bone** (shortcut key: **3**):
   A. **Transforming Bone and Child Bones** - Press down this button in order to only select the bone. You are free to transform the selected bone, including offsetting and rotating without influencing the sprite attached to it. This method is applied often after you apply a sprite image and the bone is not propperly overlapped onto it.



The bone is selected



Transform the bone.

   B. **Transforming Bone without Influencing Child Bones** - Press down this button in order to only select the bone. By pressing down the **Shift** key on the keyboard and dragging the bone, you can transform the bone while the child bones are left untouched.



The bone is selected



Transform the bone without influencing the child bones.

The Color Code of Bones (New for v3)

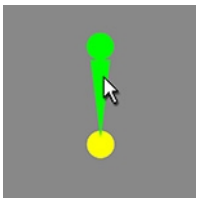
In **CrazyTalk Animator**, the colors of bones for **G2** and **G3** have special meanings. You are able to identify the status of the bones by means of color.

Composer Mode (G2 and G3 Characters)

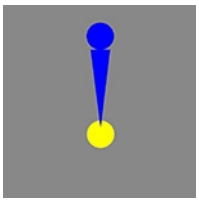
For G2 and G3 characters



The neutral status of a bone after it is created.
Please note that the neutral color can be manually changed.



The bone that is highlighted when the mouse cursor hovers over it. It means that the bone is ready to be selected by clicking on it.



The bone that is selected. You can transform the bone afterwards.

For G3 characters



The bone that is the root of a layer in a bone structure, which contains bone and sprite.



The bone that does not control any sprite image. It may be moved out of the sprite image.



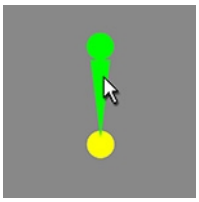
The bone is locked and can not be selected from the working area.

Stage Mode (G3 Characters)

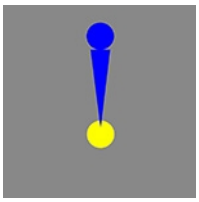
When a G3 character is to be animated with the **Motion Key Editor**, the color code of the bones are as described below:



The neutral status of a bone.
Please note that the neutral color can be manually changed.



The bone that is ready to be selected by clicking on it.



The bone that is selected.



The bone that does not control any sprite image. It may be moved out of the sprite image.



The bone is locked and can not be selected from the working area.



The bone that is the root bone of an **IK** chain. It can be rotated but cannot be moved.

Creating Free Bone Characters (New for v3)

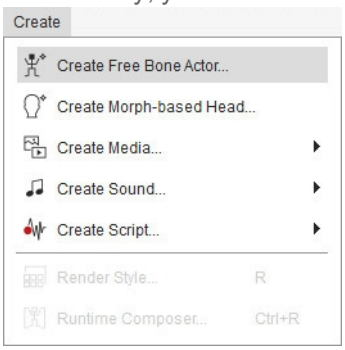
Pro & Pipeline

In addition to use or create template bone characters, you are allowed to create free bone characters manually. The bone structure can be built without any limitation. Almost everything in your custom image thus can be animated with this feature.

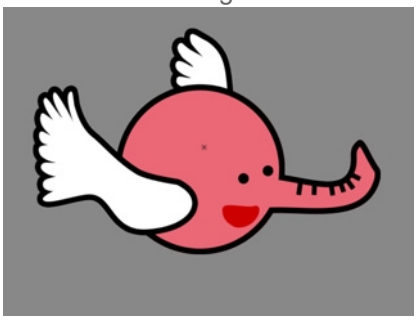
1. Click the **Create Free Bone Actor** button on the Toolbar.



Alternatively, you can start the procedure from the Main menu.



2. Load a custom image.



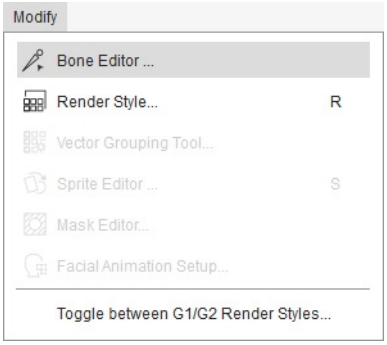
Note:

The bone-rigging function is only available for bitmap images: **JPG**, **BMP** and **PNG**.

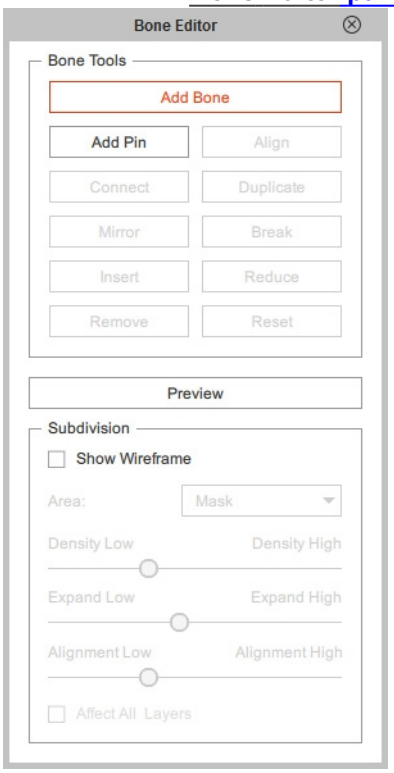
3. **CrazyTalk Animator** will automatically switch to the **Composer Mode**.
4. Press down the **Bone Editor** button on the Toolbar.



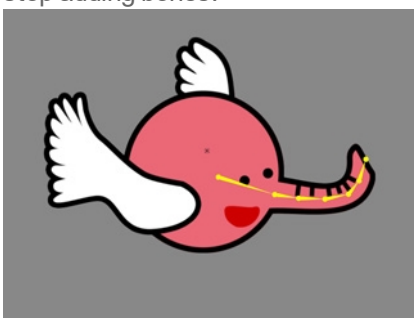
Alternatively, you can launch the editor by the Main menu.



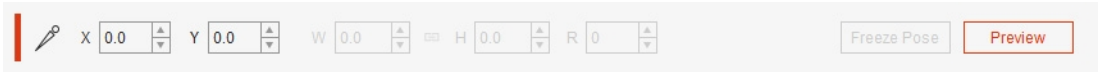
5. You will see the **Bone Editor** panel show on the screen, and the **Add Bone** button On.



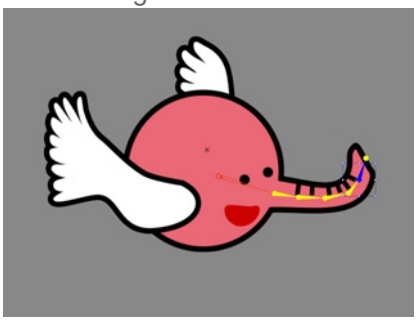
6. Click on the image repetitively where you want it to be controlled by the added new bones. Right-click elsewhere to stop adding bones.



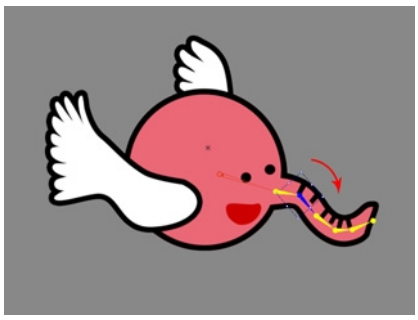
7. Press down the **Preview** button on the Toolbar or the **Preview** button on the **Bone Editor** panel.



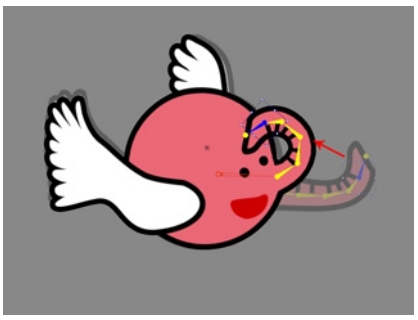
8. Select a target bone.



9. Rotate or drag it to view the animation result by **FK** or **IK** methods.



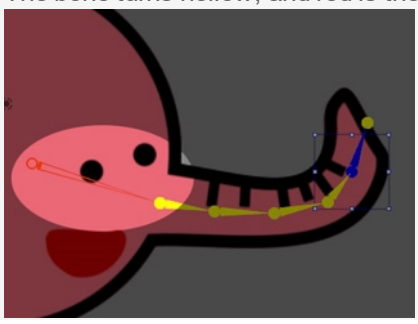
FK method



IK method

Note:

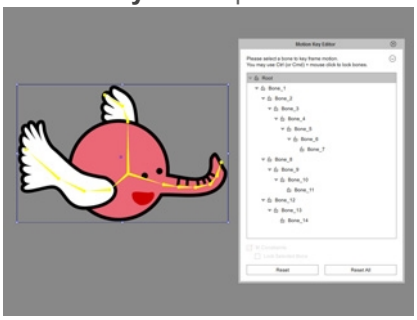
The bone turns hollow, and red is the start bone for the **IK** chain.



10. Adjust the bone structure with the **Bone Editor**.



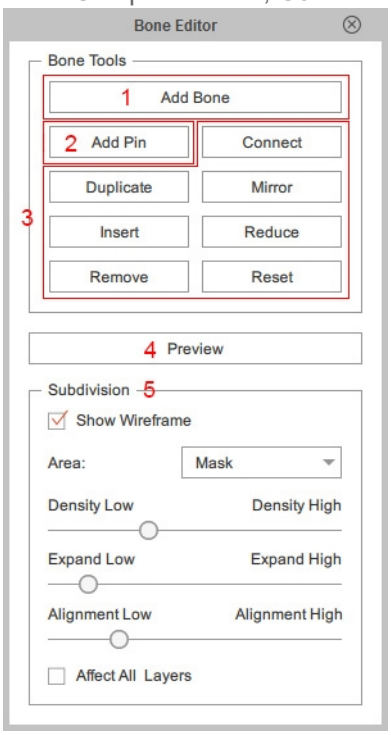
11. Switch back to the Stage mode and the new character is ready to be animated by key-frame animation with the **Motion Key Editor** panel.



Introduction of the Bone Editor Panel (New for v3)

Pro & Pipeline

In the Composer mode, G3 characters' bone structure can be built, edited, and refined by means of the **Bone Editor** panel.

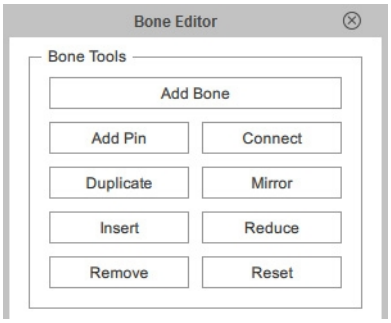


	Name	Description
1	**Add Bone**	Click this button to start adding new bones.
2	**Add Pin**	Click this button to add pins on the image in order that the pinned areas are fixed when you animate bones.
3	**Bone Editing Tools**	These buttons are used to edit the currently selected bone or bones.
4	**Preview**	Press down this button to start previewing the bone setting effects to the image in **IK** or **FK** methods.
5	**Subdivision**	Use the settings in this group to view or edit the subdivided status of the image with triangles.

Editing Bones (New for v3)

Pro & Pipeline

In addition to the **Add Bone** tool for adding new bones you are able to use the other tools such as; **Add Pin**, **Align**, **Connect** and so on in the **Bone Editor** for further editing the existing bone structure.



Note:

The **Add Pin** feature is described in the **Using Pins** section.

Add Bone

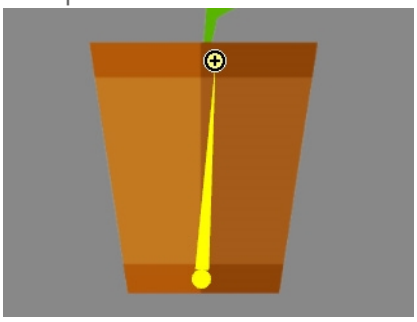
There are two methods for adding bones, one is to add a new bone chain from nothing, the other is to add bones from any existing bone.

Adding Bone Chain from Scratch

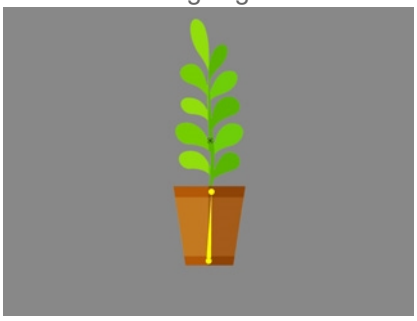
1. Make sure that the **Bone Editor** is opened.
2. Press down the **Add Bone** button.
3. Click on the image which you wish to place the first bone.



4. Move away the mouse and you will see a triangle pointing to your cursor. It indicates the location for the next bone point.



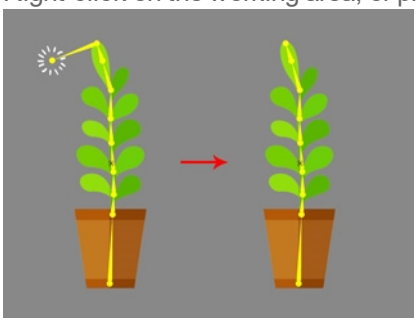
5. Click on the image again and a new child bone will be added.



6. Repeat Step 3 to 5 in order to construct a custom bone chain.

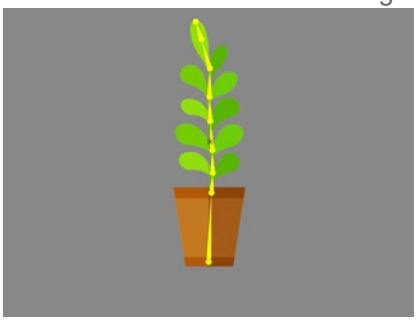


7. Right-click on the working area, or press the **ESC** key to stop adding new bones.

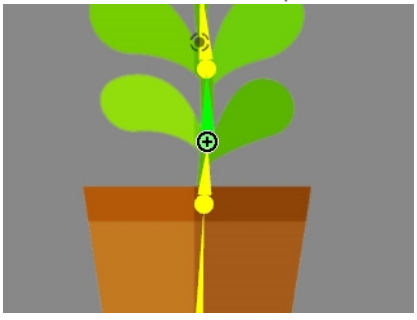


Adding Child Bone from Existing Bone

1. Make sure that there is an existing bone structure.

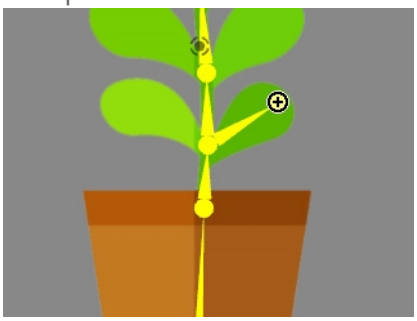


2. Open the **Bone Editor** and press down the **Add Bone** button.
3. Move cursor to the bone point where you want to start a branch bone chain.

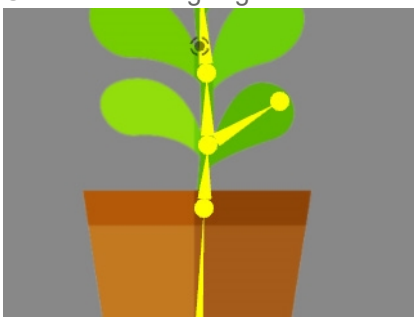


4. Click on it.

5. Move away the mouse and you will see a triangle pointing to your cursor. It indicates the location for the next bone point.



6. Click on the image again and a new child bone will be added.



7. Right-click on the working area, or press the **ESC** key to stop adding new bones.
8. Repeat Step 3 to 7 in order to construct new branch bone chains.



Connect

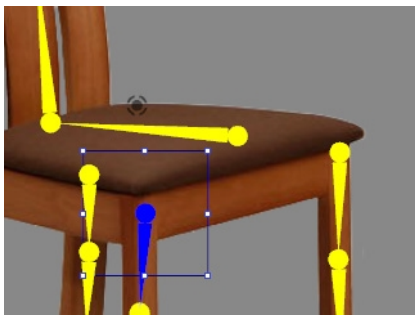
In order to connect isolated bone chains, you can use the **Connect** feature. In addition, you can use this feature to link a child bone to any other parent bone.

1. Make sure you have created isolated bone chains first.

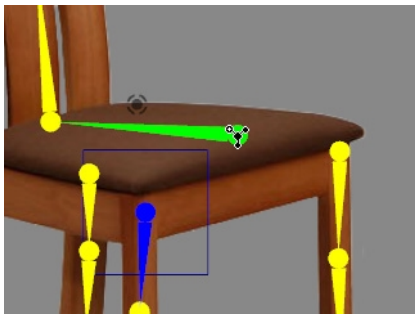


2. Make sure the **Bone Editor** is opened.

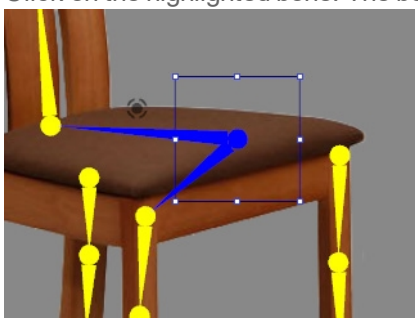
3. Select the root bone of one isolated bone chain.



4. Click the **Connect** button on the **Bone Editor**.
5. Hover on to one bone on the other bone chain.

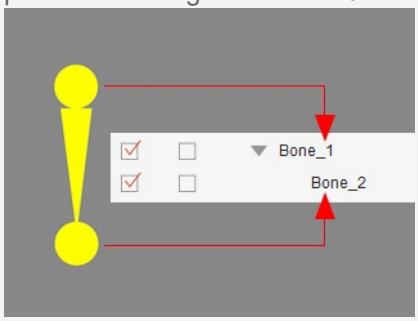


6. Click on the highlighted bone. The bone chain will then turn to be the child bone chain of it.



Note:

- The first selected bone will become a child, and the target bone being connected to it will become the parent one.
- Please note that the bone at the bottom side of the triangle is the **Parent** bone while the one at the tip point of the triangle is the **Child**.



- The triangle between two bones is actually **Not a Bone**. It is only an indication for showing the direction of the bone string and the connection between bones.

7. Repeat the same steps until all isolated bone chains are connected to the desired bone.



8. Optionally, use the **Preview** feature to observe the effects working on the bones with IK and FK methods.



Note:

For better observation, the sizes of the bones in the illustration are decreased.

Duplicate

When you want to generate more bone strings with the same structure under a certain parent bone, you can use the **Duplicate** feature to save a lot of time for building.

1. Build a bone structure to an image.



Note:

For better observation, the color of the bones in the illustration is changed.

2. Select the desired bone as the root for duplicating itself and its child bones.



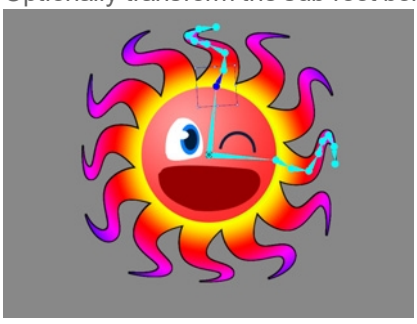
3. Click the **Duplicate** button.



4. Move the newly generated bone root of the chain to the desired location.



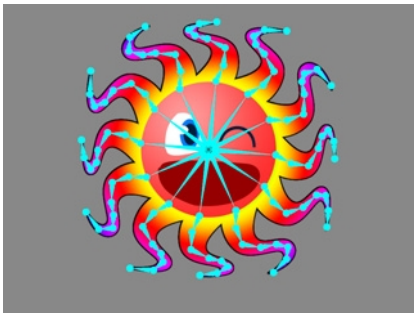
5. Optionally transform the sub-root bone or child bones if necessary.



6. Repeat the same steps to build enough bone strings for the object in the image.



7. Transform the bones in order that they are all located within the image.



Mirror

For a completely symmetric object in an image, you can use the Mirror feature to save time when building bone chains so that it is almost the same structure but flipped.

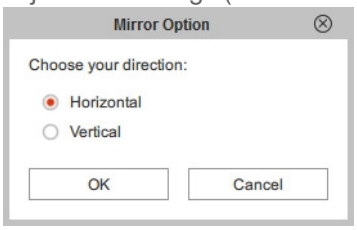
1. Make sure that the bone structure is built for the one side of the object in the image.



2. Make sure that the **Bone Editor** panel is opened.
3. Select the sub-root bone for mirroring.



4. Click the **Mirror** button.
5. In the **Mirror Option** panel, choose one of the radio button in accordance with the symmetrical status of the object in the image (in this case, **Horizontal**).



6. Click the **OK** button to mirror the selected bone and its child bones.



Note:

Slightly transform the newly created bones if necessary.

7. Repeat the same steps until the bones that should be mirrored are done.

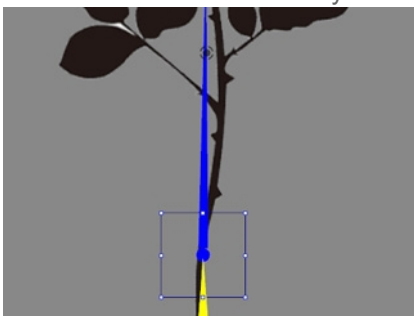


Insert

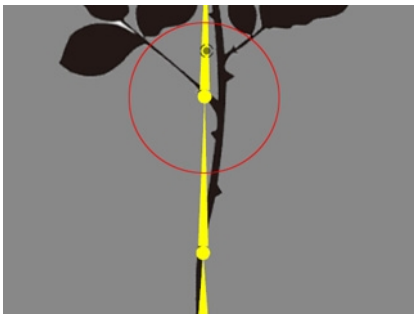
Too few bones can cause low-quality distorting or bending of the image. You can insert more bones between existing bones in order to smooth the image distortion.



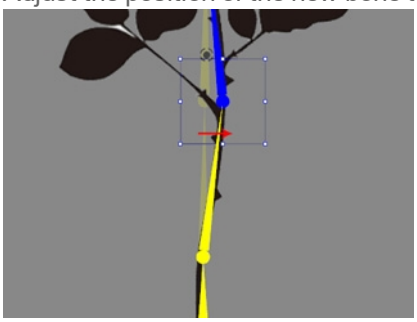
1. In the Composer mode, make sure that the **Bone Editor** is opened.
2. Select the bone under which you want to insert new child bone.



3. Click the **Insert** button on the **Bone Editor**. A child bone will thus be insert under the selected bone node.



4. Adjust the position of the new bone to fit the object in the image.



5. Repeat the same steps to add more bones.

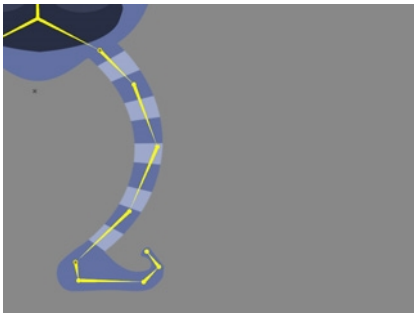


6. Optionally press down the **Preview** button to observe the enhanced distortion or bending result with the **IK** or **FK** method caused by the inserted bones.

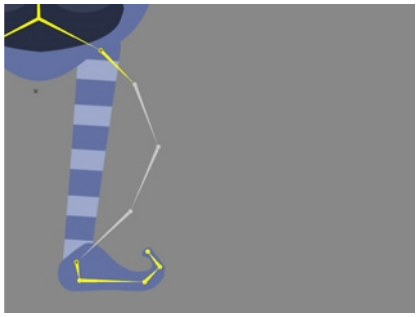


Reduce

Occasionally, after the sprite image is replaced, you can find that there is no need to have many bones. You can then use the **Reduce** feature to remove middle bones within a bone chain.

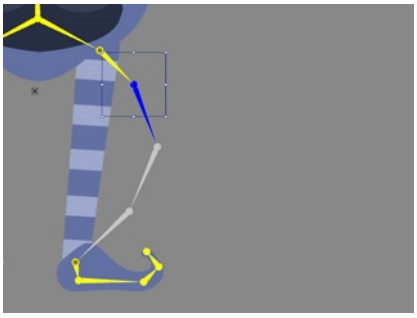


The original sprite image

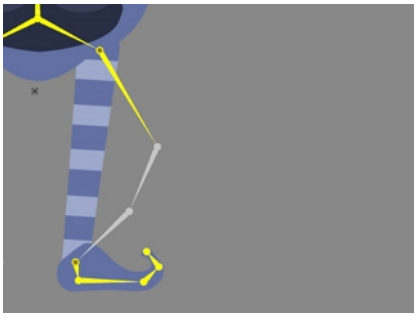


The sprite image is replaced and there is no need to have the same number of bones

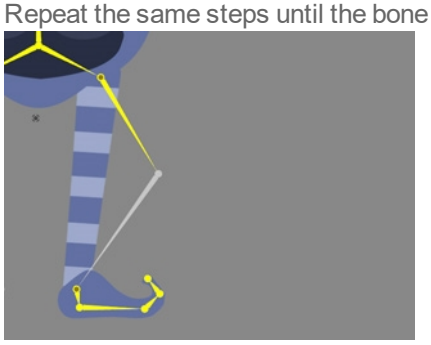
1. In the Composer mode, make sure that the **Bone Editor** is opened.
2. Select the bone that is redundant.



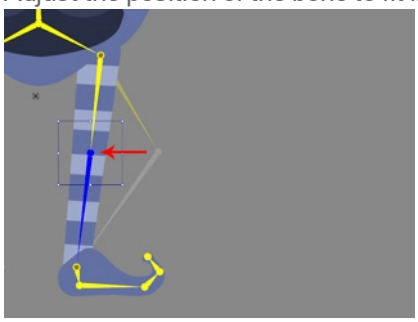
3. Click the **Reduce** button and the bone will be deleted without affecting the child bones.



4. Repeat the same steps until the bone is optimized.

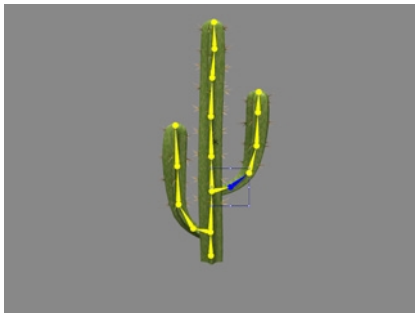


5. Adjust the position of the bone to fit into the new image.



Remove and Reset

- If you wish to remove one bone (or pin) and all its child bones, then select the bone (or pin) and click the **Remove** button.



Select a bone from the bone structure for removing the bone and its child bones



The bone and its offspring are removed after the **Remove** button is clicked.

Note:

The shortcut key for the **Remove** feature: **Delete** key.

- However, by clicking the **Reset** button, you can remove the entire bone structure and pins.



The original sprite image



The bones and pins are completely removed

Using Pins (New for v3)

Pro & Pipeline

While the bone is used to bend or distort the object in the image, the pin is used to keep the object from being driven to animate. It is very useful when you wish to have specific areas of the object to be fixed.

Using Pins for Static Areas of the Image

The basic idea of using pins is to fix up desired areas of the image from being driven by any bone.

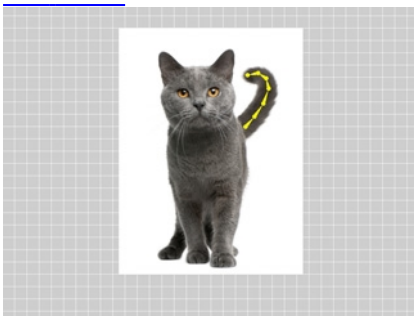
1. Click the **Create Free Bone** button on the Toolbar.



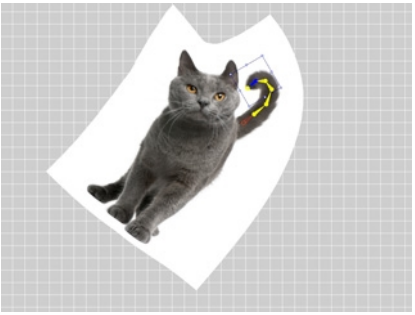
2. Load an image. **CrazyTalk Animator** will automatically switch to the **bone-adding** mode in the **Composer**.



3. Add bones.



4. Press down the Preview button and view the animation result with the **IK** or **FK** methods.



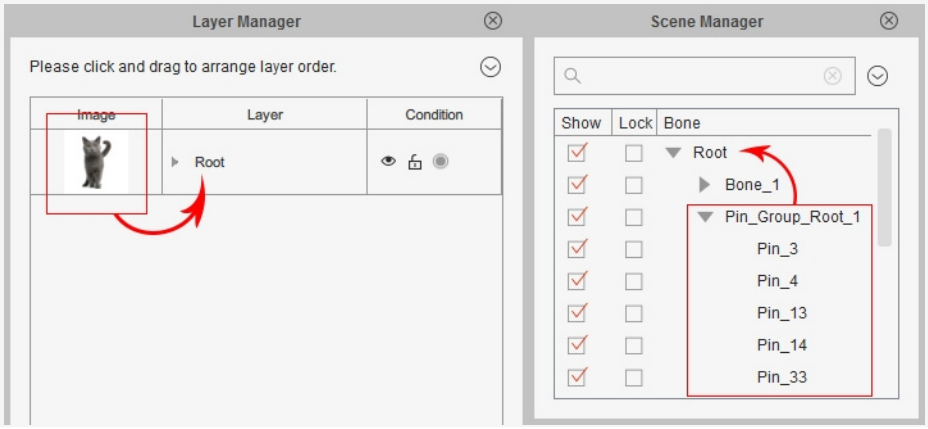
You will see that the entire image is driven to animate.

5. Press up the Preview button and **deselect the bone**.

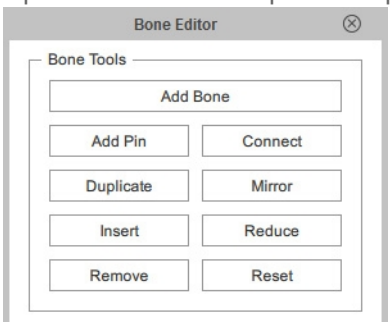


Note:

Because the image is attached to the **Bone Root**, deselect any bone to make sure that the pins are attached to the **Bone Root**.



6. Open the **Bone Editor** panel and press down the **Add Pin** button.



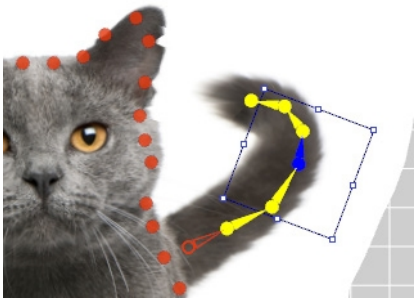
7. Click on the image to add pin to keep the pinned part fixed.



8. Preview again. You will see that most images are kept static.



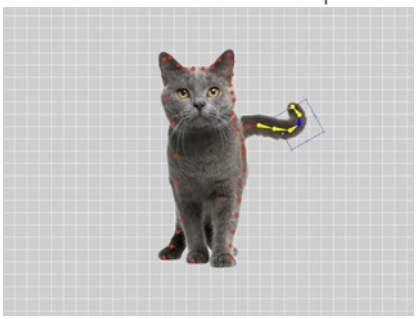
The images that are close to the bone can still move a little (in this case, the side of the cat's face and ear).



9. Open the **Mask Editor** and filter off the unnecessary part of the image.



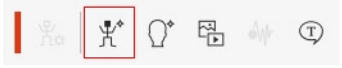
10. Leave the **Mask Editor** and preview the animating result again.



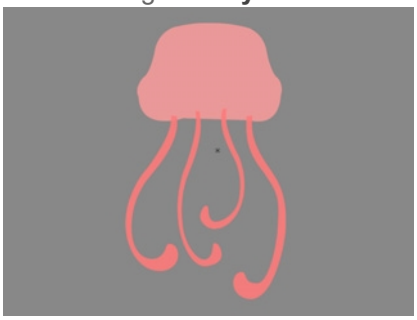
Using Pins for Animating Areas of Image

The advanced use of pins allow specific parts of the image to be driven by specific bones.

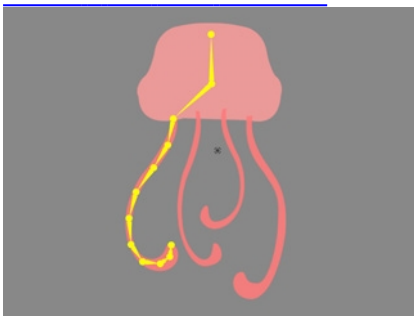
1. Click the **Create Free Bone** button on the Toolbar.



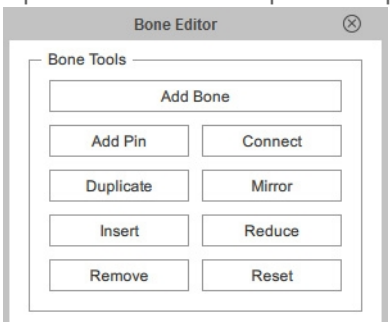
2. Load an image. **CrazyTalk Animator** will automatically switch to the **Bone-adding** mode in the **Composer**.



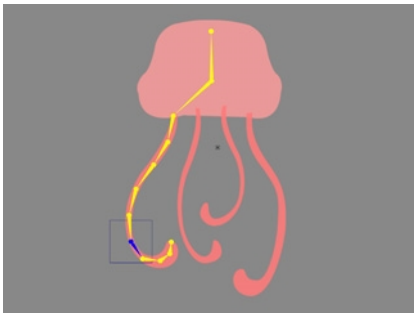
3. Create a free bone character in the **Composer Mode**.



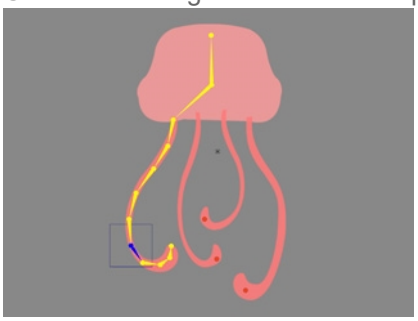
4. Open the **Bone Editor** panel and press down the **Add Pin** button.



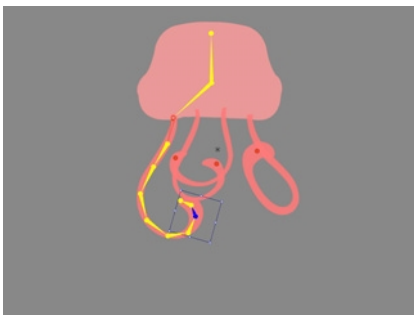
5. Select one of the bones.



6. Click on the image to determine the parts that will be driven by the bone.

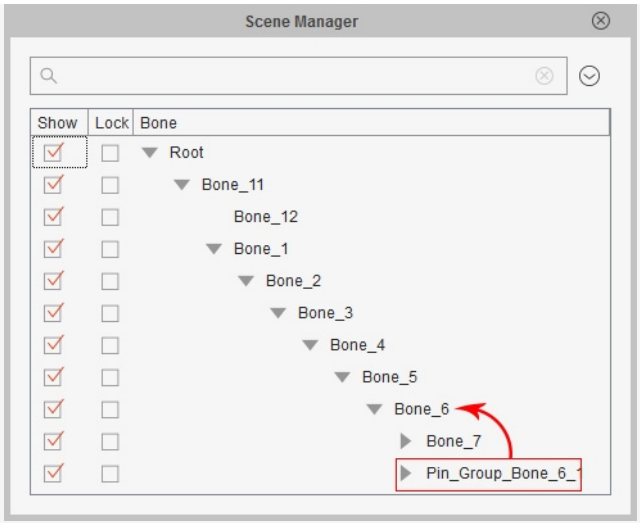


7. Press down the **Preview** button.
8. Use **IK** or **FK** method to animate the bone string. The parts with pins will be driven to move as well.



Note:

Because the pins are attached to the bone selected in Step 5, when the bone string is animated, the bone and the attached pins will be animated as well.


Scene Manager
Show
Lock
Bone
Root
Bone_11
Bone_12
Bone_1
Bone_2
Bone_3
Bone_4
Bone_5
Bone_6
Bone_7
Pin_Group_Bone_6_1

Creating Body Parts with the Layer Manager (New for v3)

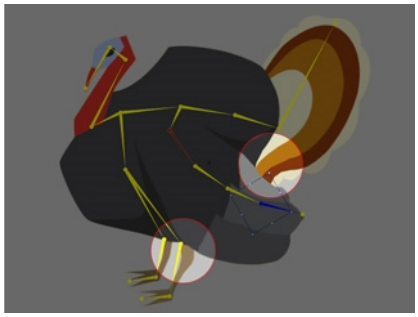
Body parts can be set to different layers in the Layer Manager, to ensure the front-and-back relations between them. To do this, you can create layer-changing animations by setting layer keys. It also guarantees that parts of the image are only influenced by bones in the same layer, rather than using pins to set fixed areas.

Creating New Layers with Original Images

For the example in the illustration, the wing of the turkey cannot move without driving the other parts in the image to move. In this case, the best solution is to set the wing and the bones that control it to an individual layer.

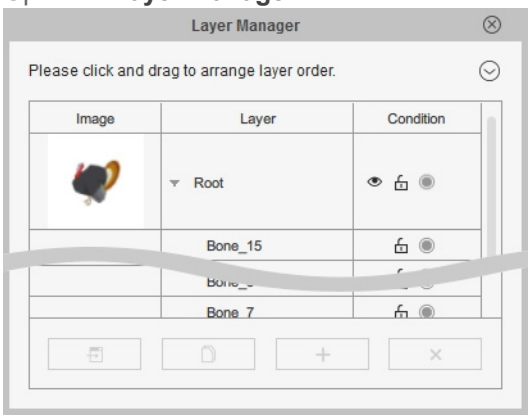


Free bone character created without setting any layer

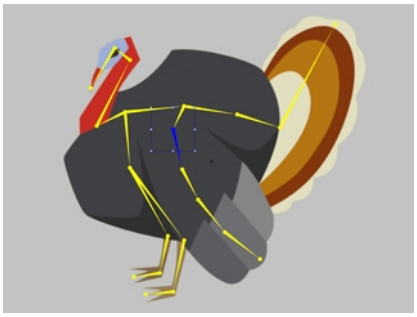


The body part animates with irrelevant areas in the image, being driven to move with them in spite of numerous pins being utilized.

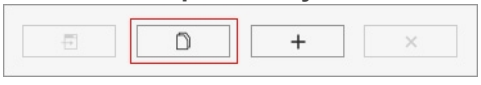
1. Select the character and enter the **Composer** mode.
2. Open the **Layer Manager**.



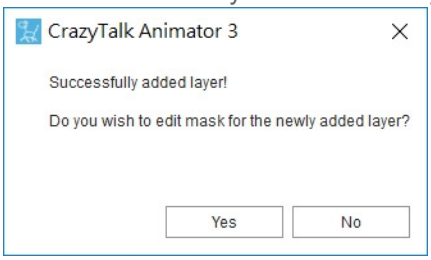
3. Select the sub-root bone that will control the wing with its sub bones.



4. Click on the **Duplicate Layer** button at the bottom of the **Layer Manager**.



5. You will be asked if you wish to modify the mask of the new layer.



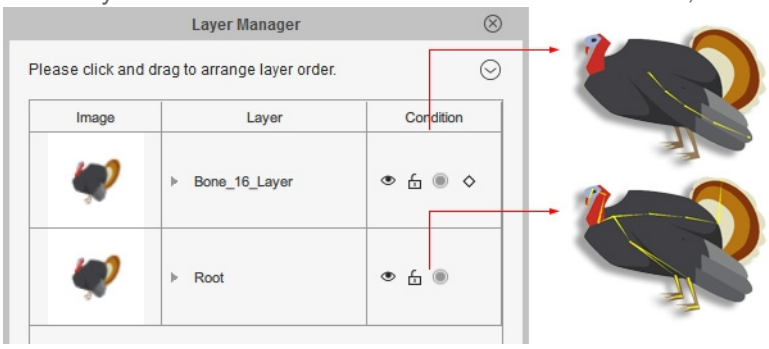
6. Click the **No** button to skip the mask-editing step. You can do it later.

Note:

You can click on the **Yes** or the **No** buttons.

- If you click the **No** button, then a new layer containing the selected sub-root bone, with its child bones and the **original image** will be created.
- If you click the **Yes** button, then you will need to modify the mask first and then a new layer containing the selected sub-root bone. Its child bones and a **masked image** will be created.

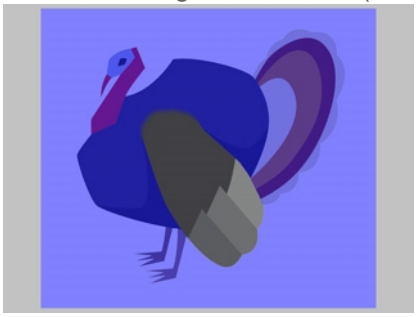
7. A new layer will be created which includes the sub-root bone, its child bones and the original image.



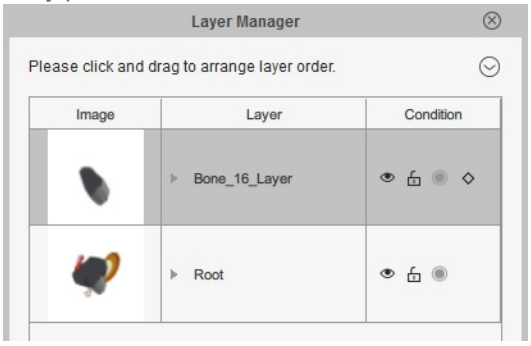
8. Select the newly created layer (in this case, **Bone_16_Layer**) and click the **Mask Editor** button.



9. Cut out the wing with the mask (the area in purple is covered with the mask).



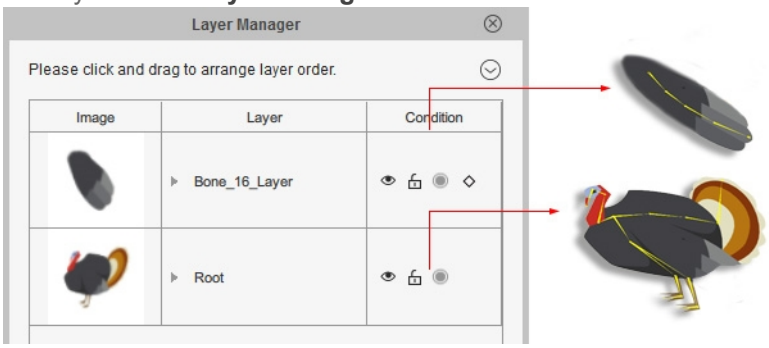
10. Close the **Mask Editor**. The new layer in the **Layer Manager** will change its thumbnail because only the cut out body part can be seen.



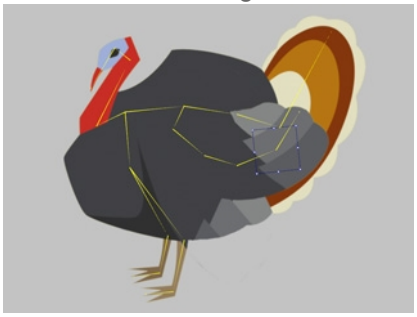
11. Select the **Root layer** in the **Layer Manager** and use the **Mask Editor** again to trim its shape.



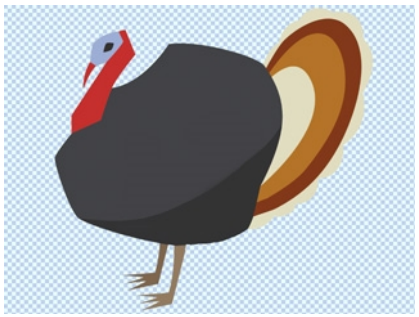
12. The layers in the **Layer Manager** now have different thumbnails.

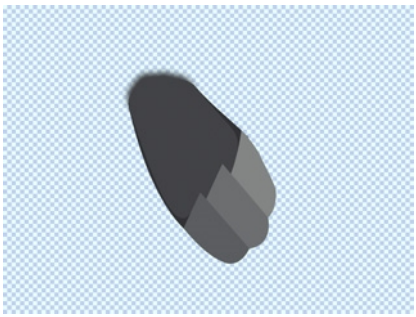


13. Press down the **Preview** button and animate the wing by **IK** or **FK** methods. The animation of the new layer will not influence the image in the other layer.



14. Optionally, you can edit the image in the **Root** and new layers with the external image editor to remove the part that is already moved to the new layer to fix the visual flaw.





15. Go back to Stage and animate the new character with layers.





Creating New Layer with Prepared Images Pro & Pipeline

If you have prepared several images and you wish to combine them together in **CrazyTalk Animator** to generate a free bone character, then use the Insert Image feature of the **Layer Manager** panel.





1. Click the **Create Free Bone** button on the Toolbar.



2. Load the main image (in this case, the dress). **CrazyTalk Animator** will automatically switch to the **bone-adding** mode in the **Composer**.



3. Add bones. You can add bones outside of the image to load another prepared images.



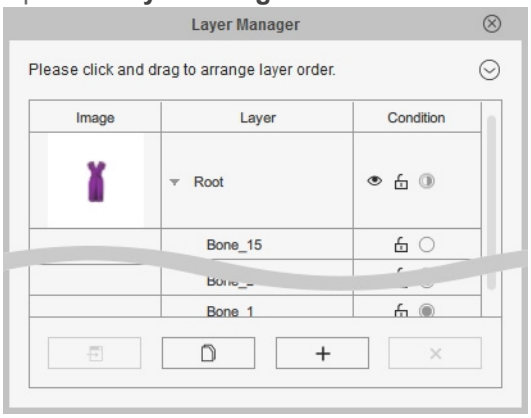
Note:

The gray bones means that they are currently not controlling any image.

4. Select the bone that is supposed to be the upper arm.



5. Open the **Layer Manager**.

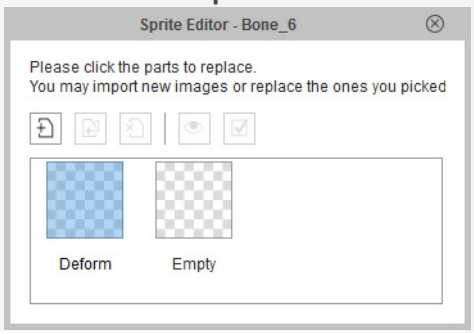


6. Click on the **Add Image** button at the bottom of the **Layer Manager**.

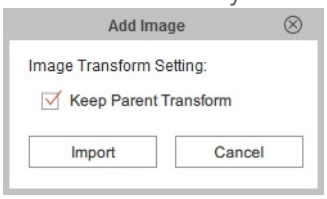


Note:

You can use the **Sprite Editor** to load a new image for creating a new layer as well.



7. You will be asked if you wish to modify the mask of the new layer.



Note:

You can click on the **Yes** or the **No** buttons.

- If you click the **No** button, then a new layer containing the selected sub-root bone, with its child bones and the **original image** will be created.
- If you click the **Yes** button, then you will need to modify the mask first and then a new layer containing the selected sub-root bone, its child bones and a **masked image** will be created.

8. Load another prepared image.

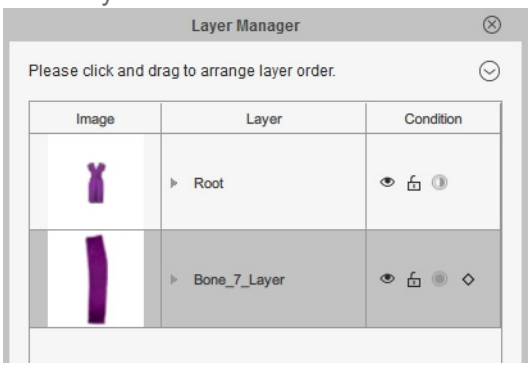


9. You maybe need to adjust the sprite image with the **Transform Sprite** tool.





10. A new layer will be created.



Note:

You maybe need to change the layer order by drag-and-dropping on the layers.

11. Adjust the positions of the bones if necessary.



12. Repeat the same steps to load prepared images for creating more layers.



13. Press down the Preview button to view the animation result with the **IK** or **FK** methods.



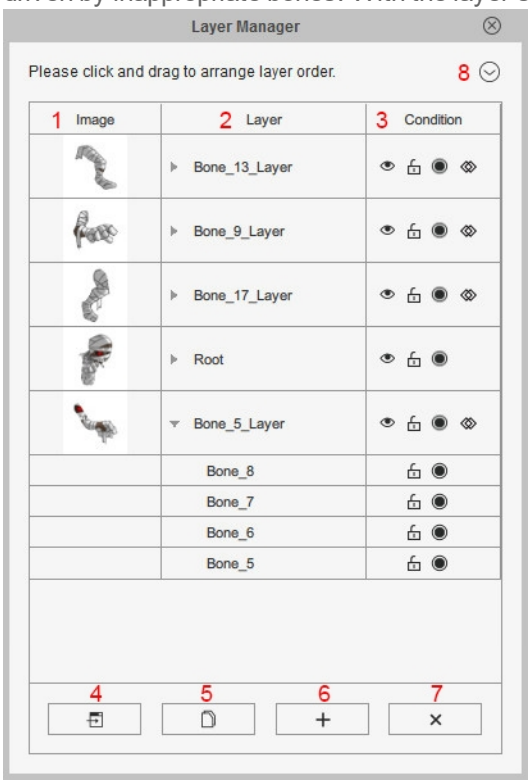
Note:

If you encounter the issues as show below, please activate the **Double Bind** radio button of the layers.



Introduction of Layer Manager Panel (New for v3)

In the Composer mode, you can separate body parts into different layers to prevent certain parts of the image from being driven by inappropriate bones. With the layer-setting method, you can also set layer keys in the **Stage** mode.



	Name	Description
1	**Layer Image**	This column displays the images in each layer.
2	**Layer Name**	This column displays the layer names of the character.
3	**Condition**	This column displays the conditions for each layer.  a. Click the eye to show or hide the layer. b. Click the lock, to lock the layer from being accidentally selected in the working area. c. Click this radio button to bind or unbind the bone to the image. ○ : Deactivate the bone in the layer from the image (bone is in gray). Moving the bone does not influence the image. ○ : Activate the bone in the layer to the image (bone is in yellow by default). You can animate the image with the bone. ○ : One or more bones under the layer are not activated to the image. d. Click this button to determine if you wish to set the layer to be double binded.
4	**Launch to External Image Editor**	Click this button to send the image of a layer to an external image editor for further editing.
5	**Duplicate Layer**	Click this button to generate a new layer with selected bone, its child bones and the image in the same layer.
6	**Add Image**	Click this button to load a prepared image onto certain bones to create a new layer.
7	**Delete**	Click this button to delete a selected layer.
8	**Menu**	Press this drop-down menu to adjust the properties of the **Layer Manager**.



- **Invert Selected**: Use this command to select the un-selected layers and deselect the currently selected layers.
- **Hide Unselected**: Use this command to hide the unselected layers.
- **Unhide All**: Use this command to show every layer.
- **List Expand**: Use this command to expand every layer in order to see the bones within the layers.
- **List Collapse**: Use this command to collapse every layer in order to hide the bones and to only display the layer image, name, and condition.
- **Auto Active Bone**: Use this bone to have **CrazyTalk Animator** automatically activate the bones. If there is no image pixel under a bone, then the bone will be deactivated and vice versa.
- **Thumbnail Size**: You can determine the size of the thumbnail of the layers to be small, medium, or large.

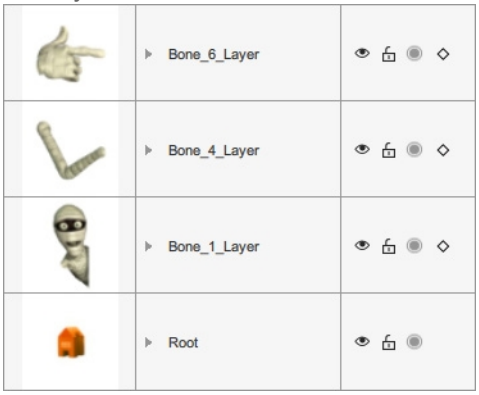
Double Bind for Layers (New for v3)

Double bind is very useful for having a specific sub-root bone in a layer to control not only the image in the same layer, but also the image one-level higher. Therefore, this method ensures you the connectivity of the joint areas between two body parts when the character is performing.

Given a free-bone character constructed with multiple layers:



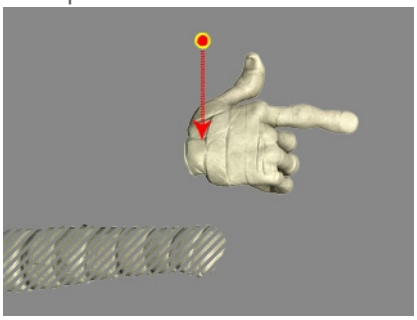
The layers are shown as in the illustration.



Notice that the bind statuses for all layers in the rightmost column are **Single Bind**.



This means that the sub-root bones of these layers only control the image in the same layer. Take the hand layer as an example:

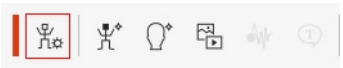


Therefore, when you animate the bones in a layer, only the image in the same layer can be animated, which causes the broken issue.

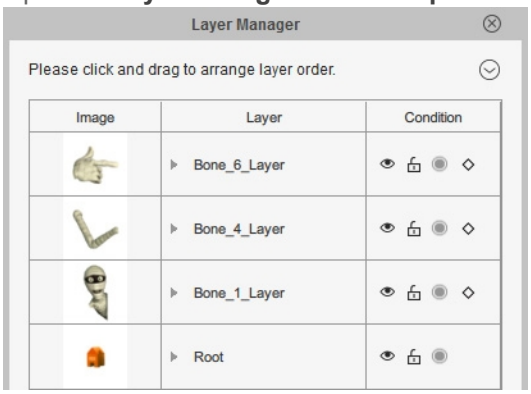


To solve this issue, you need to:

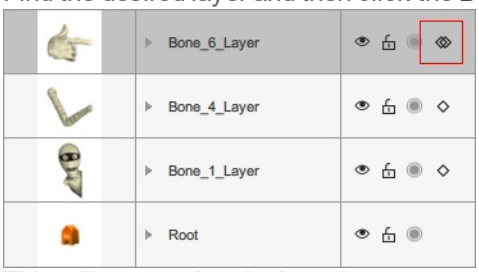
1. Select the character and click the **Composer** button on the Toolbar.



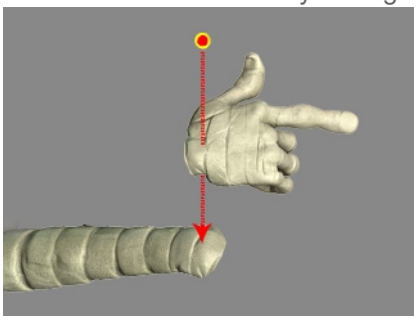
2. Open the **Layer Manager** in the **Composer** mode.



3. Find the desired layer and then click the **Double Bind** button.



This will ensure that the layer image connected to this sub-root bone can be animated as well.



4. Press down the **Preview** button and use the **IK** or **FK** methods to view the animation result.



5. Even if you use the **Motion Key Editor** and offset the layer, the layer that is double bound will also be driven by the bone.



Creating Cutouts (Sprites) by using the Mask Editor (New for v3)

In **CrazyTalk Animator**, when you want to create layers with original image, then you need to use the editable **Masks** to cut off the unnecessary parts. By defining the masking area with the default editing tools, you can quickly create a masked image instead of using any external image editor.

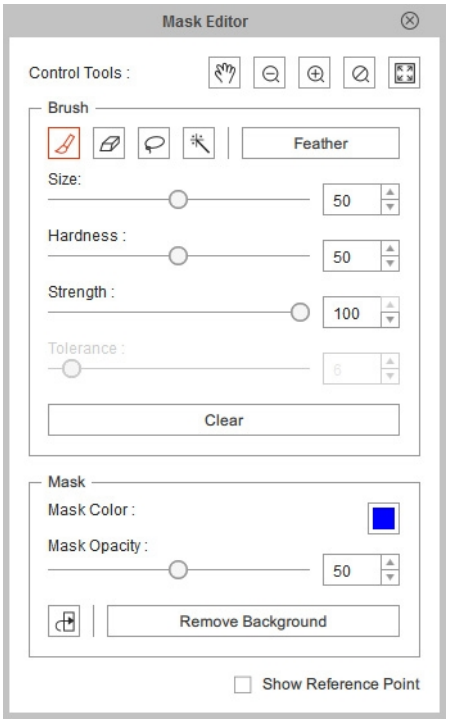
Note:

You can always use your favorite external image editor to do the masking procedure if you want to.

To open the **Mask Editor** panel, select a character or a prop first, then switch to the **Composer** mode, pick a body part or the prop image, and then click the **Mask Editor** button on the Toolbar.



You will see the **Mask Editor** on the screen.



Pan (Alt + Left mouse button) — Use this tool to pan and view the desired area of the photo.

Zoom Out (Mouse wheel down) — Click this button to decrease the zoom percentage.

Zoom In (Mouse wheel up) — Click this button to increase the zoom percentage.

Actual Size — Click this button to restore image to its original size.

Fit to Window — Click this button to resize image to fit it in the Preview window.

Brush — Use this tool to paint on the photo to add to the masked area.

Eraser — Use this tool to erase any unwanted masked area.

Lasso — Use this tool to enclose and fill up the area, and defined it as masked.

Select by Color — Use this tool to select the desired color. You can use the **Tolerance** slider to determine the threshold for selecting.

Feather — Click this button to perform advanced settings to the current mask.

Clear — Click this button to delete the current mask.

Inverse Mask — Click this button to inverse the mask area.

Brush Settings

Brush Size

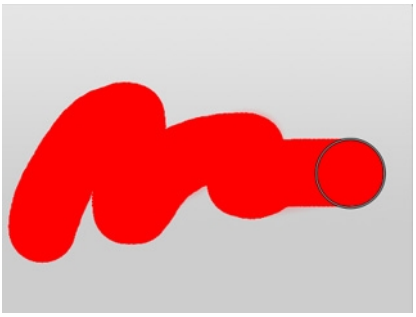
Drag the slider to define the size of the currently used tool.

Brush Hardness

This value determines the feather level of each stroke. The higher the value, the sharper the edge of strokes.



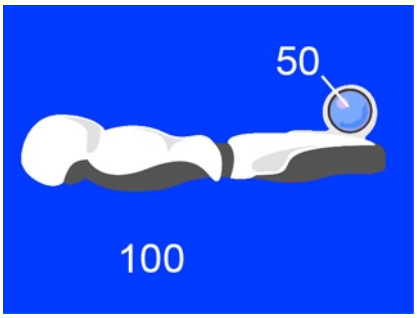
Brush Hardness: 30



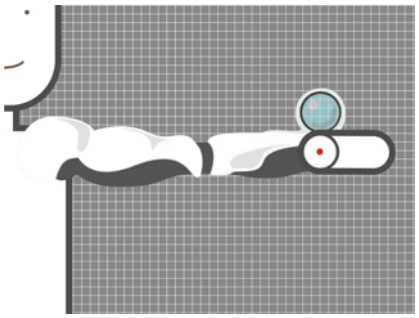
Brush Hardness: 100

Brush Strength

This value determines the strength of each stroke, it also affects the visibility of the makeups or effects. The higher the value, the more obvious the makeup or effect of a stroke.



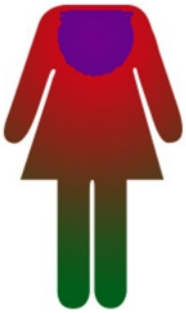
Brush Strength: 50 and 100



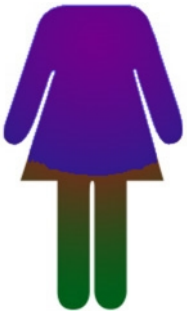
The areas with weaker stroke strength will create semi-transparent effect

Select Color - Tolerance

When you switch to the **Select Color** tool, the **Tolerance** slider will be enabled. You can use it to determine the threshold of the color similarity on the image to be selected.



Tolerance: 5



Tolerance: 50

Mask Settings

The mask settings only deal with the way the mask displays. They do not influence the masking result of the image.

Mask Color

You can use the color picker to select the color of the mask.



The default mask color



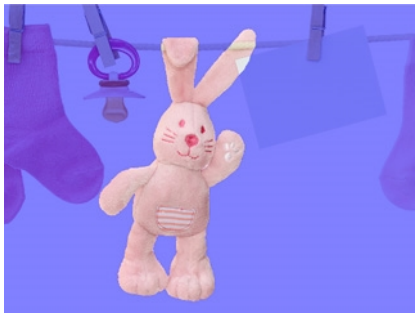
Customized mask color

Mask Opacity

Use this slider to determine the opacity of the mask in order to view the original image for reference.



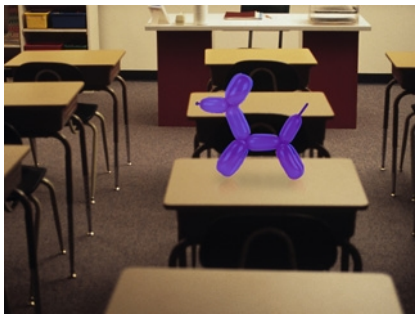
Opacity: 100



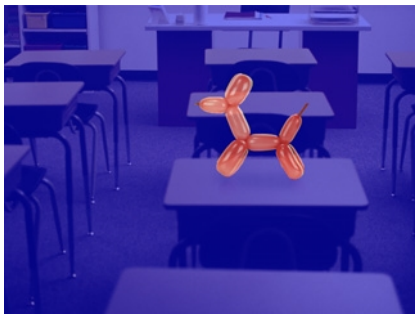
Opacity: 50

Inverse Mask

Click this button to inverse the mask areas. It is very useful when the areas of the image you want to make foreground are easy to be selected with the **Select Color** tool, while the others are complicated. You can first cover the foreground with a mask, and then inverse the mask in order to cut out the foreground areas.



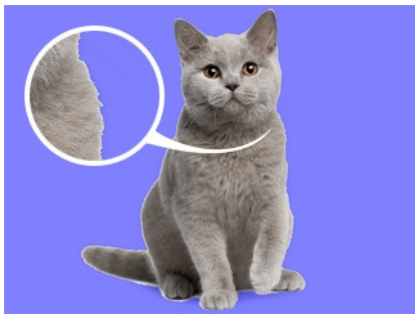
Before inversion



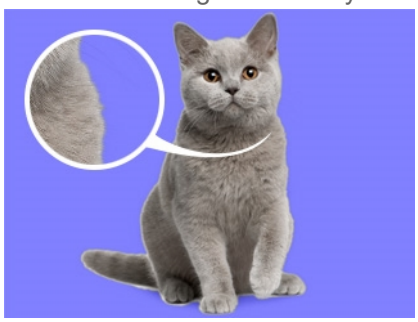
After inversion

Feather Settings

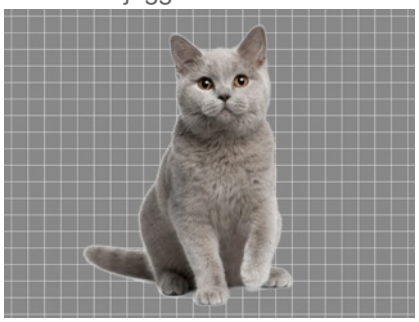
- Feather: You can use this feature to make the mask edge more blurry and to solve the jagged issue.



Feather: 0

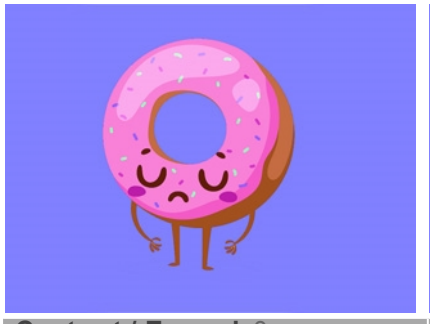


Feather: 50

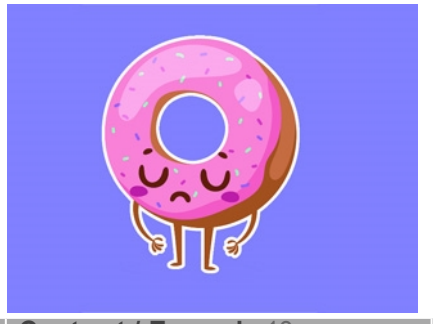


The edge is fluffy with the feather method

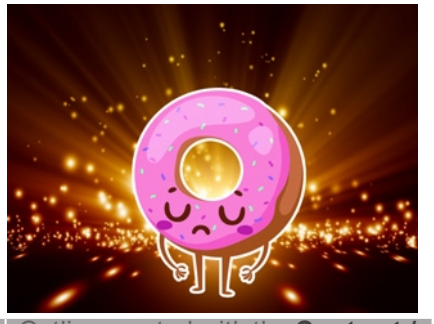
- Contract / Expand: Use this slider to determine if the unmasked areas are to be cut more or less. Contracting the mask area can also create a body part with outlines.



Contract / Expand: 0



Contract / Expand: -10
The mask shrinks.



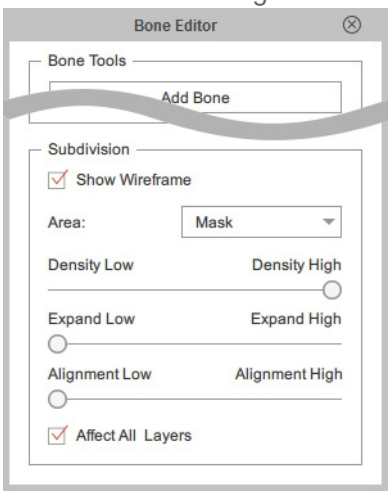
Outline created with the **Contract / Expand** method.

Smoothing with Subdivisions (New for v3)

Pro & Pipeline

When you are animating **G3** characters, you may sometimes find jagged edges or serious distortions in body parts. You can adjust the subdivisions in order to make the body parts look smoother.

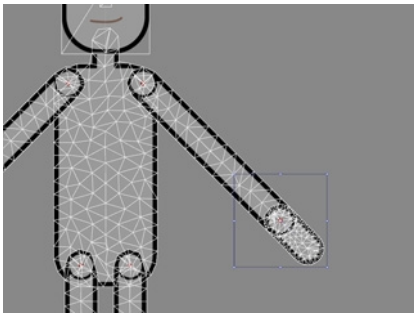
The subdivision settings can be found in the lower half of the **Bone Editor**.



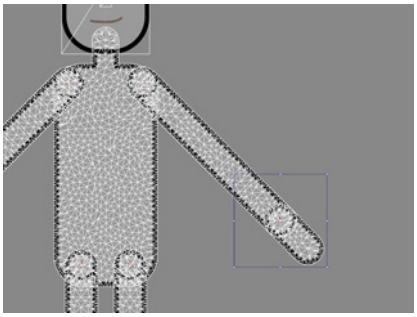
*** Please note that whenever you want to adjust these settings, you need to activate the "Show Wireframe" box first.**

Current Layer or All Layers

The subdivision settings can be different for individual layers, but if you want to set them at once, you can do so by activating the **Affect All Layers** box at the bottom of this panel.



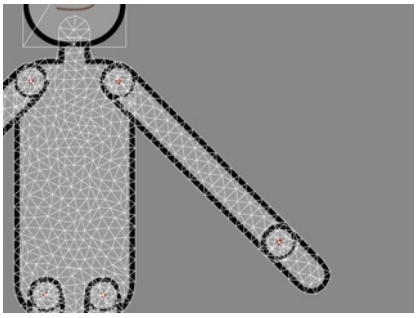
Affect All Layers: OFF
(Only the left upper arm image is affected)



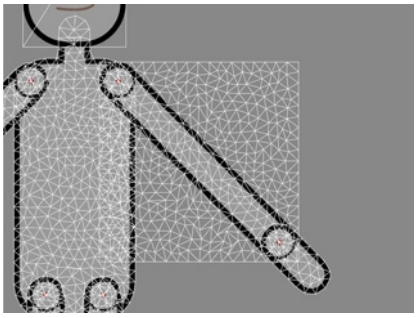
Affect All Layers: ON
(All images from different layers are affected)

Area Drop-down List

The **Area** drop-down list is used to determine if the bone drives the image in accordance with the mask you created, or ignores the mask but influences the entire image.

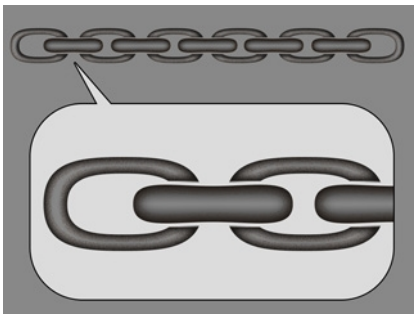


Area: **Mask**

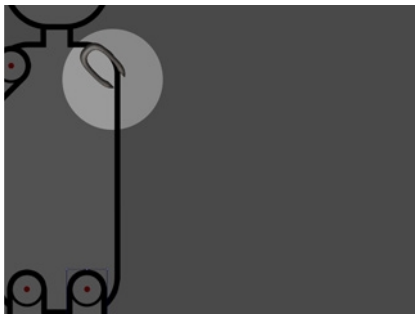


Area: **Full Image**

This feature can also solve the issue of loading a masked file (**PNG**) that cuts out with disconnected parts. This type of image sometimes displays only one part, while the other parts disappear after the image is loaded into **CrazyTalk Animator**.

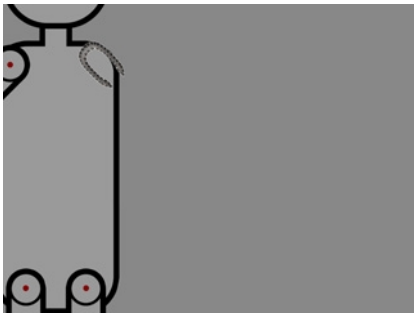


The original image is cut out into several parts by the mask

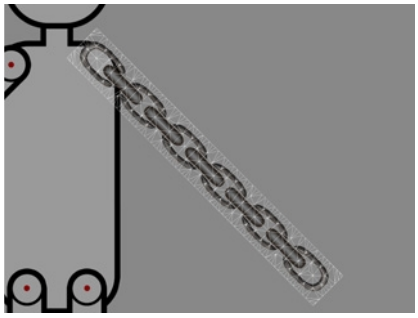


Some parts of the image are missing after being loaded into **CrazyTalk Animator**

By using the **Full Image** item, the entire image is under controlled, which forces the missing parts to show up.



Area: **Mask**



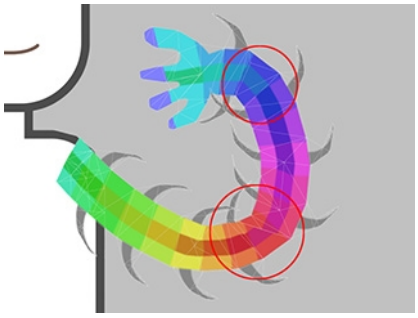
Area: **Full Image**

Density, Expand and Alignment Settings

The **Density**, **Expand** and **Alignment** settings assist you with smoothing the image of the body parts.

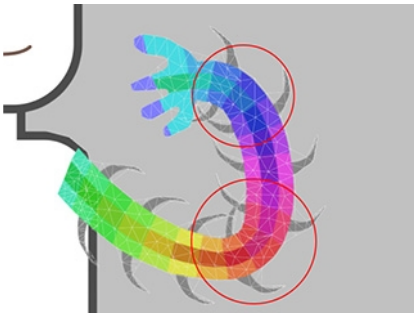
Density

The **Density** determines the inner subdivisions of the topology for the image. The more the value , the more subtle subdivisions are generated, which can ensure the smoothness of the inner images of the body parts.



Density: **Low**

(The cracks happen)



Density: **High**

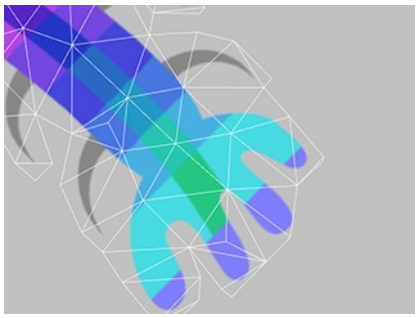
(The cracks are removed)

Expand

When the edge of the image is cut off or jagged, increase the **Expand** value to offset the edge of the topology in order to include and reveal more of the images.

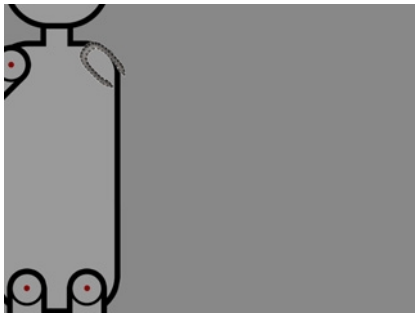


Expand: **Low**

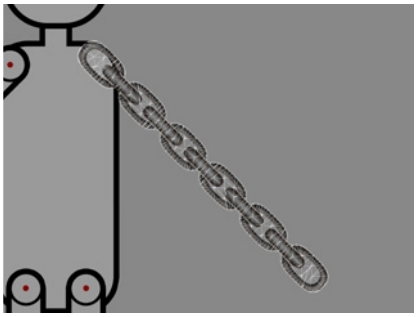


Expand: **High**

In the previous section, the image file that is cut out into several parts shows only one part in **CrazyTalk Animator,** but it can be fixed with the **Expand** slider. Moreover, it can also decrease the number of triangles deployed in the image.



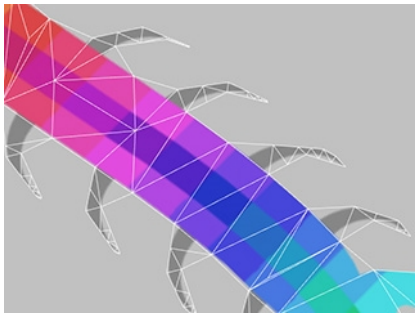
Expand is set to minimum



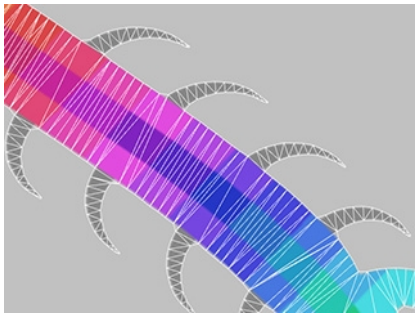
Expand is increased

Alignment

The **Alignment** value subdivides the image describing the edge lines. The higher the value, the more details the edges of the image will be depicted by the subdivision topology. It will ensure the smoothness and the original shapes of the outline when the body part image is animated.



Alignment: **Low**



Alignment: **High**

Previewing Free Bone Animations (New for v3)

The bone animations of **G3** characters in the **Composer** mode can be previewed by the **IK** or **FK** methods. You can then use this method to adjust the structure of the bones, the pins, and the subdivision status.

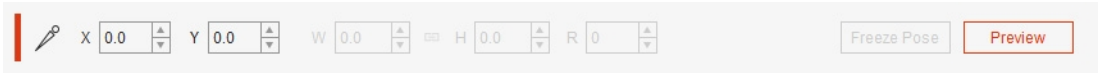
1. Load an image and select to create a **Free Bone Character**.



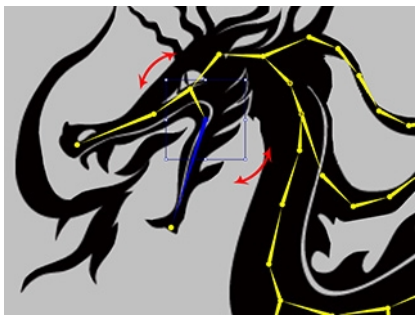
2. Switch to the **Composer** mode and build bones for it.



3. Press down the **Preview** button on the Toolbar.

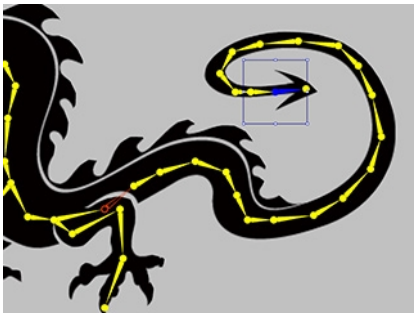


4. Select any one bone and rotate the bone to view the animation results. (This is the so-called **FK** method).

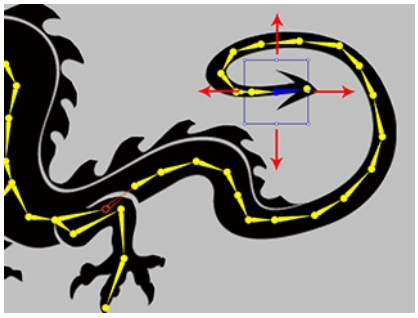


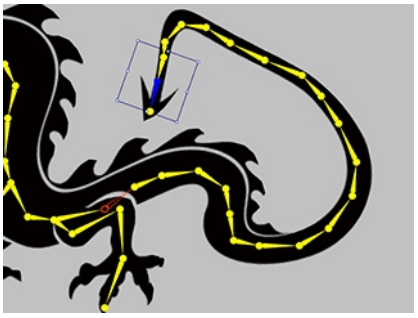


5. Select a sub-bone to form a bone IK chain. (the root bone of the chain will turn to a hollow red one).



6. Drag the bone to view the animation result.





7. Press up the **Preview** button.
8. The bone will restore its initial status.

Replacing Characters (New for v3)

In **CrazyTalk Animator**, you can always replace characters with another one by drag and dropping the desired one onto the existing one. However, there are some regulations for replacing characters.

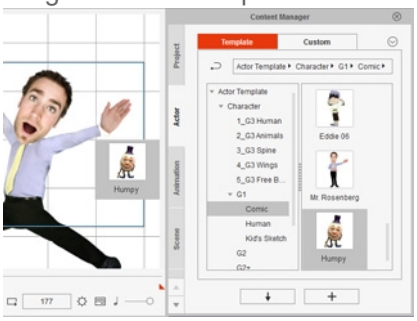
Replacing an Existing Character

If you wish to replace an existing character without removing the animations that you already set, then just follow the steps below:

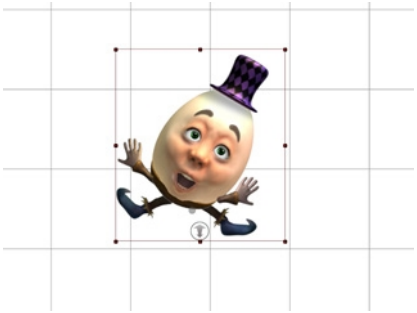
1. In **Stage Mode**, select the character that will be replaced.



2. Change to **Actor** >> **Character** library.
3. Drag the desired template from the library and drop it onto the selected character.



4. The original character will now be replaced with the new one. All original animations will be kept.



Note:

You may create a character with the advanced method. For more information please refer to the Changing Parts of a Character section.

Character Replacement Regulations

The replacing regulations are divided into two aspects; character and head / body (body parts included).

For the ease of reading, **CrazyTalk Animator** will be described as **CTA** in the following tables.

Character Replacement Table (for CTA V2)

	Replaced with	
	G1 Character	**G2 Character**
G1 Character	V	V
G2 Character	V	V

Character Replacement Table (for CTA V3)

	Replaced with		
	G1 Character	**G2 Character**	**G3 Character**
G1 Character	V	V	X (add new character)
G2 Character	V	V	X (add new character)
G3 Character	X (add new character)	X (add new character)	X (add new character)

Head / Body Replacement Table (for CTA V2)

	Replaced with		
	G1 Head	**G2 Head**	**G2 Body**
G1 Character	V	V	V
G2 Character	V	V	V

Head / Body Replacement Table (for CTA V3)

	Replaced with			
	G1 Head	**G2 Head**	**G1 Body**	**G2 Body**
G1 Character	V	V	V	V
G2 Character	V	V	V	V
G3 Character	V (Head added in composer first)	V (Head added in composer first)	X	X

What is the Differences between Attach and Link?

In **CrazyTalk Animator**, there are two features that allow an object to be connected to another, **Attach** and **Link**. Both these features are used in different ways.

	Link	Attach
Situation	• Creating conveying animations for props and actors	• Creating compound props • Putting accessories onto characters
Similar Behaviors	• The child node inherits the parent's transform data • The child can be transformed after linkage	• The child node inherits the parent's transform data • The child can be transformed after attaching
Generating Keys in the Timeline	• Available	• Not Available
Saving Relations in Projects	• Available	• Available
Multiple Objects	• Supported	• Supported
Saving Parent to Library	• Parent-child relation is broken • Only parent is saved	• Parent-child relation is saved
Levels	• Multiple levels available • Recursive linking is forbidden	• Multiple levels available • Recursive linking is forbidden
Hierarchy in Scene Manager	• No change	• Changes • Child is moved under the parent node

Attaching Accessories to a Character

If you wish to attach the accessory to any body part, then you may use the **Attach** feature to do so.

Attach to Body Parts

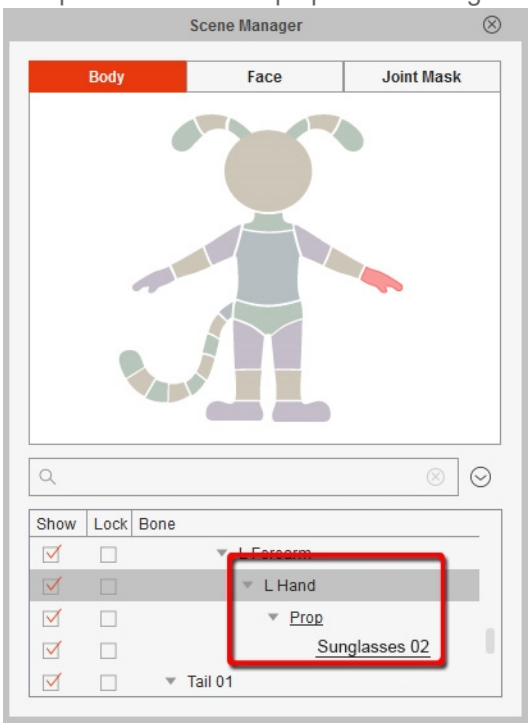
1. In the **Composer**, make sure the accessory is selected and then click the **Attach** button found on the tool bar.



2. Click on the target body part or facial feature, to attach the accessory.



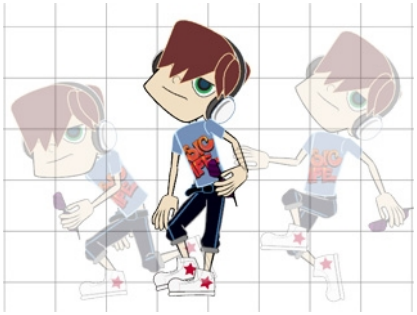
The parent node of this prop is now changed to the body part you assigned.



3. Move, rotate or scale the accessory to the appropriate location or size.



4. Click the **Back to Stage** button to leave the composer mode and update the character.
5. When the character is in motion, the prop will move along with the character.



Using the Attach Feature

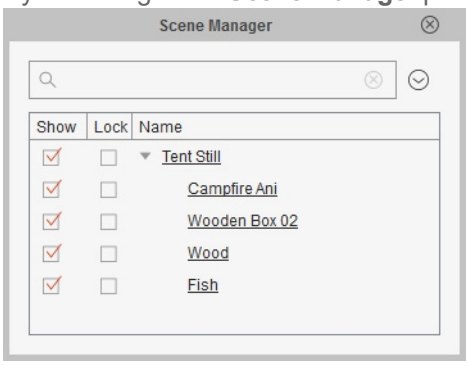
After you create composite props with the Composer, the components, also named sprites, are all at the same level under the root node. However, you may need to group some sprites together to have them animate at the same time. Use the **Attach** feature to group them.

Attach Feature

1. In the **Stage Mode**, select a compound prop created earlier.



2. Click the **Composer** button.
3. By switching to the **Scene Manager** panel, you will be able to see the sprites that are under the root node.



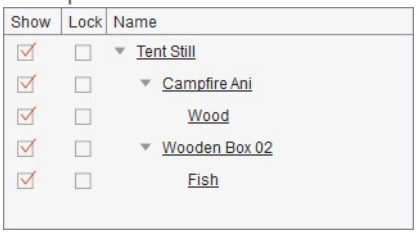
4. Select a sprite which is a child of another one.



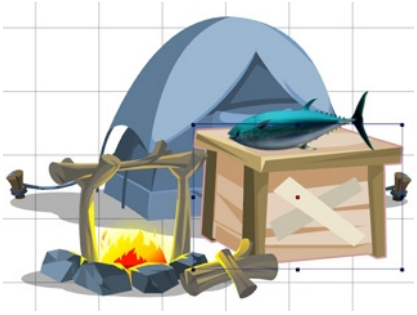
5. Click the **Attach** button and pick another sprite which you want as a parent.



6. The sprite will then be moved under the new parent.



7. If you transform the parent, then the child will be affected as well.



Note:

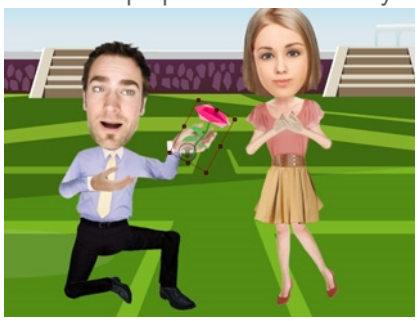
- The **Attach** feature can only be done in the **Composer Mode**.
- If you need to detach the sprite, then use the **Attach** feature and then pick the root sprite to detach from the new parent.
- Please refer to the sections below for more information:
  - Sprite-based Project
  - Sprite Transformation Animations

Transporting an Item with Link and Unlink

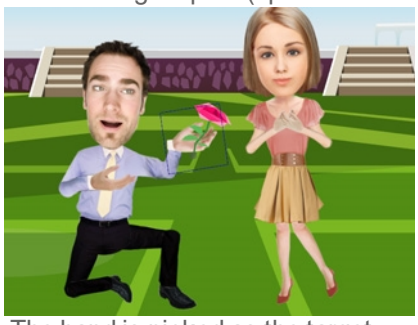
When an character needs to move or transport a prop to another character, or when a prop needs to be conveyed from one parent to another, then you use the **Link** or **Unlink** features provided in **CrazyTalk Animator**.

Conveying a Prop Between Characters

1. Select the prop that will be conveyed in **Stage Mode**.

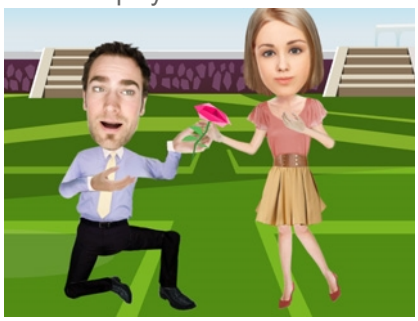


2. Click the **Link** button.
3. Pick the target sprite (sprite of a character or a prop) for the prop to link to.

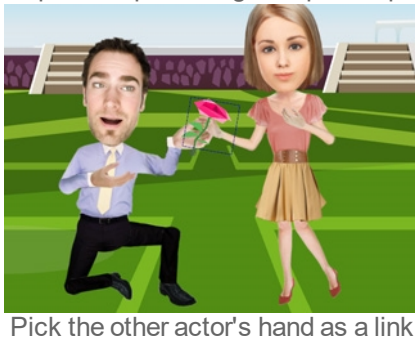


The hand is picked as the target.

4. Move the play head to another time frame.



5. Repeat Step 1 through Step 3 but pick another target sprite in Step 3.



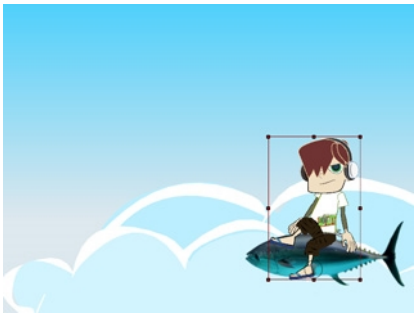
Pick the other actor's hand as a link target.

6. Play back the project and you will see the prop pass from one character's hand to another.

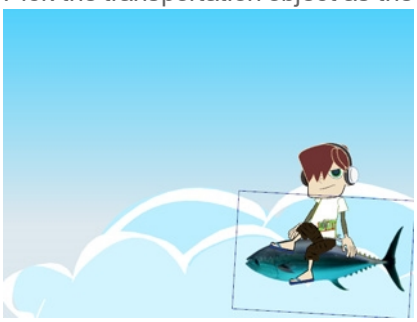


Character Taking Transportation

1. Select a character.



2. Click the **Link** button on the tool bar.
3. Pick the transportation object as the parent of the character.



4. Move the play head to the time frame when the character needs to get off the transportation object. In this case, the fish.



5. Select the **Unlink** button in the drop-down list by clicking the triangle beside the link button.



6. Now when you play back the project, the character will not follow the transportation object after the specified time frame.

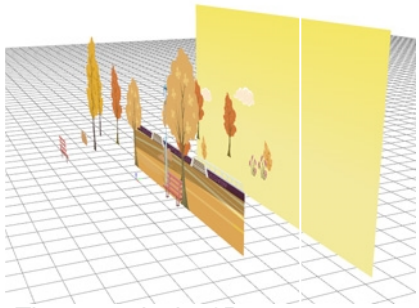


What is a Scene?

In a **CrazyTalk Animator** project, you can apply one and only one scene, which is made of a group of props. You may then store all well-organized props and background into a single scene file. This saves a lot of time by adding and applying them back when you need them.



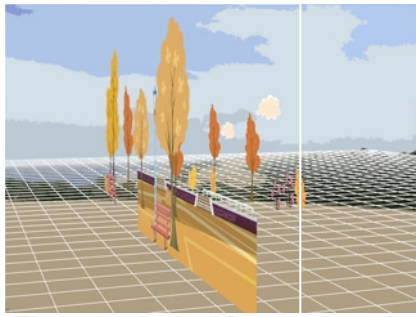
A scene with props



The scene in the 3D view



A scene with props and static background



The scene in the 3D view

The characteristics of a **Scene** template:

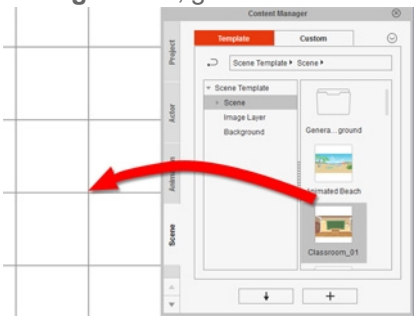
- A scene template is able to include props and background.
- Scenes are exclusive to each other.
- You are allowed to build a custom scene by adding more props into the scene.
- Props in a scene can be extracted.
- If a scene must be use in a different time of day (day, night), then do not apply a background before producing a custom scene template.

Loading a Scene from the Library

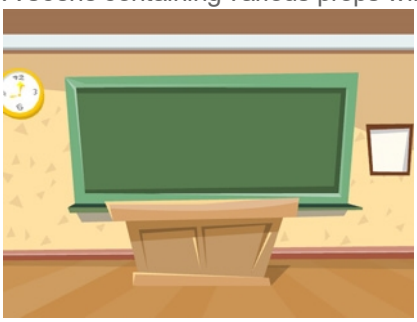
CrazyTalk Animator contains a **Scene** library, with templates, for quickly changing the environment of your project.

Loading a Scene from the Library

1. Select a New project.
2. In **Stage Mode**, go to the **Scene** content folder in the **Scene** tab of the **Content Manager** and apply a template.

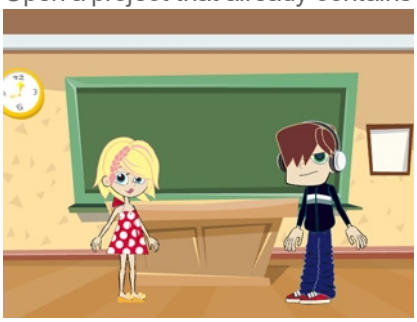


3. A scene containing various props will then be loaded.

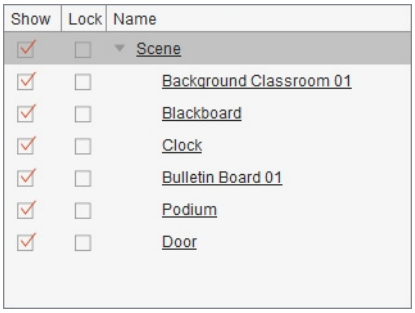


Replacing a Scene

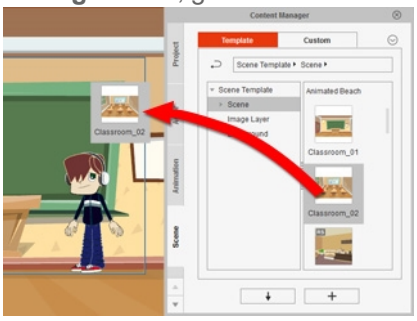
1. Open a project that already contains a scene.



2. Take a closer look at the **Scene Manager** and you will see the **Scene** items and all their sub props.



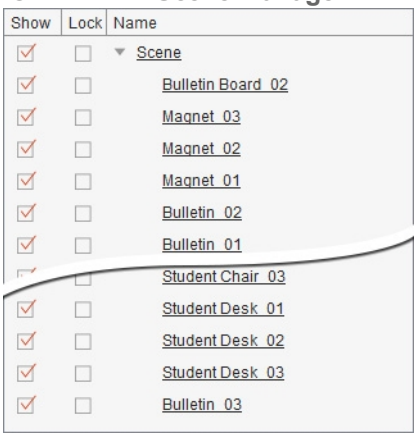
3. In **Stage Mode**, go to the **Scene** content folder in the **Scene** tab of the **Content Manager** and apply a template.



4. The original scene is replaced by the new one.



Observe the **Scene Manager** to see the differences. The previous props under the **Scene** are now all replaced.

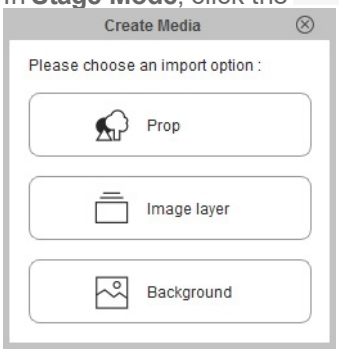


Building a Custom Scene

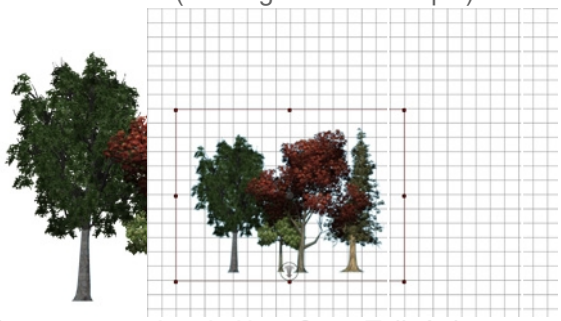
CrazyTalk Animator is an image-based animation tool. Every prop inside is made of one or more images. You may use various props to build up a **CrazyTalk Animator** scene.

Building a Scene

1. In **Stage Mode**, click the **Create Media** button and select a prop in the panel.

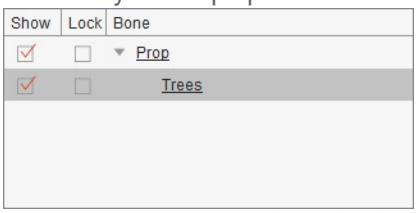


2. Load a media file (an image in this example) and convert it into a new **Prop**.

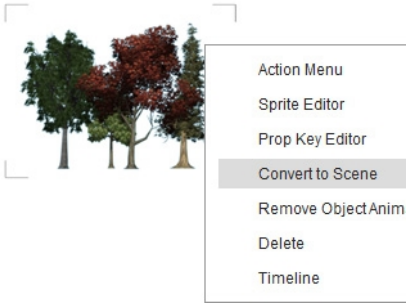


Source Image | Loaded into CrazyTalk Animator

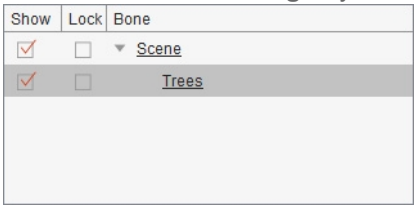
The newly-added props are all under the **Prop** item in the **Scene Manager**.



3. Right-click on the prop you want to add to the scene. In the right-click menu, select the **Convert to Scene** feature.



4. Look at the **Scene Manager**, you may see that the prop is now moved under the **Scene** item.



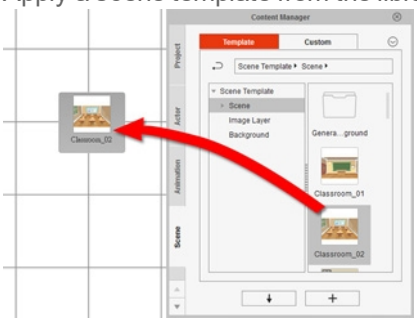
Note:

- Please refer to the Adjusting the Z Values with 3D View section for more information about how to arrange the Z-depths of props.
- You can also create props with compound sprites. Please refer to the Sprite Concept section for more information.

Extract Props from a Scene

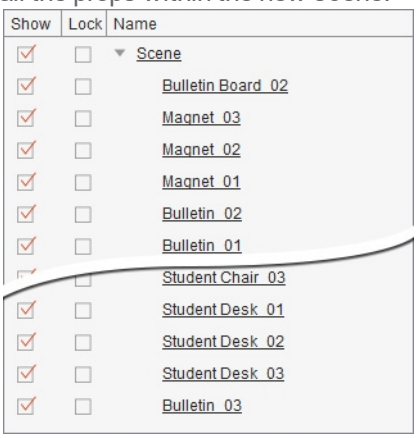
After you apply a scene template from the library, then you may extract the props within the scene. The props will not be replaced during the next scene replacement.

1. Apply a scene template from the library.



2. In the scene manager, you may see all the props within the new scene.

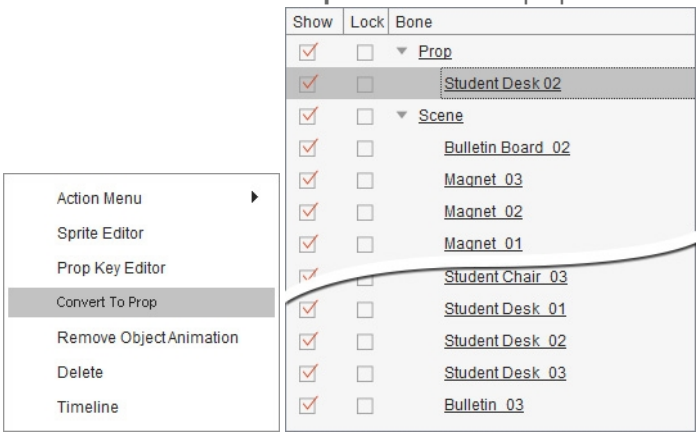




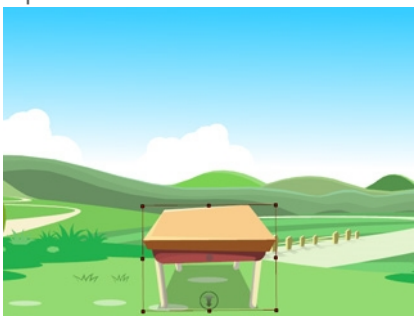
3. Select the desired prop and right-click on it.



4. Choose the **Convert to Prop** command. The prop will be moved under the **Prop** item.



5. Apply another scene template. This prop will not be replaced while all the other props under the **Scene** will be replaced.

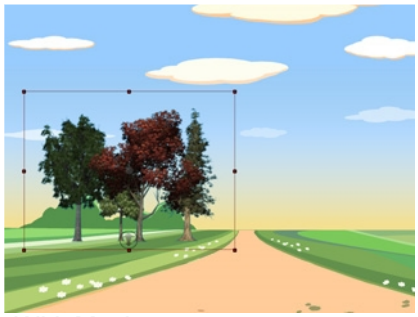


Using Media with Masks

It is highly recommended for you to load media with masks (alpha channel) so that the when the media files are loaded into **CrazyTalk Animator** then the unnecessary parts are filtered out. The supported file formats (with masks) are *.png, *.tga (32 bits), *.bmp (32 bits), *.gif, *.popVideo and *.iWidget.



Without Mask



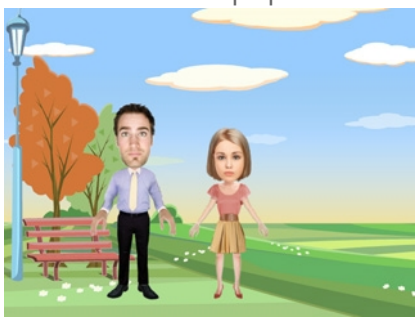
With Mask

Adjusting the Z Values with 3D View

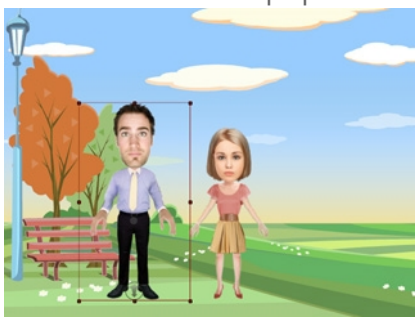
Even though **CrazyTalk Animator** is a 2D-based application, it still contains a Z depth system. Each character and prop possesses its own Z-depth layer that determines the distance of it from the center of the project.

Using 3D View to change the Depth

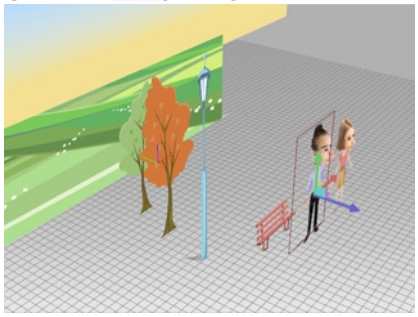
1. Add characters and props to the working area.



2. Select a character or a prop.

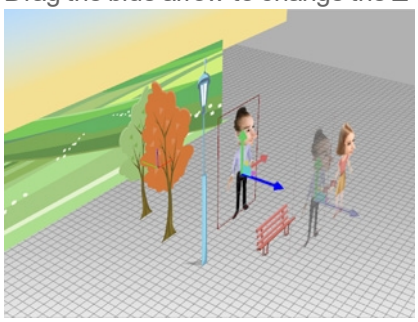


3. Click the **3D View** button to switch the camera to the 3D top view.



- Drag with the right-mouse button to change the angle of the camera.
- Drag with the left-mouse button to pan the camera.

4. Drag the blue arrow to change the Z-depth of the selected item.

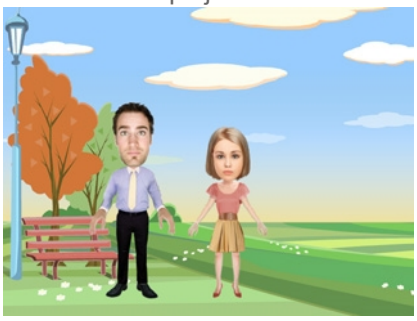


Note:

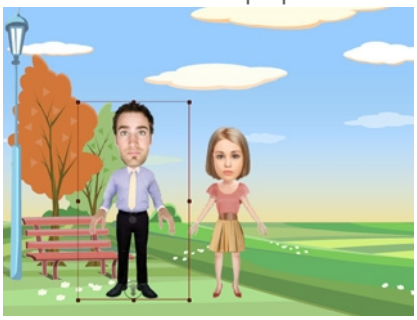
- Changing the depth of an object, in different time frames, may add a transform key to the timeline.

Using the Mouse Wheel to change the Depth

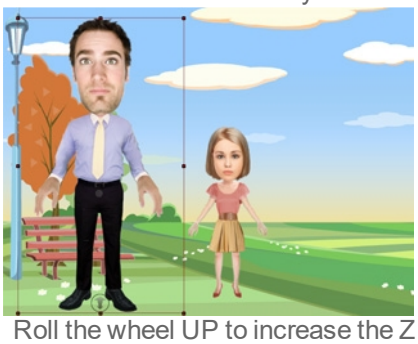
1. Use the same project.



2. Select a character or prop.



3. Roll the mouse wheel and you will notice that the Z-depth will start to change.



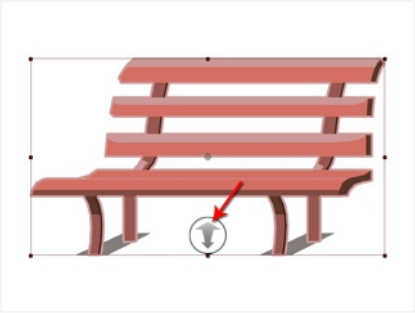
Roll the wheel UP to increase the Z value.



Roll the wheel DOWN to decrease the Z value.

Note:

- Dragging the icon inside a selected character or prop may also change the depth.



- If you do not see a change when rolling the mouse wheel, then you need to make sure that you are in the **Perspective** mode. Please refer to the Project Settings section for more information about the **Perspective** and **Orthographic** modes.

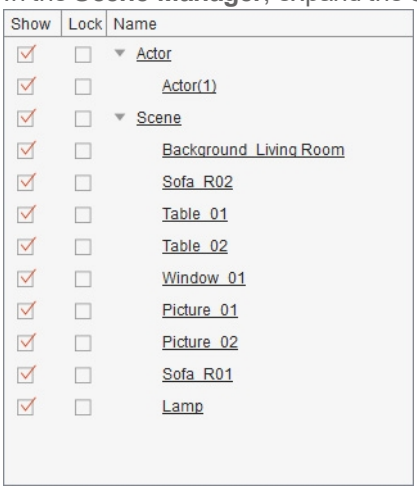
Using Lock and Unlock

Since a scene is composed of one or many props - by accident you may often pick a prop that you do not want to edit. By locking the prop down, you may still see it inside the working area but not pick it. This is very useful especially when you already have props with ready animations.

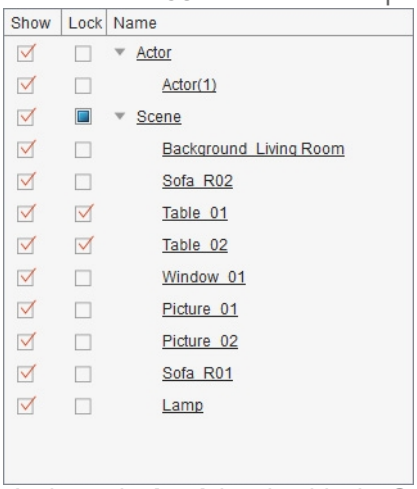
1. Create a scene.



2. In the **Scene Manager**, expand the **Scene** items.



3. Activate the **Lock** box beside the props you do not wish to pick.



Activate the **Lock** box beside the **Scene** item in order to lock all the props under that **Scene** entry.

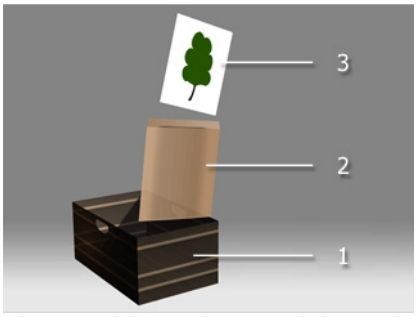
4. Now the locked prop cannot be selected in the working area, unless the lock box is inactivated.



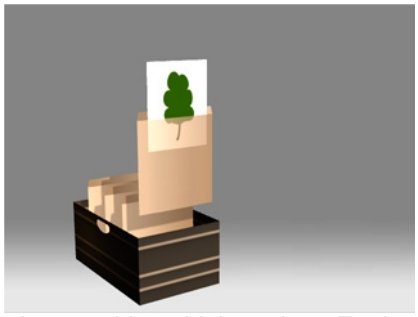
Click on the locked table to only select the character.

What is a Prop?

In **CrazyTalk Animator**, each prop can be composed of at least one sprite. In another words, a prop is usually a group of at least one sprite.
The individual sprite, that forms the prop, can have more than just one element. The format of the element can be of a image or video.
The structure concept is described in the following illustrations:



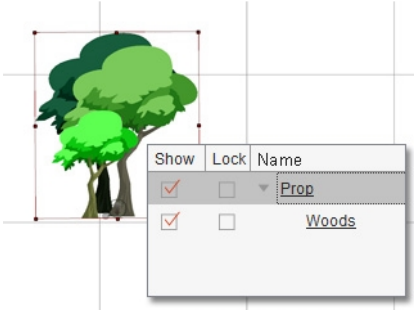
A prop with a sprite containing a single media file.



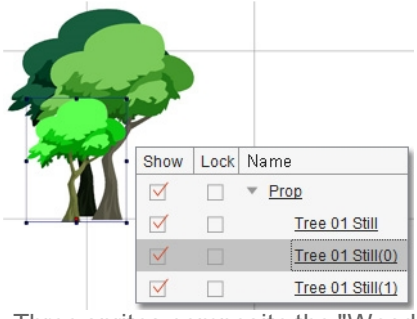
A prop with multiple sprites. Each sprite contains one or more media files.

1. Prop (invisible) on the stage.
2. Sprite (invisible) in the prop.
3. Element (visible) in the sprite.

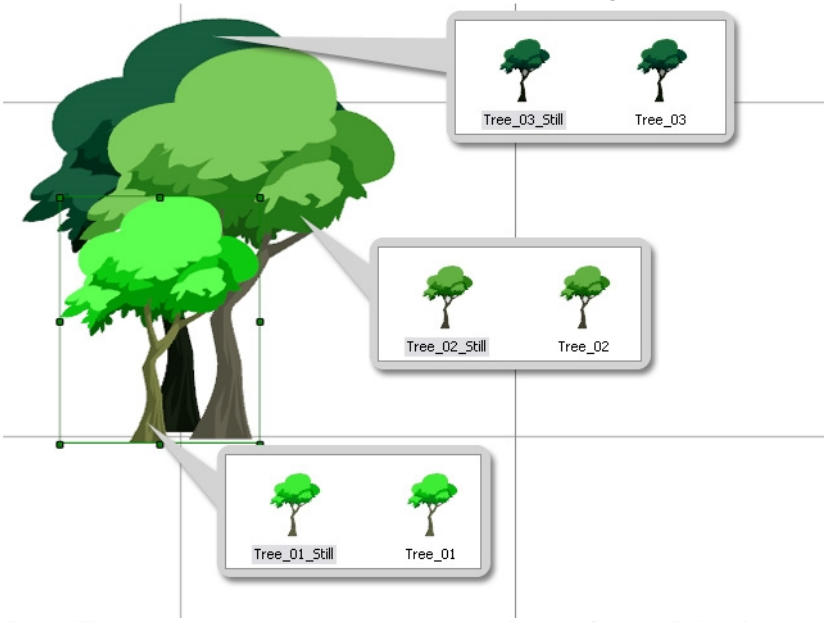
Below is another example with item structures:



A prop named "Woods" in the **Stage Mode**



Three sprites composite the "Woods" prop in
the **Composer Mode**



Each "Tree" contains one or more elements (Using **Sprite Editor**)
With these elements you may set keys to create an appearance-changing animation.

Note:

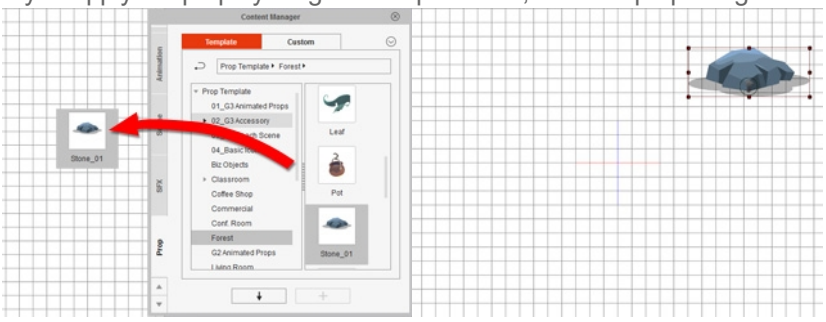
Please note that muti-angle props are not supported in this version yet.

Loading Props from the Library

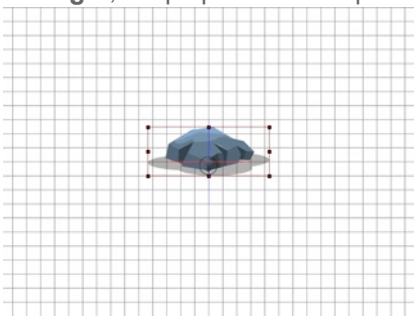
In **CrazyTalk Animator'sStage Mode**, you will find many prepared props inside the library. You may build great scenes by applying any of these multiple props.

Loading a Prop from the Library

1. Create a new project.
2. In **Stage Mode**, go to the **Prop** content folder in the **Scene** tab of the **Content Manager** and apply a template.
   - If you apply the prop by drag-and-drop method, then the prop will generate where you drop it.



   - If you apply a prop by double-clicking on it, or by clicking the  **Apply** button under the **Content Manager**, the prop will then be put in the center of the scene.

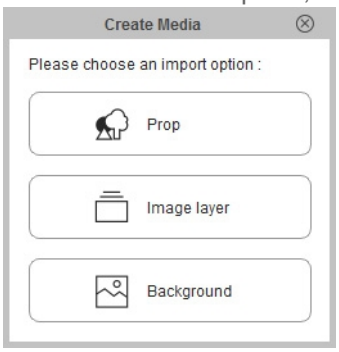


Creating Props

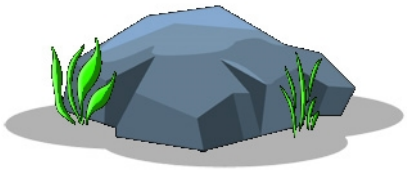
Creating props inside **CrazyTalk Animator** will help you build fresh new scenes without needing templates from the existing libraries. You may also create hybrid scenes by adding embedded props with custom ones.

Creating Props

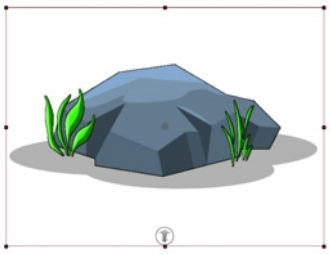
1. In the **Stage Mode**, click the **Create Media** button.
2. In the **Create Media** panel, click the **Props** button.



3. Load a media file.



4. The media file will then be converted into a prop.

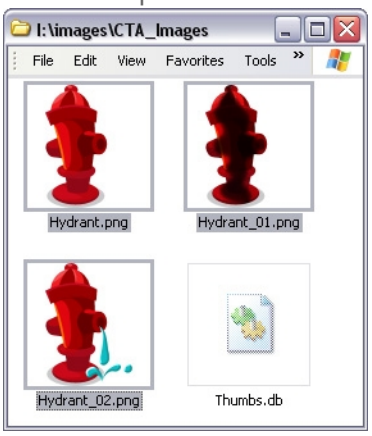


Create a Prop by Drag and Dropping

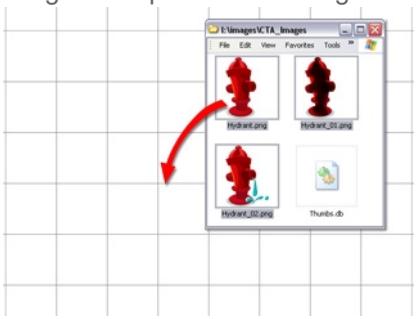
When you want to create a Sprite Switch animation, you need to append more elements to a sprite in order to form a prop.

A. **Creating a Prop from Multiple Media**

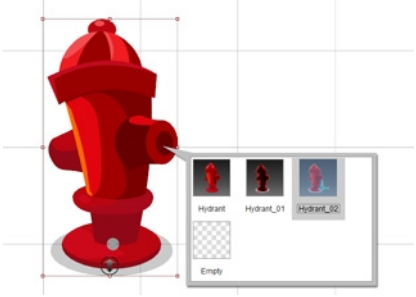
1. Select multiple media files from the source folder in **Stage Mode**.



2. Drag and drop into the working area of **CrazyTalk Animator**.

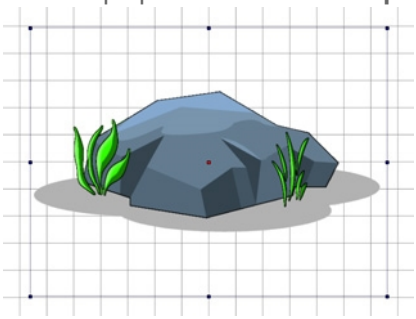


3. A new prop will be generated with a sprite containing media files.

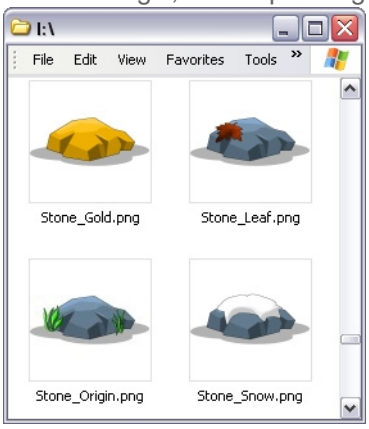


B. **Appending Media to a Sprite**

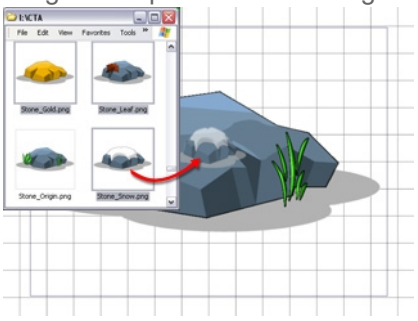
1. Select a prop. Switch to the **Composer** mode.



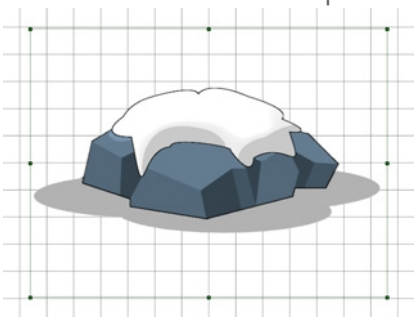
2. Select a single, or multiple image files, from the source folder.



3. Drag and drop them onto the target sprite inside the working area of **CrazyTalk Animator**.



4. Pick the sprite and click the **Sprite Editor** button in the **Stage** mode. Now all the media will be converted into elements of the sprite.



Note:

- The elements of a sprite may be media files of different formats:
  - **Image**: *.jpg, *.bmp, *.gif, *.png, *.tga.
  - **Video**: *.avi, *.wmv, *.rm, *.rmvb, *.mpg, *.mpeg, *.mpe, *.mp4, *.asf, *asx, *.wm, *.flv, *.mov, *.swf
  - **Reallusion Specific Format**: *.iWidget, *.popVideo

Creating Composite Props with the Composer

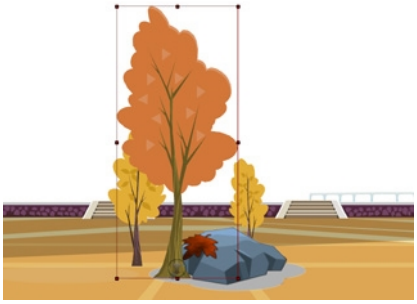
After creating props in the **Stage Mode**, you may use the **Composer** to make props contain other sprites.

Replacing a Prop

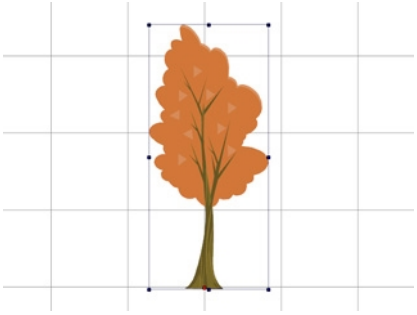
1. Prepare a project with at least one prop.



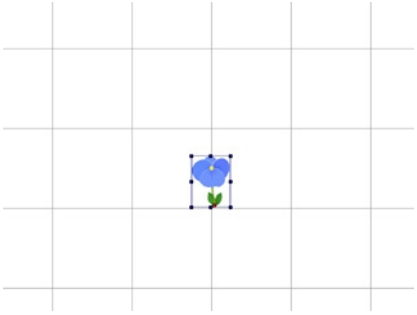
2. Select a prop for replacing and click the **Composer** button.



3. In order to replace a prop, you will need to select it in the **Composer Mode**.



4. Apply another prop from the library. The previous prop will now be replaced.

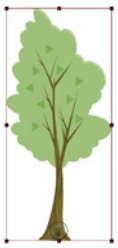


5. Click the **Back to Stage** button to update the prop.

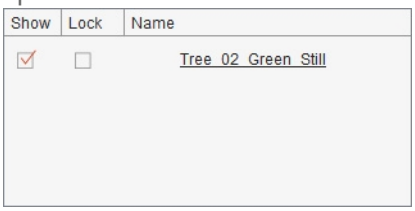


Creating a forest with a single tree

1. Apply a tree prop and select it in the **Stage Mode**.



2. Switch to the **Composer Mode** by clicking the **Composer** button.
3. In the **Composer Mode**, look inside the **Scene Manager** and you will notice that the prop only contains one sprite.



4. **DO NOT** select the prop. Just apply the same tree prop over and over again from the library.



Please note that in the Composer mode, this step is merely borrowing the sprite from the prop library.

5. Click the **Back to Stage** button to update the prop.
6. You have now created a Forest with one single prop.



Note:

- Each component of a prop is a sprite. Basically, a newly-created prop is a prop consisting of a single sprite in which only one media file exists.
- Please refer to the sections below for more information:
  - What is a Sprite?
  - Preparing a Custom Sprite

Modifying a Prop with the Composer

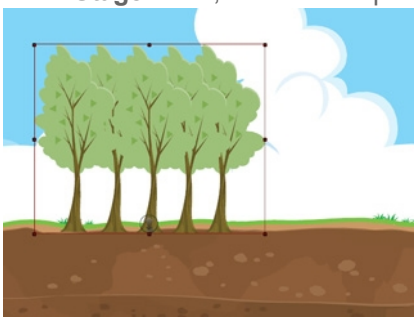
With the **Composer**, you may change the center of the prop, modify the transformation of each sprite in the prop, attach sprites with each other and arrange the layer order for each sprite.

- Modifying the Sprite Transformation of a Prop
- Using the Attach Feature
- Changing the Layer Order of Sprites
- Locating the Center
- Making a Sprite-chain Prop

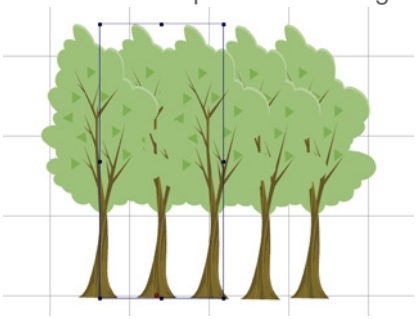
Modifying Sprite Transformations of a Prop

Inside the **Composer** mode, you may adjust the position, the orientation and the size of each prop sprite. This may alter the appearance of the prop. With this feature, different props with identical sprites inside, may look different due to the modifications of the transform data.

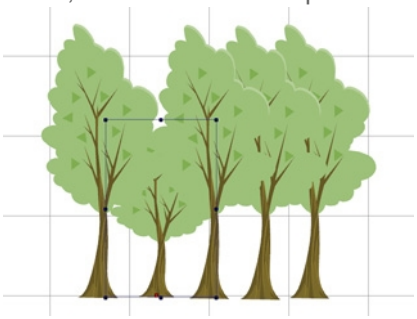
1. In the **Stage** mode, select a composed prop with compound sprites.



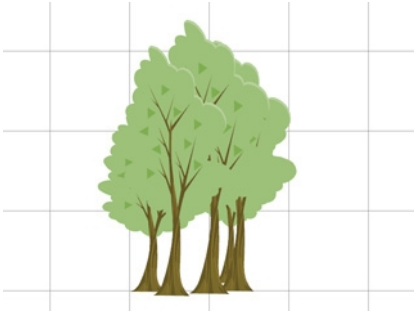
2. Click the **Composer** button.
3. Pick one of the sprites that belong to the prop. You may then see the transform handle appear around the sprite.



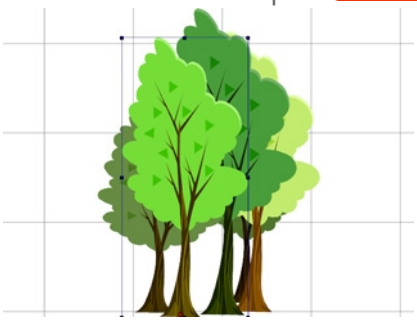
4. Move, scale or rotate the sprite.



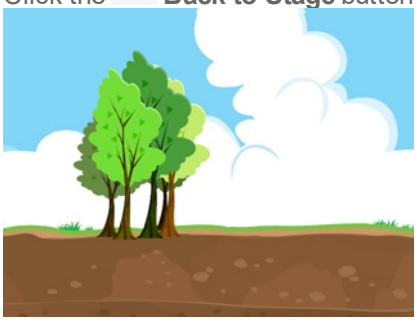
5. Repeat the steps to transform one or more sprites inside.



6. Edit the color for each sprite. Pro & Pipeline



7. Click the **Back to Stage** button to update the prop.



Note:

- The red point can be seen as the center of a sprite. Locating, rotating or scaling will be based on this point.

Modifying Texture of Prop Sprite Elements

Pro & Pipeline

If you want to change the texture of any element in a sprite, then you need to enter the **Composer Mode**.

For **Image-based** elements, you can use any **External Image Editor** for editing.

Editing Textures of Image-based Elements

If you want to use an external image editor to modify an image-based element, then follow the steps below:

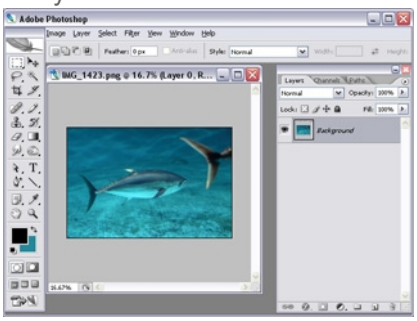
1. Pick a prop in the **Stage Mode**. Click the **Composer** button to switch to the composer mode.



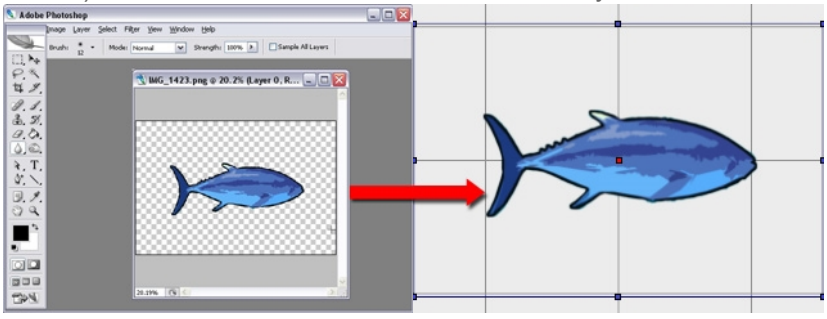
2. Select the prop and then click the **Launch External Image Editor** button.



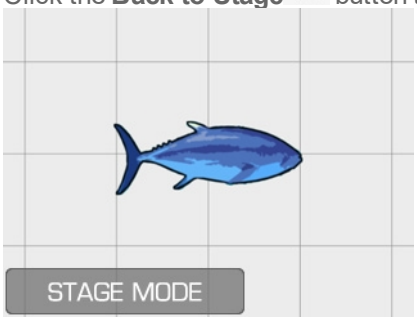
3. **CrazyTalk Animator** will then launch your specified image editor (e.g. Photoshop) with the texture opened in it ready for advanced modifications.



4. Edit the image (In this case, the background is erased, the fish's color is adjusted and applied with special effects) and save. The data will then be automatically transferred into **CrazyTalk Animator**.



5. Click the **Back to Stage** button to update the prop in the **Stage Mode**.



Note:

- Only image-based elements may be modified with an external image editor. If the element is a video or SWF-based, then the **Launch External Image Editor** button will be disabled.

Creating Cutouts (Sprites) by using the Mask Editor (New for v3)

In **CrazyTalk Animator**, when you want to create layers with original image, then you need to use the editable **Masks** to cut off the unnecessary parts. By defining the masking area with the default editing tools, you can quickly create a masked image instead of using any external image editor.

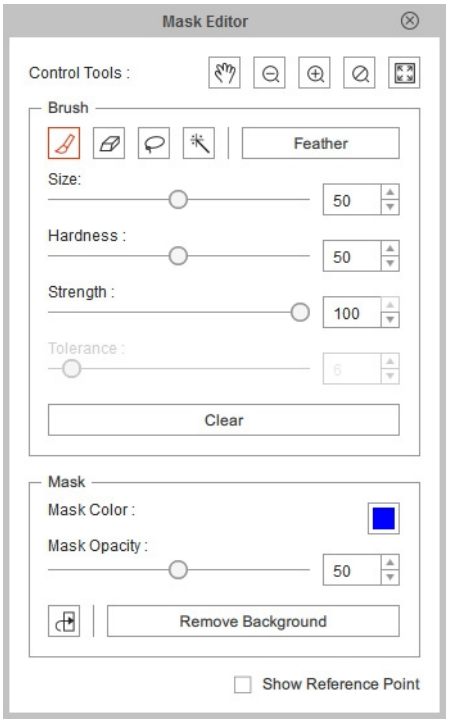
Note:

You can always use your favorite external image editor to do the masking procedure if you want to.

To open the **Mask Editor** panel, select a character or a prop first, then switch to the **Composer** mode, pick a body part or the prop image, and then click the **Mask Editor** button on the Toolbar.



You will see the **Mask Editor** on the screen.



Pan (Alt + Left mouse button) — Use this tool to pan and view the desired area of the photo.

Zoom Out (Mouse wheel down) — Click this button to decrease the zoom percentage.

Zoom In (Mouse wheel up) — Click this button to increase the zoom percentage.

Actual Size — Click this button to restore image to its original size.

Fit to Window — Click this button to resize image to fit it in the Preview window.

Brush — Use this tool to paint on the photo to add to the masked area.

Eraser — Use this tool to erase any unwanted masked area.

Lasso — Use this tool to enclose and fill up the area, and defined it as masked.

Select by Color — Use this tool to select the desired color. You can use the **Tolerance** slider to determine the threshold for selecting.

Feather — Click this button to perform advanced settings to the current mask.

Clear — Click this button to delete the current mask.

Inverse Mask — Click this button to inverse the mask area.

Brush Settings

Brush Size

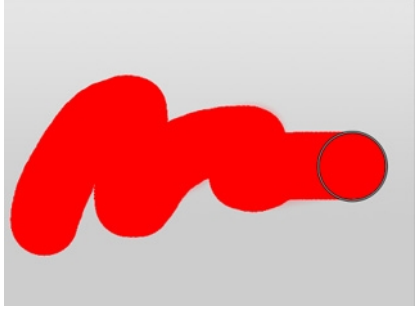
Drag the slider to define the size of the currently used tool.

Brush Hardness

This value determines the feather level of each stroke. The higher the value, the sharper the edge of strokes.



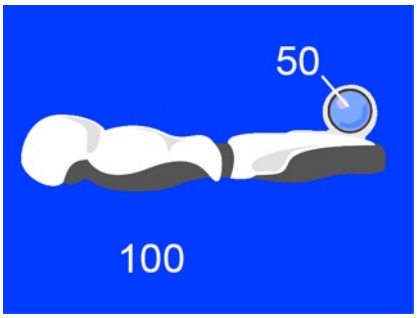
Brush Hardness: 30



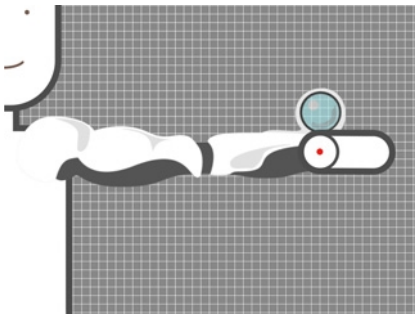
Brush Hardness: 100

Brush Strength

This value determines the strength of each stroke, it also affects the visibility of the makeups or effects. The higher the value, the more obvious the makeup or effect of a stroke.



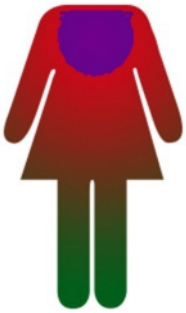
Brush Strength: 50 and 100



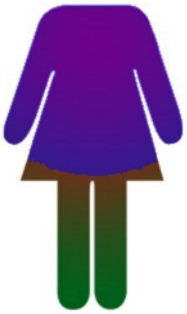
The areas with weaker stroke strength will create semi-transparent effect

Select Color - Tolerance

When you switch to the **Select Color** tool, the **Tolerance** slider will be enabled. You can use it to determine the threshold of the color similarity on the image to be selected.



Tolerance: 5



Tolerance: 50

Mask Settings

The mask settings only deal with the way the mask displays. They do not influence the masking result of the image.

Mask Color

You can use the color picker to select the color of the mask.



The default mask color



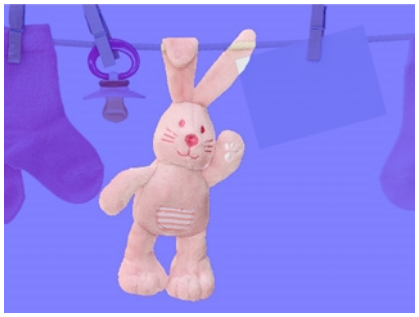
Customized mask color

Mask Opacity

Use this slider to determine the opacity of the mask in order to view the original image for reference.



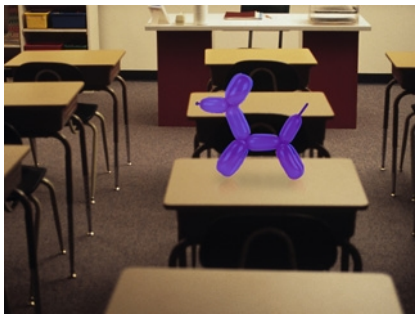
Opacity: 100



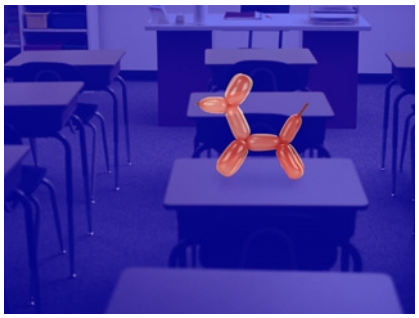
Opacity: 50

Inverse Mask

Click this button to inverse the mask areas. It is very useful when the areas of the image you want to make foreground are easy to be selected with the **Select Color** tool, while the others are complicated. You can first cover the foreground with a mask, and then inverse the mask in order to cut out the foreground areas.



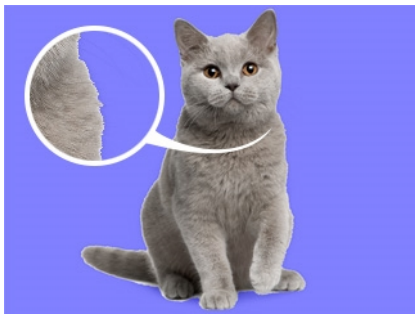
Before inversion



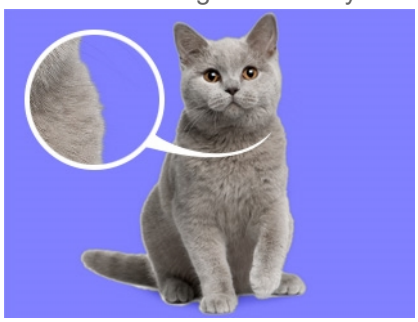
After inversion

Feather Settings

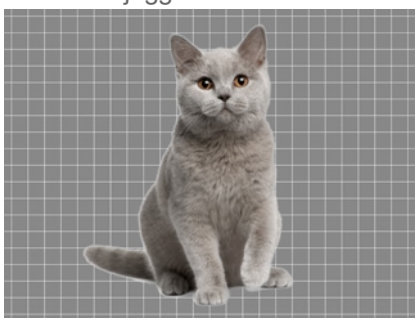
- Feather: You can use this feature to make the mask edge more blurry and to solve the jagged issue.



Feather: 0



Feather: 50



The edge is fluffy with the feather method

- Contract / Expand: Use this slider to determine if the unmasked areas are to be cut more or less. Contracting the mask area can also create a body part with outlines.



Contract / Expand: 0



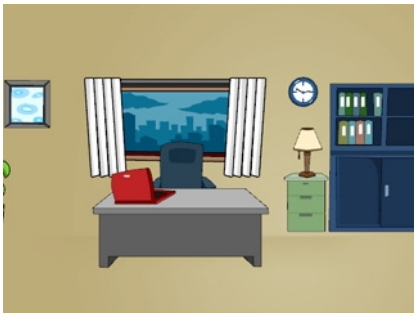
Contract / Expand: -10
The mask shrinks.

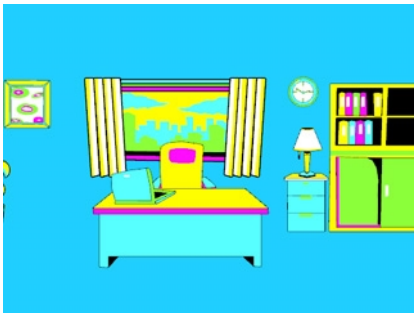
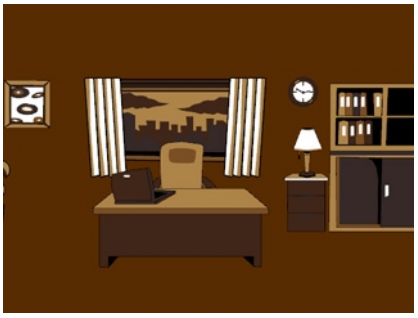


Outline created with the **Contract / Expand** method.

Modification with Render Style

CrazyTalk Animator provides **Render Style** feature for changing the color of your props, either vector-based or image based. By setting different render styles, the entire scene composed of props can be changed to different scenarios.



Please refer to the sections below for more information:

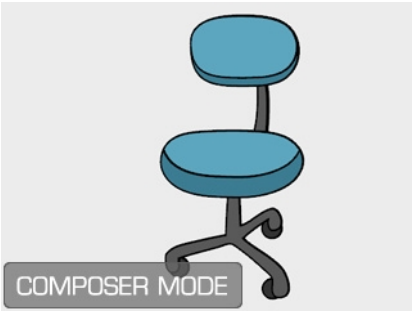
- Changing Props Render Style - Basic: For switching between different template of **Render Styles**.
- Changing Props Render Style - Advanced: For modifying the render styles of individual props to the templates.
- Grouping Sprites for Render Style: For creating and designing contents that are compatible with the render style feature.

Changing Props Render Style - Basic

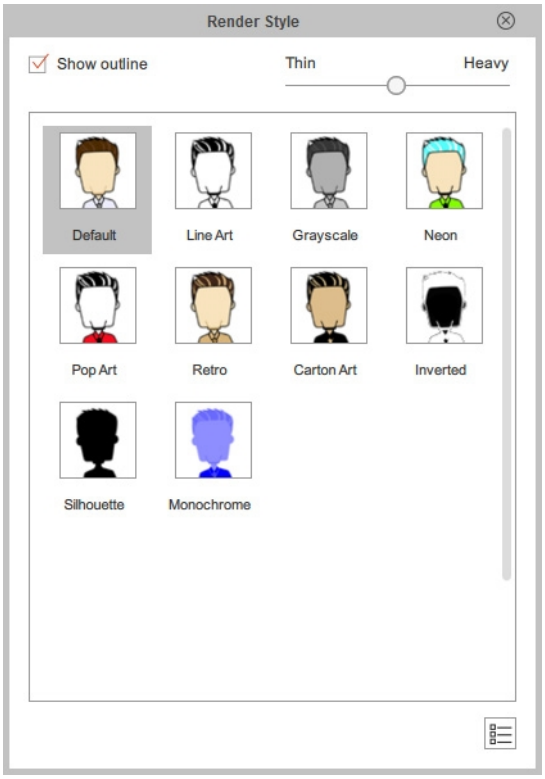
Pro & Pipeline

For each default vector-based prop, its sprites are well-grouped and is embedded with pre-defined render styles. You may simply select the ideal style and the colors of the sprites simultaneously change.

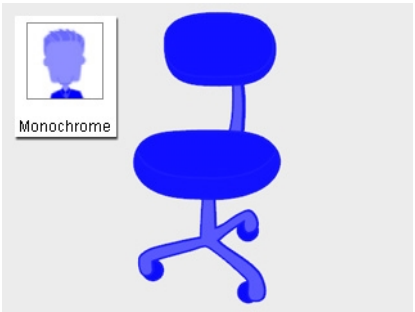
1. Apply a default prop and switch to the composer mode.



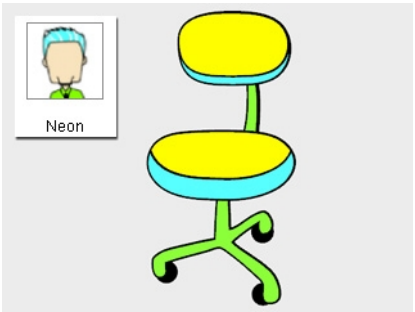
2. Click the **Render Style** button to open the panel.



3. Click on either of the template to change the render style of the prop.



Monochrome: This template shows the initial color of the prop sprites.

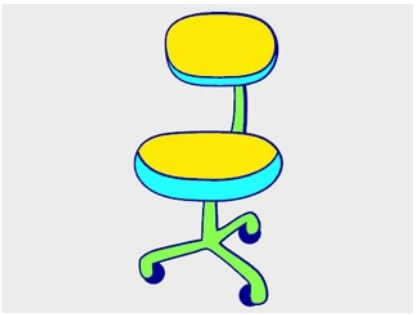


Neon: Innovative and experimental fashion style for the prop.

4. Drag the **Weight** slider to determine the level of the render style effect on the prop.



Weight = 100



Weight = 30
(the prop color will be closer to the initial color, which is blue)

5. You can also activate or deactivate the **Show Line** box to show/hide the contour line of the prop.



Show Line = On



Show Line = Off

Note:

If you want to create custom groups of the prop's sprites, then refer to the section below for more information (please note that the feature only supported by **Pro** or **Pipeline** version):

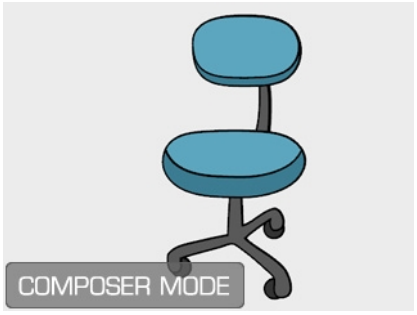
- Changing Props Render Style - Advanced

Changing Props Render Style - Advanced

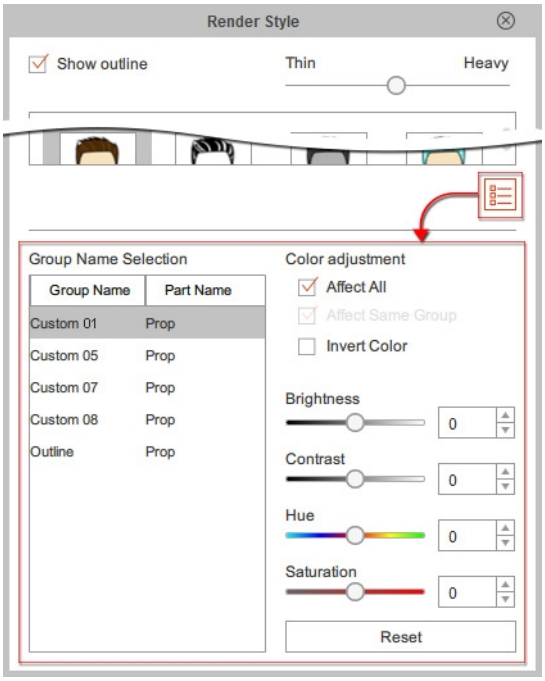
Pro & Pipeline

In addition to changing the prop's render style by embedded templates, you are able to manually set the render style by pre-defined sprite groups if you are using the **CrazyTalk Animator Pro** or **Pipeline** version.

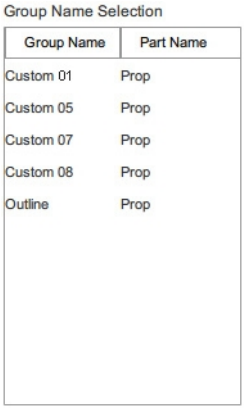
1. Apply a prop and switch to the composer mode.



2. Click the  **Render Style** button to open the panel (you may optionally follow the steps in the Changing Props Render Style - Basic section to set the character in different render style).
3. Click on the **Advance Settings** button at the bottom right of the panel to show the advanced settings.



4. Select an item in the **Body Part Selection** pane.



Note:

You may also grouping the sprites for setting render style together. Please refer to the Grouping Sprites for Render Style section for more information.

5. Drag the **Brightness**, **Contrast**, **Hue** and **Saturation** sliders to adjust the parts with same group name.



The initial look of the skin color.



The color of the parts with same group name are simultaneously adjusted.

Note:

Click the Reset **Reset** button to reset the four sliders to the initial settings of the currently selected template.

6. If you activate the **Invert Color** box, then the parts in the same group will be changed to the complementary color.



The initial look of the cushions color.



The color is changed to its complementary color.

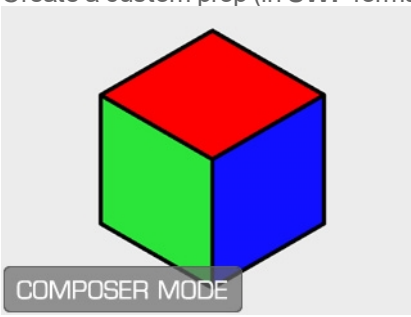
Grouping Sprites for Render Style

Pipeline Only

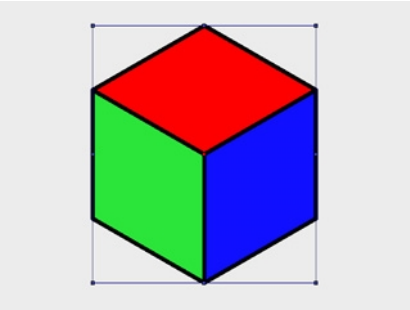
The **Render Style** feature assists you to change the color of grouped sprites once and for all. You are able to group custom poses and angles in sprites for easily adjusting their colors by the use of the **Render Style**.

*Please note that this feature is for the **Pipeline** version only.

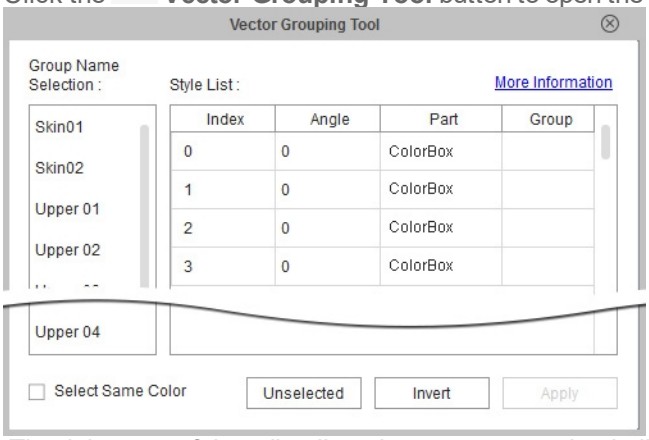
1. Create a custom prop (in **SWF** format) and switch to the **Composer Mode** by clicking the **Composer** button.



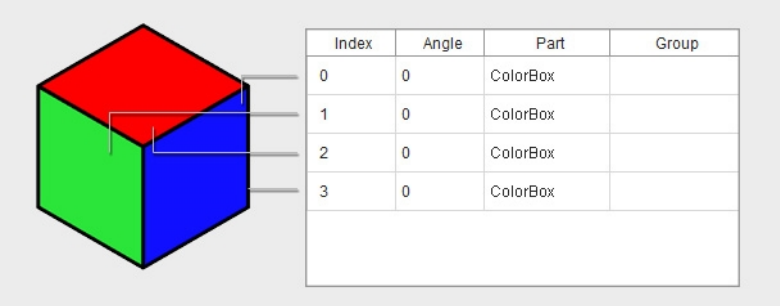
2. Select the prop.



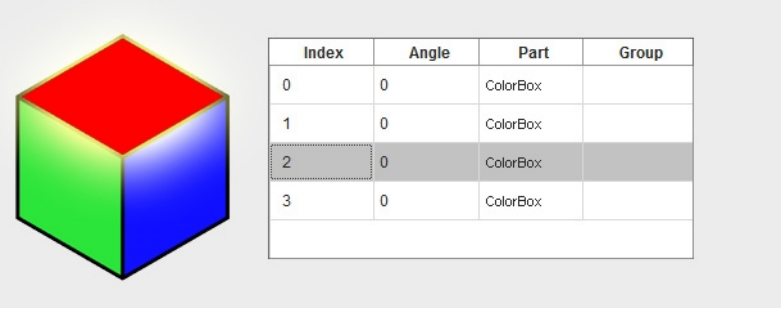
3. Click the **Vector Grouping Tool** button to open the panel.



The right pane of the editor lists the components that build up the prop in the view port.



4. Click to select one of the component row. The selected area in the view port will be flashing.

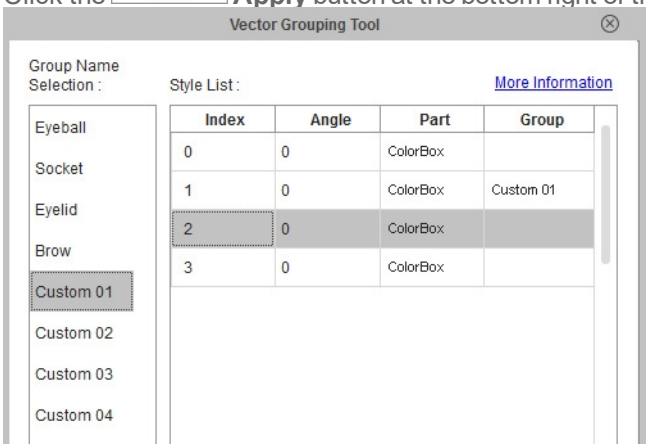


5. Select a desired group name from the left pane of the editor.

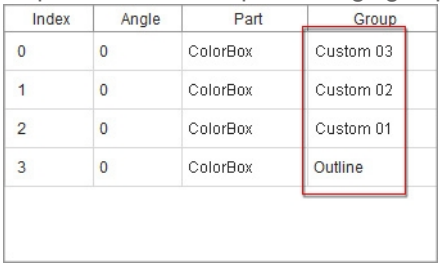


6. Click the 

Apply button at the bottom right of the editor to assign the group name to the component.



7. Repeat the same steps to assign group names to every component that is without a group name.

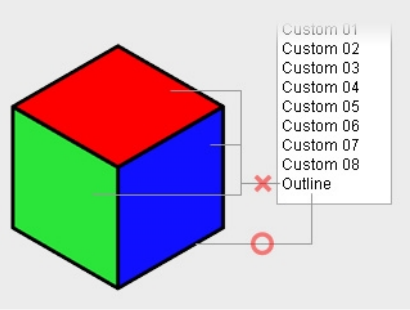


8. Select another component and repeat step 2 to 7 until every one is grouped.

Note:

Please note that since the **SWF** from **Flash** can be divided into two main components, **Shape** and **Line**, when you

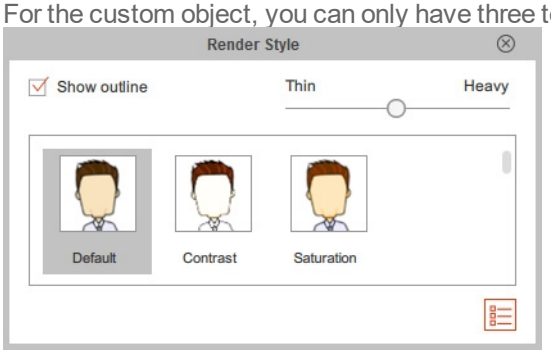
are doing the vector grouping procedure, **DO NOT** assign the "shapes" into the **Outline** group, because although the color of the shapes are able to be adjusted with the real lines, they can not be turned off by deactivating the **Show Outline**. Make sure you only assign "lines" to **Outline** group.



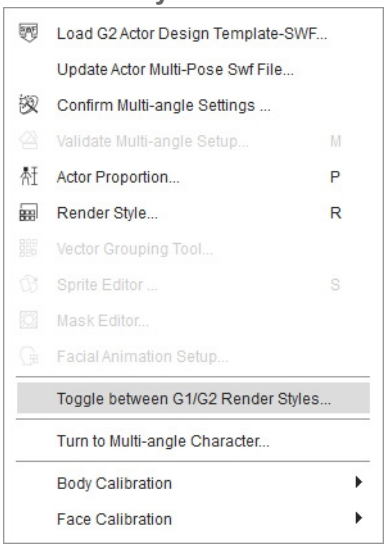
9. Close the editor and open the **Render Style** panel by clicking the button.

   Note:

   - For the custom object, you can only have three templates after the **Render Style** button is clicked.



   - If you want to have ten default **Render Style** templates, then execute the **Modify** >> **Toggle between G1 G2 render styles** command for switching to the list with these templates.

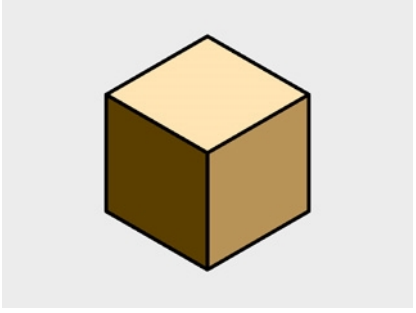


   - Please note that you need to manually set the settings of the ten templates, including the **Default** one.

10. The grouped components thus can be assign with different render styles.



The outline is turned off



The colors of the surfaces are adjusted (Retro style).

Note:

Please refer to the sections below for more information:

- Changing Props Render Style - Basic
- Changing Props Render Style - Advanced

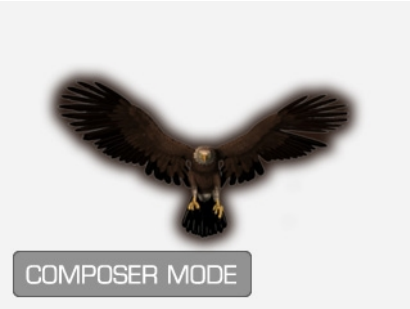
Customizing Render Styles for Image-based Props

Pro & Pipeline

Although the **Render Style** tool is suitable for vector-based props, you are able to use this feature to modify image-based ones as well so that every kind of prop can be given **Render Style** presets.

By setting the render style presets of the image-based props in the composer, you are able to change the props to certain designated color schemes.

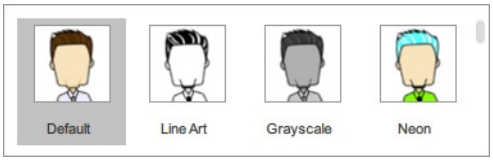
1. Create an image-based prop and switch to the **Composer** mode.



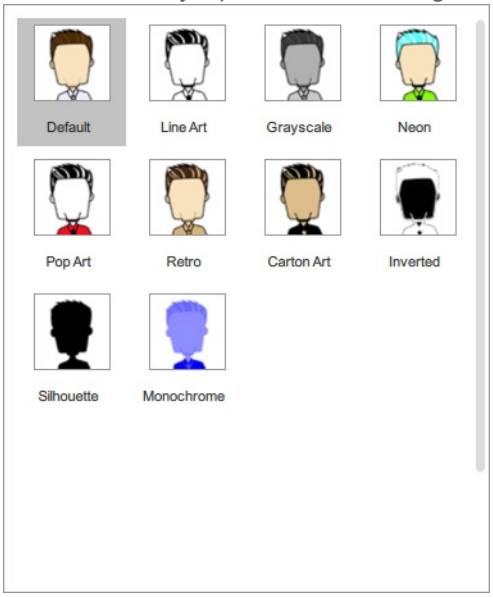
2. Click the  **Render Style** button to open the panel.

   Note:

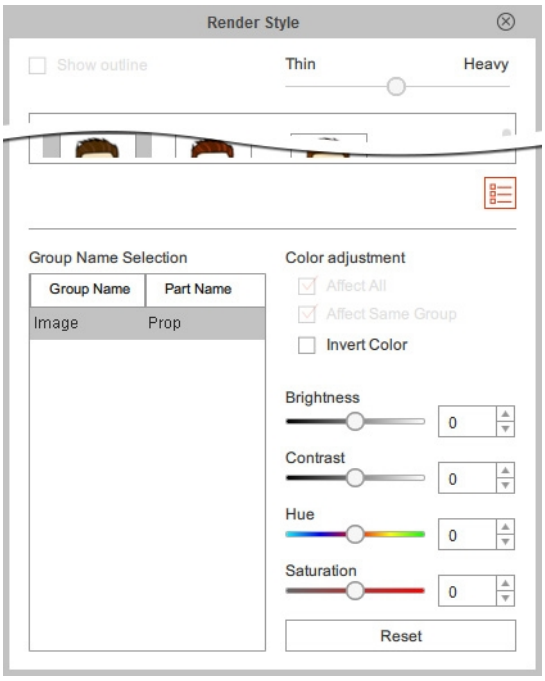
   - Normally, image-based props can only be used with the three embedded presets in the panel, **Default**, **Contrast** and **Saturation**.



   - You may optionally execute the **Modify** >> **Toggle Between G1/G2 Render Styles** command to toggle the 10 render style presets for the image-based props.



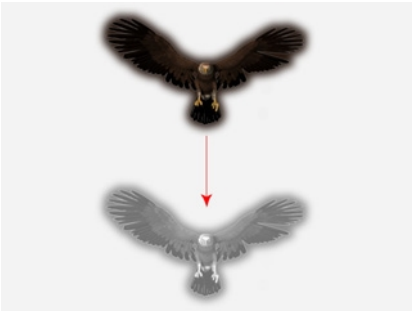
3. Click on the **Advance Settings** button at the bottom right of the panel to show the advanced settings.



4. Because this is an image-based prop, the image of the entire prop will be automatically put into the **Image** group in the **Group Name Selection** pane.



5. Select the prop from the **Group Name Selection** list.
6. Leave the **Default** preset unchanged to keep the original color of the prop in this preset.
7. Select the **Grayscale** preset. Minimize the **Saturation** value to turn the prop gray.



Note:

There are two boxes that allow you to quickly adjust the images of the prop simultaneously.

- **Affect Same Group**: Activate this box to affect images with identical group names.

Group Name	Part Name
Image	Head
Image	Shoes
Image	Upper Torso
Image	Lower Torso
Skin01	Hands
Skin02	Hands
Outline	Hands

- **Affect All**: Activate this box to affect every group when you are adjusting the four slider values. This is often used for the props that are composed of both bitmap and vector images.

Group Name	Part Name
Image	Head
Image	Shoes
Image	Upper Torso
Image	Lower Torso
Skin01	Hands
Skin02	Hands
Outline	Hands

8. Select different preset and set the **Brightness**, **ContrastHue** and **Saturation** values to create different customized presets for the prop.



Line Art



Neon



Pop Art



Retro



Carton Art



Inverted



Silhouette



Monochrome

Using the Attach Feature

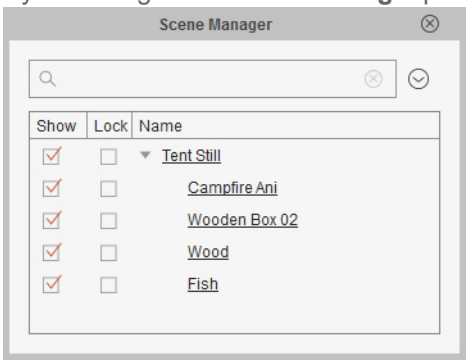
After you create composite props with the Composer, the components, also named sprites, are all at the same level under the root node. However, you may need to group some sprites together to have them animate at the same time. Use the **Attach** feature to group them.

Attach Feature

1. In the **Stage Mode**, select a compound prop created earlier.



2. Click the **Composer** button.
3. By switching to the **Scene Manager** panel, you will be able to see the sprites that are under the root node.



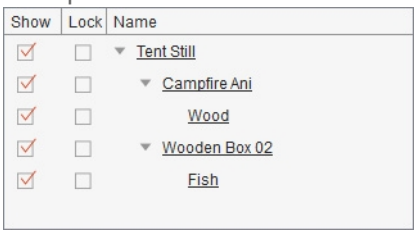
4. Select a sprite which is a child of another one.



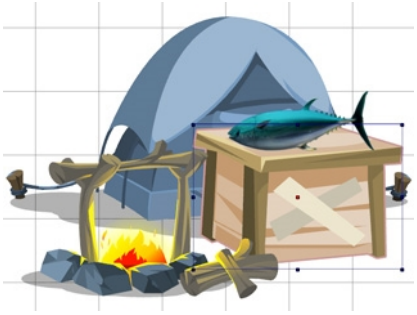
5. Click the **Attach** button and pick another sprite which you want as a parent.



6. The sprite will then be moved under the new parent.



7. If you transform the parent, then the child will be affected as well.

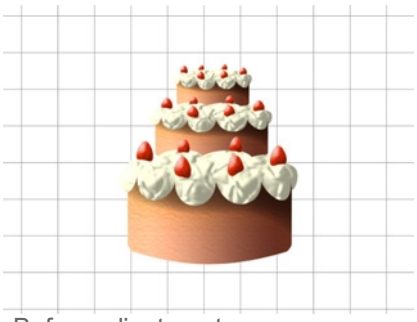


Note:

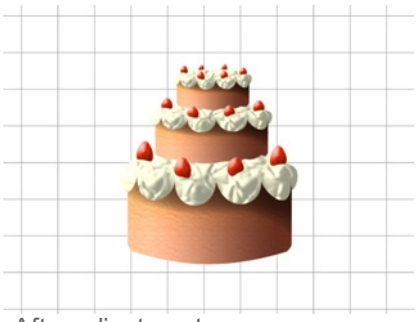
- The **Attach** feature can only be done in the **Composer Mode**.
- If you need to detach the sprite, then use the **Attach** feature and then pick the root sprite to detach from the new parent.
- Please refer to the sections below for more information:
  - Sprite-based Project
  - Sprite Transformation Animations

Changing the Layer Order of Sprites

After creating a prop with multiple sprites, you may adjust the sprite layer order in a compound prop with the **Composer**. You may arrange the visual logic of the prop as seen below.



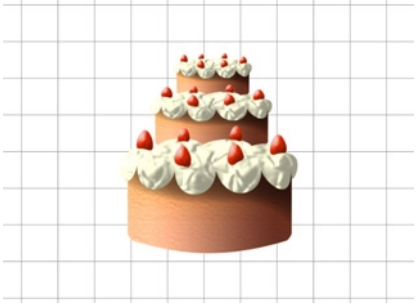
Before adjustment



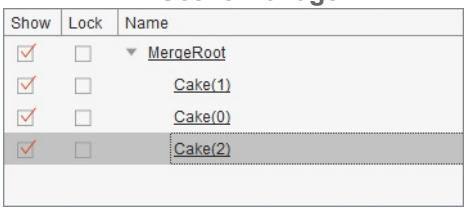
After adjustment

Changing the Layer Order

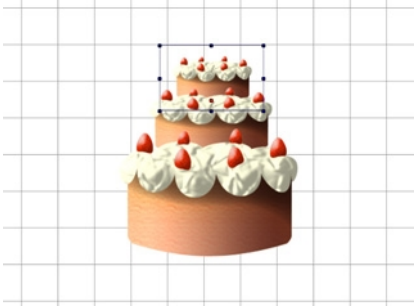
1. Select a compound prop. Click the **Composer** button to enter the **Composer Mode**.



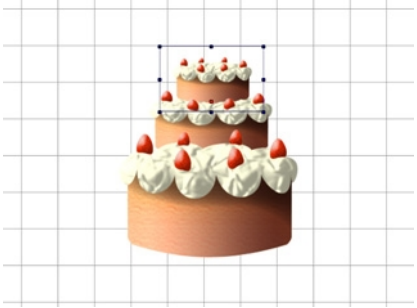
2. Switch to the **Scene Manager**.



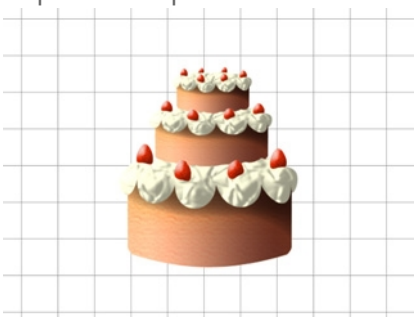
3. Select the item for which you want to change the order.



4. Click the **Move to top**, **Move up**, **Move down**, and **Move to bottom** buttons to re-arrange the order of the selected item.
5. You will be able to instantly see the changes inside the working area.



6. Repeat the steps until the look of the prop meets your visual logic.

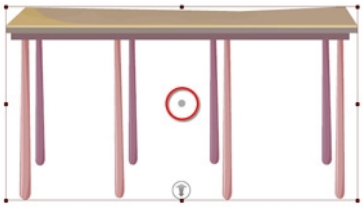


Locating the Center

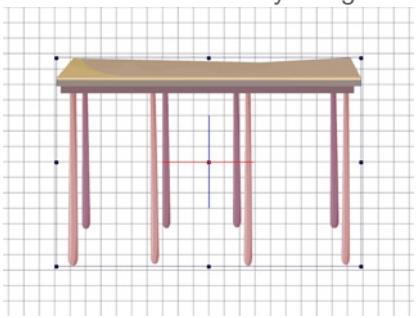
The center (also called "Pivot") of a character or a prop decides the base for position, rotation and proportion change in the Stage mode. You may use the **Composer** to locate the center of any character or prop.

Locating the Center of a Prop

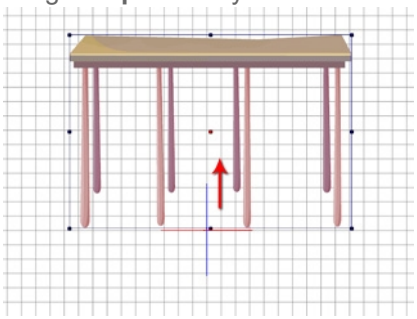
1. In **Stage Mode**, select a prop. You will notice that the center of the prop is inside a circle.



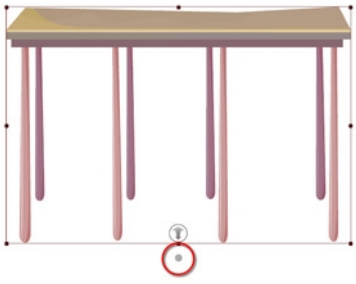
2. Click the **Composer** button.
3. Select the root sprite of the prop in the **Composer Mode**. (The root sprite can be found in the **Scene Manager**) Turn on the world axis by using the hotkey: **Ctrl + A**.



4. Drag the **sprite** away from the world center (where the axis coordination is).

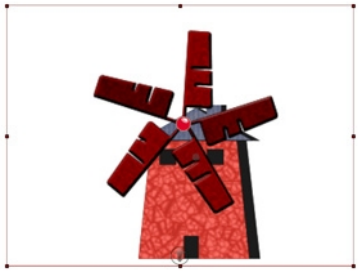


5. Click the **Back to Stage** button.
6. The center of the prop is now different. You may rotate or scale the character or prop, to see the difference.

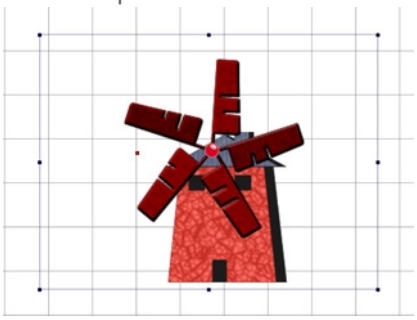


Locating the Center of a Sprite

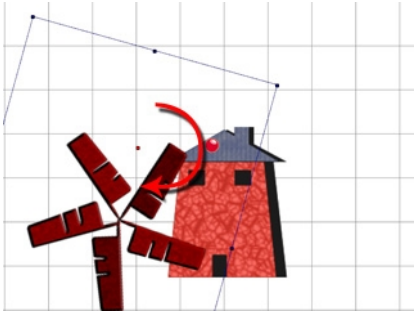
1. In the **Stage Mode**, select a prop.



2. Click the **Composer** button.
3. Select a sprite. A transform handle box will appear around the sprite.

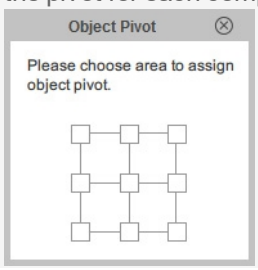


4. The red point is in the middle, which will cause an incorrect sprite rotation.

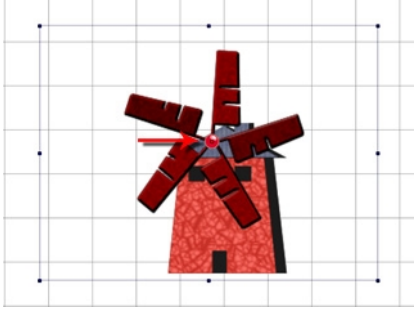


Note:

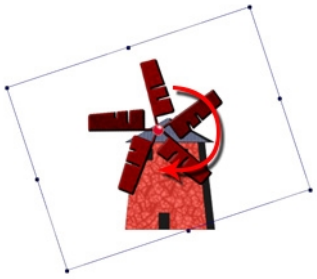
Click the **Pivot** button on the **Property Toolbar** to show the **Object Pivot** panel to determine the position of the pivot for each component object of the prop.



5. Drag the **Red Point** away from its original position. This point is the center, or the pivot, of the sprite.



6. Click the **Back to Stage** button.
7. The center of the sprite will now be relocated. Select the prop, then press the hotkey **K** to show the **Prop Key Editor** on the **Property Bar**. Pick the sprite and rotate it.



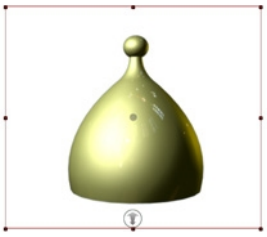
Note:

- Please refer to the Sprite Concept section for more information.

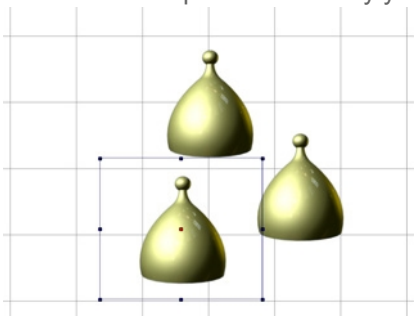
Making a Sprite-Chain Prop

If you want to create a prop with chained sprites, then you can use the **Attach** feature found in the **Composer** mode.

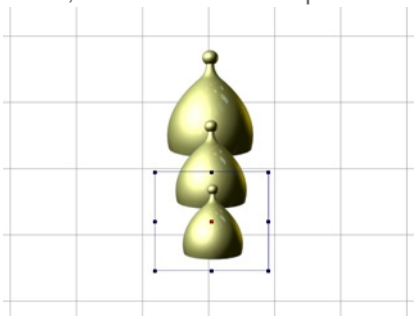
1. In **Stage Mode**, select a prop and save it into the prop library.



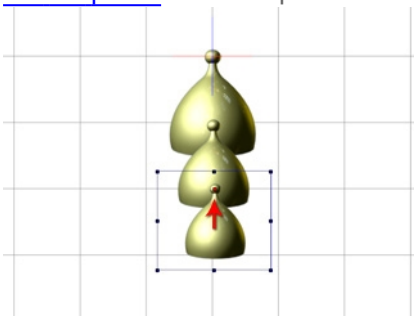
2. Switch to the **Composer** mode.
3. Search for the sprite in the library you saved in Step one. Drag and drop it into the working area twice.



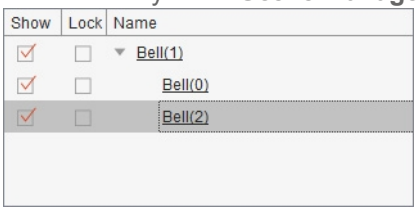
4. Move, rotate or scale the sprite to the appropriate position.



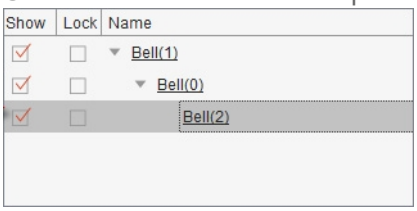
5. Set the pivots for each sprite to the right place for correct rotation.



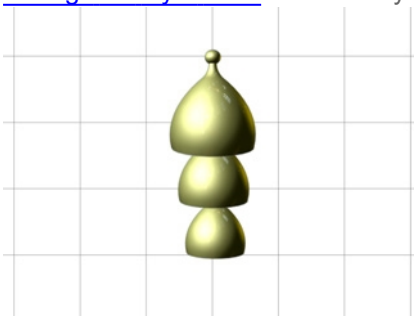
The hierarchy in the **Scene Manager**:



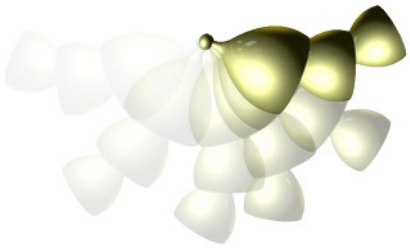
6. Use the attach tool to set the sprites into a tree structure.



7. Change the layer order if necessary.



8. Click the **Back to Stage** button to update the prop.
9. The motion of the chained prop can now be set using the **Prop Key Editor** (shortcut: K) on the **Property Bar**.

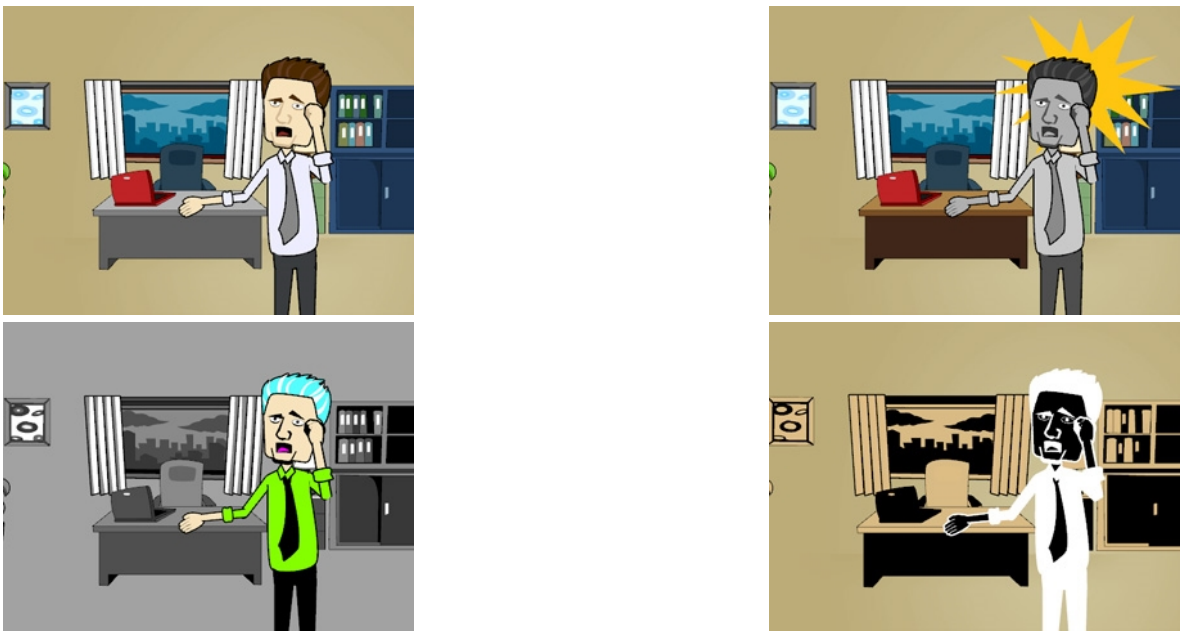


Note:

- The **Attach** feature can only be used in the **Composer Mode**.
- If you need to detach the sprite, then use the **Attach** feature and then pick the root sprite to detach it from the new parent.
- Please refer to the sections below for more information:
  - Sprite-based Project
  - Sprite Transformation Animations

Modification with Render Style

CrazyTalk Animator provides **Render Style** feature for changing the color of your characters and scene, especially for the vector-based ones. By setting different render styles, the story can be more different and appealing with various styles.



Please refer to the sections below for more information:

- Using Assets with Render Style
- Using Mask Props

Using Assets with Render Style

There are two kinds of embedded assets given **Render Style** settings and they are **G2 Characters** and specific **Props**. You may mix using them to build a special scenario for your story.

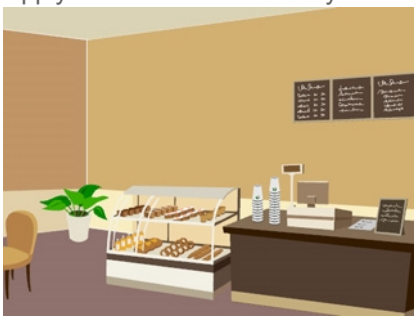
Assets with Render Styles

If you want to apply assets with render style settings, then go to specific libraries in the **Content Manager**. The assets that are given render styles are marked with **RS** at the top-left corner of their thumbnails:

Assets	**Thumbnail**	**Location** (default)
G2 Characters		• **Windows XP** - C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator2 Template\Character\G2 Character\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator2 Template\Character\G2 Character\
Props		The XXX within the paths below stands for **Business Objects**, **Coffee Shop**, **Conference Room**, **Office** and **Outdoor Scene**). • **Windows XP**: - C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator2 Template\Props\XXX\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator2 Template\Props\XXX\
Scenes (compact props)		• **Windows XP** - C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator2 Template\Scene\ • **Windows Vista or Above**: - C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator2 Template\Scene\

Compositing Project by Using Assets with Render Style

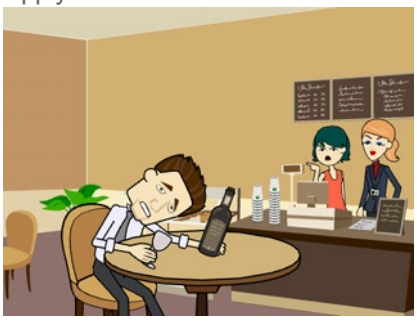
1. Apply a scene with render style settings from the library.



2. Adding more props with render style settings if necessary.



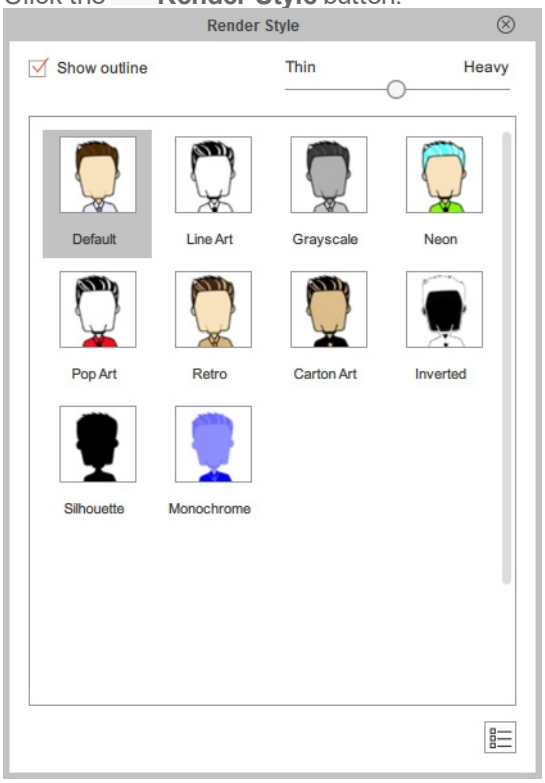
3. Apply one or more characters with render style settings from the library.



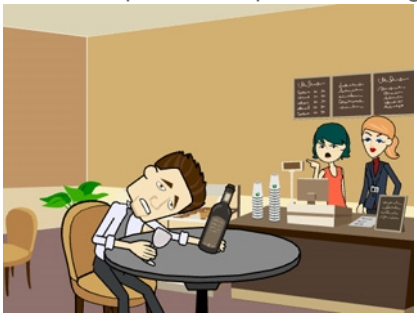
4. Select desired assets on the stage (in this case, the round table).



5. Click the **Render Style** button.



6. Pick a template in the panel to change the render style of the asset (in this case, the **Grayscale**).



7. Select multiple objects (props and/or characters).
8. Repeat the same steps to change the render style for them.



Setting Color Tones with Render Style

In addition to setting the **Render Styles** in the composer for the actor and props, you are able to set the **Render Style** for **Stage Mode**. Changing the time of the day for the project, or even setting objects with individual colors to the same color tone can be done by changing the **Brightness**, **Contrast**, **Hue** and **Saturation** settings. The benefit of this feature is that you can change multiple objects together in the **Stage Mode**.

Note:

Please refer to the sections below for more details about setting render styles for vector-based objects:

- **Characters**:
  - Changing Character Render Style - Advanced
- **Props**:
  - Changing Props Render Style - Advanced

Setting the Time of a Day

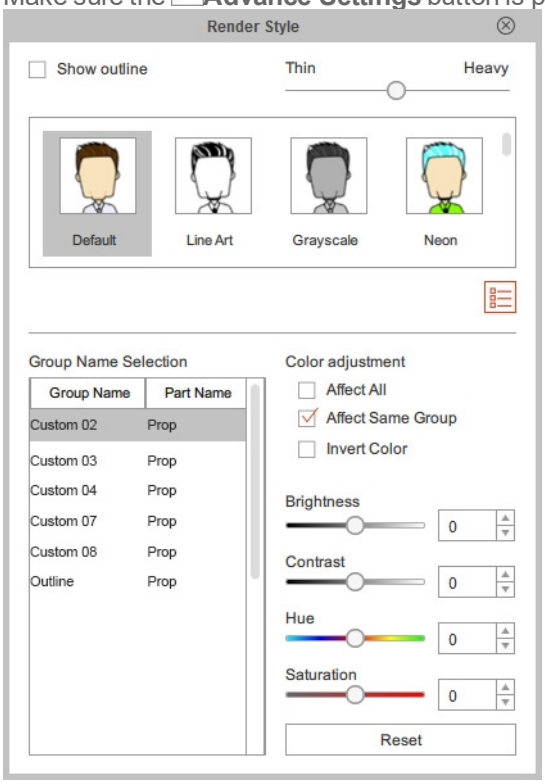
The templates in the Scene or Prop library of the Content Manager are always in a basic color that represents the objects as seen under normal lighting conditions. However, if you want to change the mood of the scene or time of day, you can use the Render Style tool.

1. Drag and drop the scene or props from the libraries of the **Content Manager**.



2. Select multiple objects for the colors you want to change (in this case, every object except the sun).
3. Click the **Render Style** button on the **Functional Bar**.

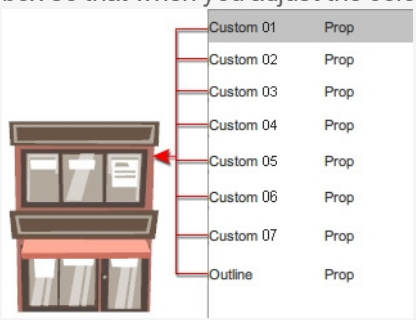
4. Make sure the **Advance Settings** button is pressed down to show the complete panel.



5. Select the **Default** preset in the list (because in this case, the colors of the objects are meant to be kept but turned darker).
6. Make sure the **Affect All** box is activated.

Note:

Because some of the objects can be composed of multiple color shapes, you need to activate the **Affect All** box so that when you adjust the color, every shape will be affected.



7. Drag the **Brightness** slider to decrease the value.



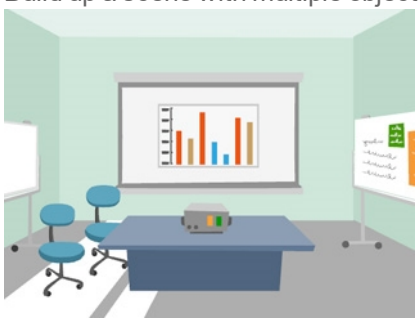
8. Optionally drag the **Contrast** slider to increase the depth sensation.



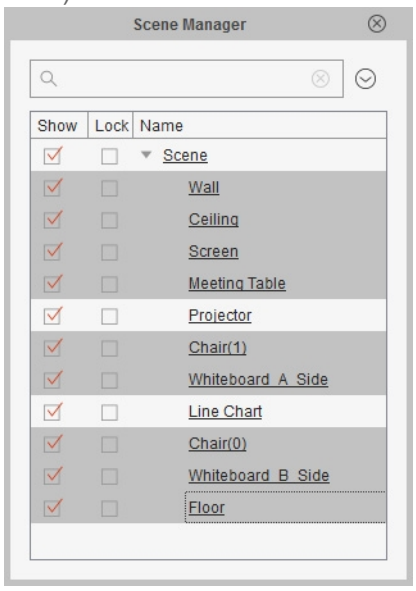
Setting the Color Tone

Since the objects in the prop and scene library are all possibly composed of different colors, when you gather them into one single project, you may need to set a cohesive color tone for them. This can be done by adjusting the **Hue** and **Saturation** values.

1. Build up a scene with multiple objects (props or scenes).



2. Select multiple objects to the colors that you want to adjust (in this case, everything but the projector and the bar chart).

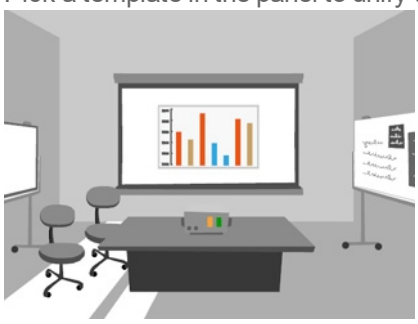


3. Click the **Render Style** button on the **Functional Bar**.

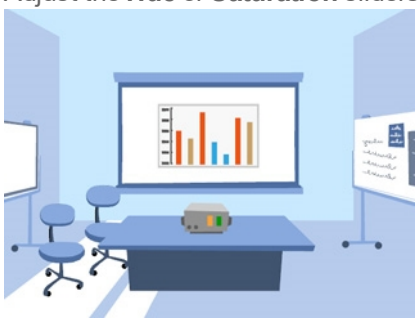
Note:

- Make sure the **Advance Settings** button is pressed down.
- Also, make sure the **Affect All** box is activated.

4. Pick a template in the panel to unify the colors of the asset (in this case, the **Grayscale**) in advance.



5. Adjust the **Hue** or **Saturation** sliders to set an ideal and cohesive color tone for these objects.



Changing Render Style for Image-based Objects

Render Styles can also be used for image-based objects (characters and props). You are thus able to quickly set the render style with ten presets or fine-tune the objects by using the **Brightness**, **Contrast**, **Hue** and **Saturation** values without switching to the **Composer Mode**.

Note:

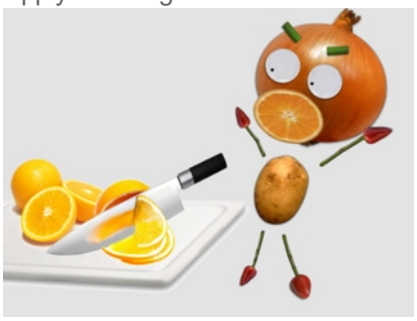
Before you start this section, you need to apply Render Style settings to the image-based objects. Please refer to the following sections for more information:

- **Characters**:
  - Setting Render Styles for Image-based Body Parts
- **Props**:
  - Setting Render Styles for Image-based Props

Using Render Style Templates

If you have set the ten render style presets for characters or props as described in the sections listed above, then you are able to apply these presets in the **Stage Mode**.

1. Apply the image-based characters or props (with **Render Style** settings already) to the scene.



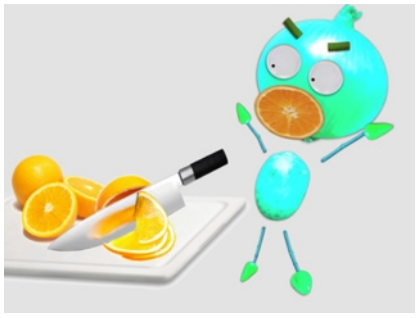
2. Select the object (you are allowed to select multiple objects) for the colors you want to change.
3. Click the **Render Style** button on the **Functional Bar**.
4. Choose either one of the **Render Style** presets to match your objects to the scenario.



Line Art



Grayscale



Neon

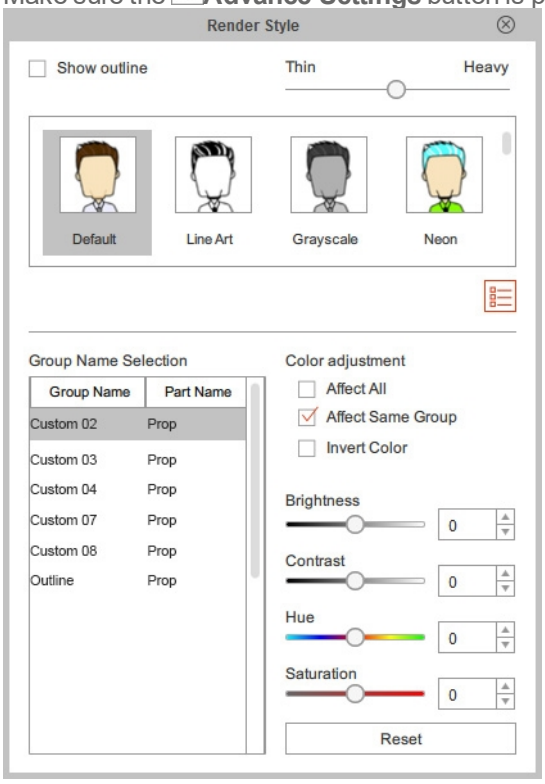


Inverted

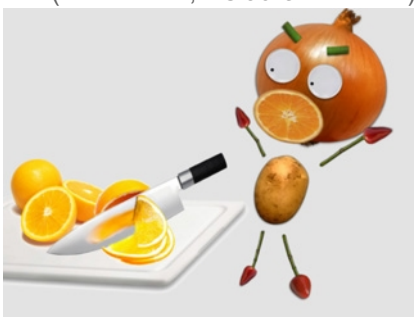
Fine-tuning the Color with Sliders

You are free to tune the color of the image objects with or without the **Render Style** presets applied to them.

1. Make sure the **Advance Settings** button is pressed down to show the complete panel.



2. Optionally Pick a template in the panel to unify the colors of the asset in advance as describe in the previous section (in this case, **Default** is chosen).

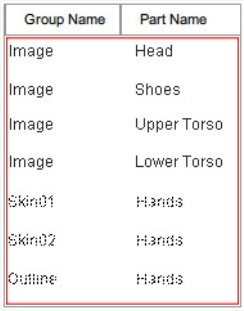


3. Deactivate the **Affect All** and **Affect Same Group** boxes in order to adjust individual items in the **Group Name Selection** list.

Note:

There are two boxes that allow you to quickly adjust the images of the prop simultaneously.

- **Affect Same Group**: Activate this box to affect images with identical group names.



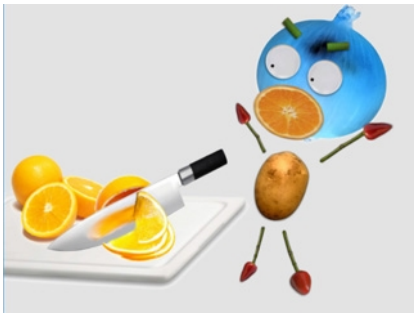
- **Affect All**: Activate this box to affect every group when you are adjusting the four slider values. This is often used for the objects that are composed of both bitmap and vector images.

Group Name	Part Name
Image	Head
Image	Shoes
Image	Upper Torso
Image	Lower Torso
Skin01	Hands
Skin02	Hands
Outline	Hands

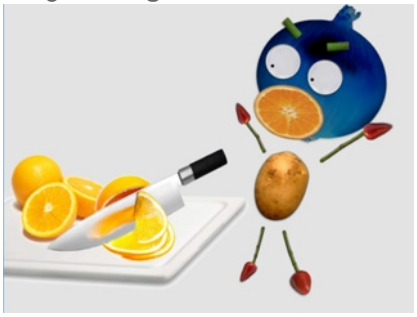
4. Select the item with the **Head** part name.

Group Name	Part Name
Image	Head
Image	Shoes
Image	Upper Torso
Image	Lower Torso
Image	Hands

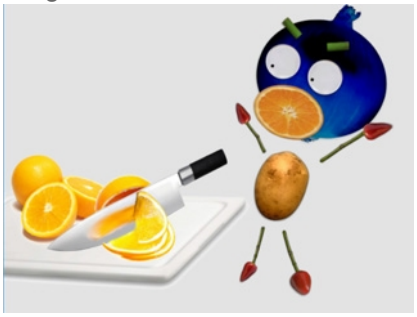
5. Activate the **Invert Color** box so that the color is inverted to a complementary one.



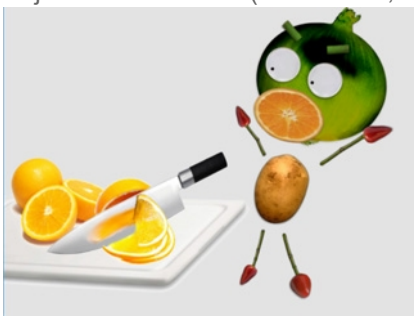
6. Drag the **Brightness** slider to increase the value (in this case, 44).



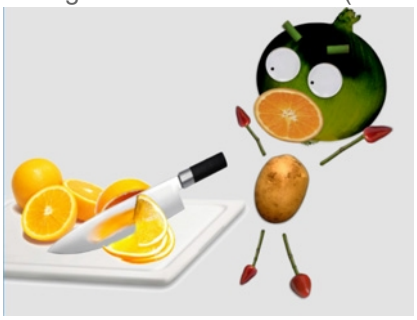
7. Drag the **Contrast** slider to max value (in this case, 100).



8. Adjust the **Hue** value (in this case, 124, to turn the onion green).



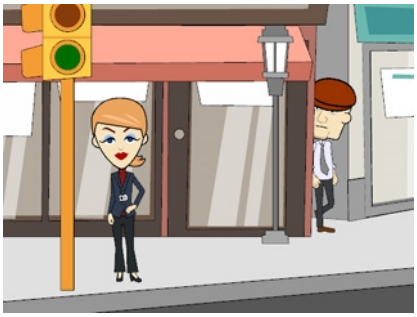
9. Change the **Saturation** value (in this case, -30).



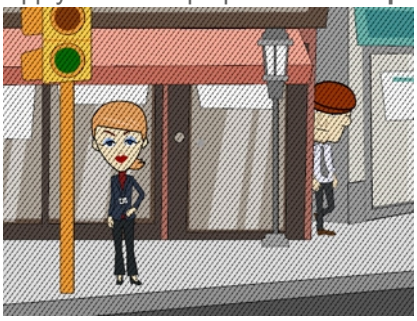
Using Mask Props

In addition to the **Render Style** feature, you are able to use **Mask** props to put screen effects to your scene, or mix-using the props of this type with the **Render Style** to specialize your story.

1. Build a scene.



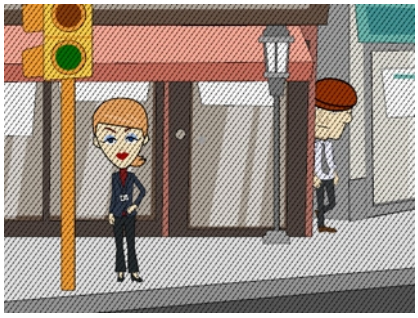
2. Apply the **Mask** prop from the **Prop** library.



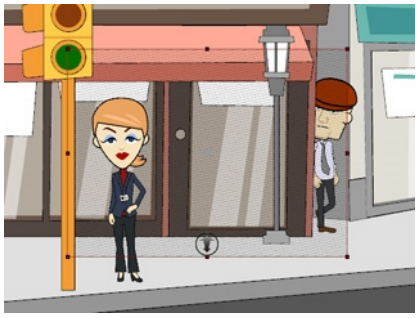
Note:

The default path of the mask props are as listed below:
Windows XP - C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator2 Template\Props\Mask\ **Windows Vista or above** - C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator2 Template\Props\Mask\

3. Adjust the **Z** value of the prop to put screen effect to the specific part of the scene.

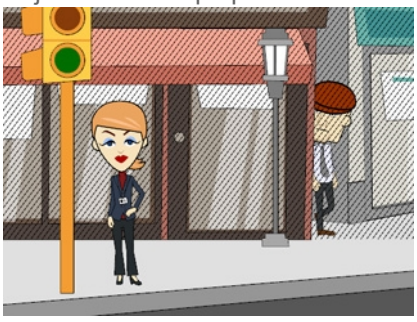


Z = 1000



Z = -110

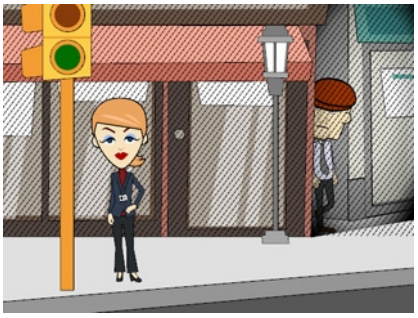
4. Adjust the mask prop to ideal transformation.



5. Layer multiple mask props and transform them if you need to add more screen effects.



Apply a vignette prop.



Transform and skew it to an appropriate position.

6. You are able to change the **Render Style** of the objects in the scene to change the tone or the atmosphere of the project.



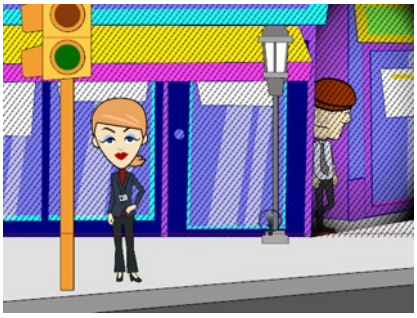
The stores are set to **Inverted** render style.



The stores are set to **Carton Art** render style.



The stores are set to **Grayscale** render style.



The stores are set to **Neon** render style.

Changing Line Width (New)

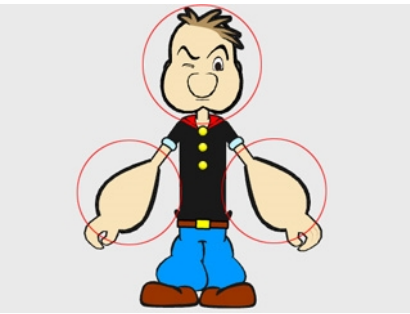
For vector-based characters or props, the line width is adjustable in order to provide different types of emphasis and style options. Furthermore, no matter how much you zoom in/ out the character or scale any body part separately, the line width remains at a consistent width with any scaling to avoid awkward and inconsistent outline values.

Fixing Lines for Altered Body Proportions

By the time a G2 character is created, you may occasionally change the proportion of the body parts after the angles are completely added. However, this can cause inconsistent outline widths around the character.

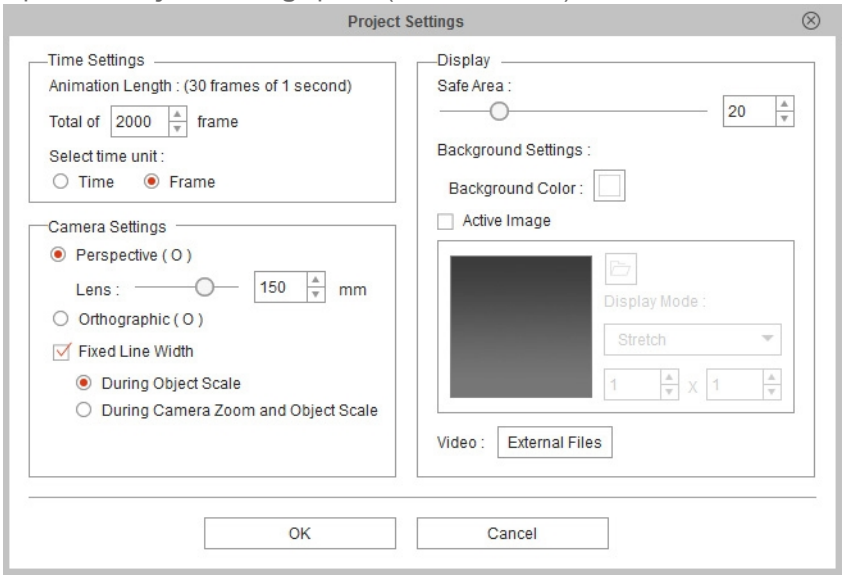


The original look of the character



After the body proportions are changed

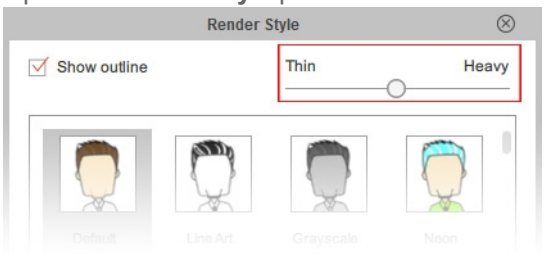
1. Leave the **Composer Mode**.
2. Open the **Project Settings** panel (Ctrl + Shift + P).

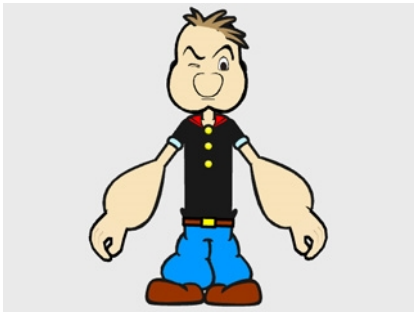


3. Activate the **Fixed Line Width** in the **Camera Settings** section.
4. Choose the **During Object Scale** radio button to determine that the line widths will be fixed and ignore the scaling changes.



5. Open the **Render Style** panel to set the ideal line width.





Note:

Adjusting the line widths can sometimes produce inconsistent results for objects that are not scaled uniformly.

Emphasizing Objects by Designated Line Width

1. Construct a story with vector-based objects.



2. Select the major objects.



3. Click the **Render Style** button on the function tool bar.



4. At the top of the panel, activate the **Line** box and increase the line width value by dragging the slider in order to emphasize them.



5. Select the minor objects and decrease their line widths (or even deactivate the lines) with the same method so that the major objects are standing out even more.



The outlines of the minor objects are decreased to different levels to increase the spatial sensation



The outlines of the minor objects are turned off

Keeping Cohesive Line Widths

In version 2.0, the line width of a character is automatically adjusted due to different z-values for each body part, which causes inaccurate representations of the character, especially when the perspective is strong or the body parts reach toward the camera, or if the 2D scaling is up and free form deformation features have been applied.

Incoherent Line Widths in 2.0 Version

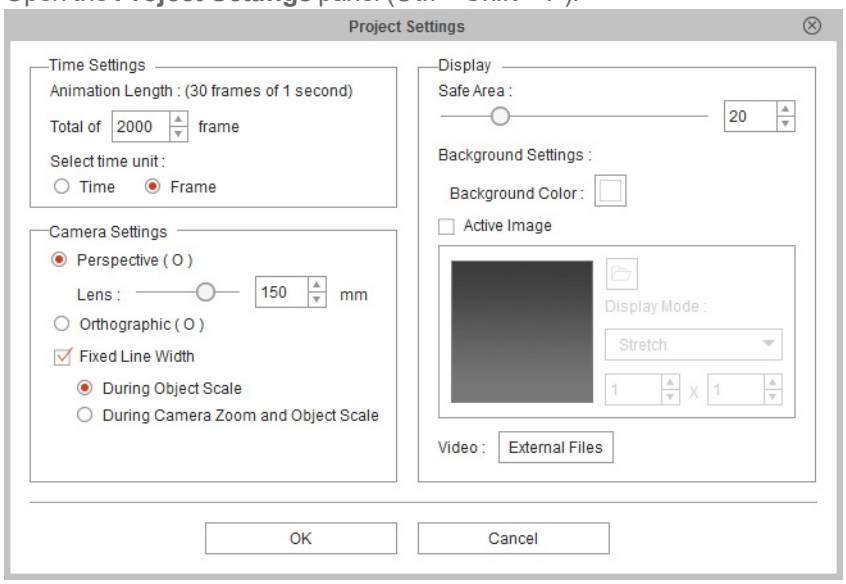


The line widths of the body parts alter along with the z-values of themselves.

Cohesive Line Widths in 2.1 Version

In order to keep a consistent line width, you need to follow the steps below:

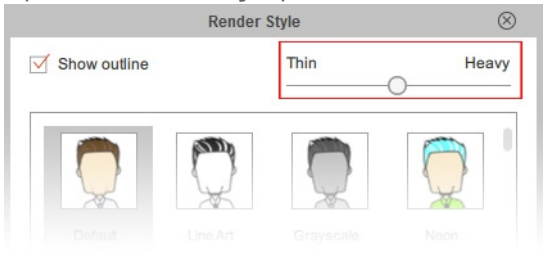
1. Open the **Project Settings** panel (Ctrl + Shift + P).



2. Activate the **Fixed Line Width** in the **Camera Settings** section.
3. Choose the **During Camera Zoom and Object Scale** radio button to determine that the line widths will be fixed and ignore the scaling or z-value change.



4. Open the **Render Style** panel to set the ideal line width.





The lines keep the same width even though the z-values change.

Passing Render Styles between Objects

The **Render Style** feature not only quickly sets styles of any object in the scene, but also can make the entire scene or specific objects cohesive with identical render style presets. You can also pass render style data from one object to another.

Making Objects Cohesive with Prepared Render Style Settings

If the objects (characters or props) in the scene already have predefined **Render Style** presets, you can quickly transfer the style to other ones in **Stage Mode** without opening the **Render Style** panel repetitively. This method is specially suitable for the **Vector-based** objects.

1. Build a project in which the objects have been given render style settings.



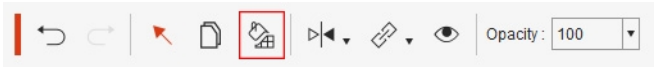
2. Pick one of the objects for changing the render style (in this case, the character).



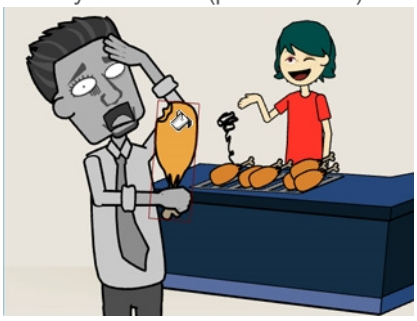
3. Open the **Render Style** panel to pick an adequate preset of the object for matching the scenario.



4. Make sure the object is still selected. Click the **Apply Selected Render Style** button on the **General Tool Bar**.



5. Move your cursor (paint bucket) on top of a target object to select that render style.



6. Click on another object to transfer that selected render style to another object/character.



Note:

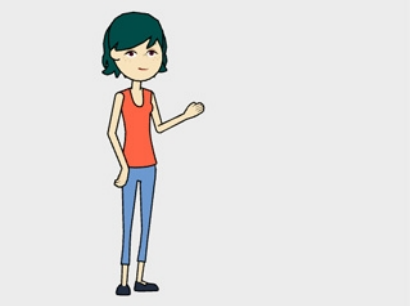
Please note that the target object must contain the same pre-defined group names as the source object has by using the **Vector Grouping Tool** panel (**Pipeline** version only). Please refer to the sections below for more information:

- Grouping Sprites for Render Style - Character
- Grouping Sprites for Render Style - Prop

Quickly Defining Render Styles Presets

If the objects have 10 render style presets but are not well-defined in advance, then you may use the **Apply Selected Render Style** feature to quickly define the presets without entering the Composer Mode. This method is suitable for both vector-based or image- based objects.

1. Apply objects with pre-defined render style presets as the source.



Vector-based source object

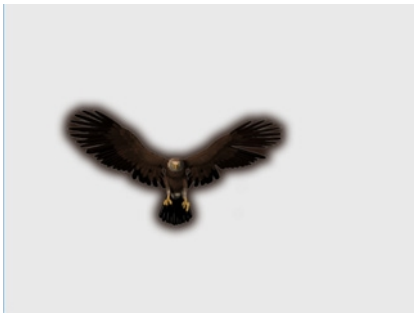


Image-based source object

2. Apply other objects without pre-defined render style presets as the target.



Vector-based target object



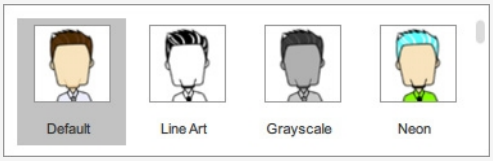
Image-based target object

Note:

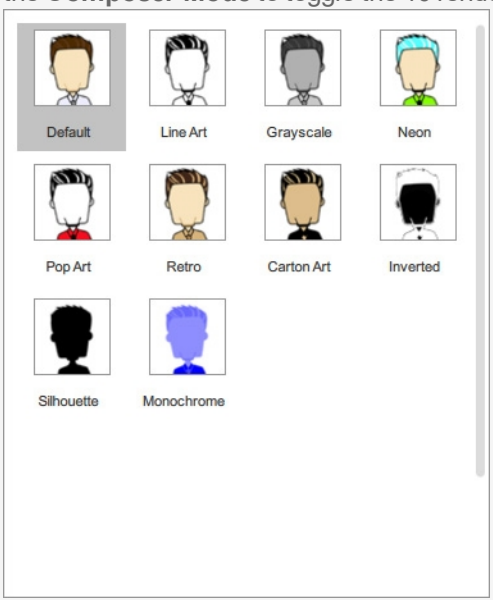
Please make sure you have performed the procedures for these objects before the next steps.

- **Vector-based Objects**: The color shapes and the outlines must be determined by the **Vector Grouping Tool**.
  - Grouping Sprites for Render Style - Character
  - Grouping Sprites for Render Style - Prop
- **Image-based Objects**: The object must be assigned with 10 render style presets first via the **Toggle between G1/G2 Render Styles** feature.

- Normally, image-based objects can only be given the three embedded presets in the panel, **Default**, **Contrast** and **Saturation**.



- You may optionally execute the **Modify** >> **Toggle Between G1/G2 Render Styles** command in the **Composer Mode** to toggle the 10 render style presets for the objects.



3. Select the source objects and open the **Render Style** panel.





The source objects are picked.

4. Pick one of the presets to change the color style of the source objects.



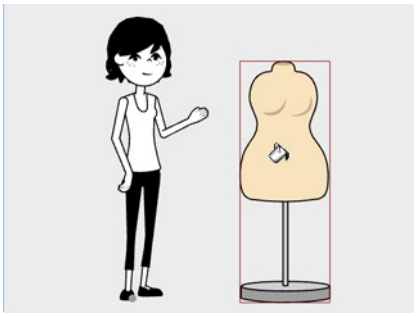


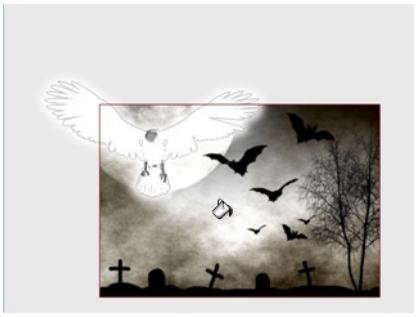
The **Line Art** preset is utilized.

5. Make sure the object is still selected. Click the **Apply Selected Render Style** button on the **General Tool Bar**.

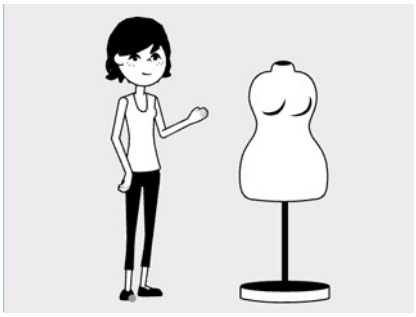


6. Move your cursor (paint bucket) on top of the target objects for applying the same render style.





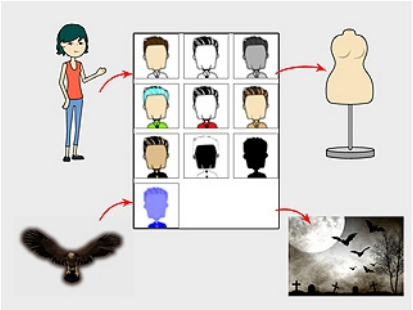
7. Click on the target object to apply the render style.





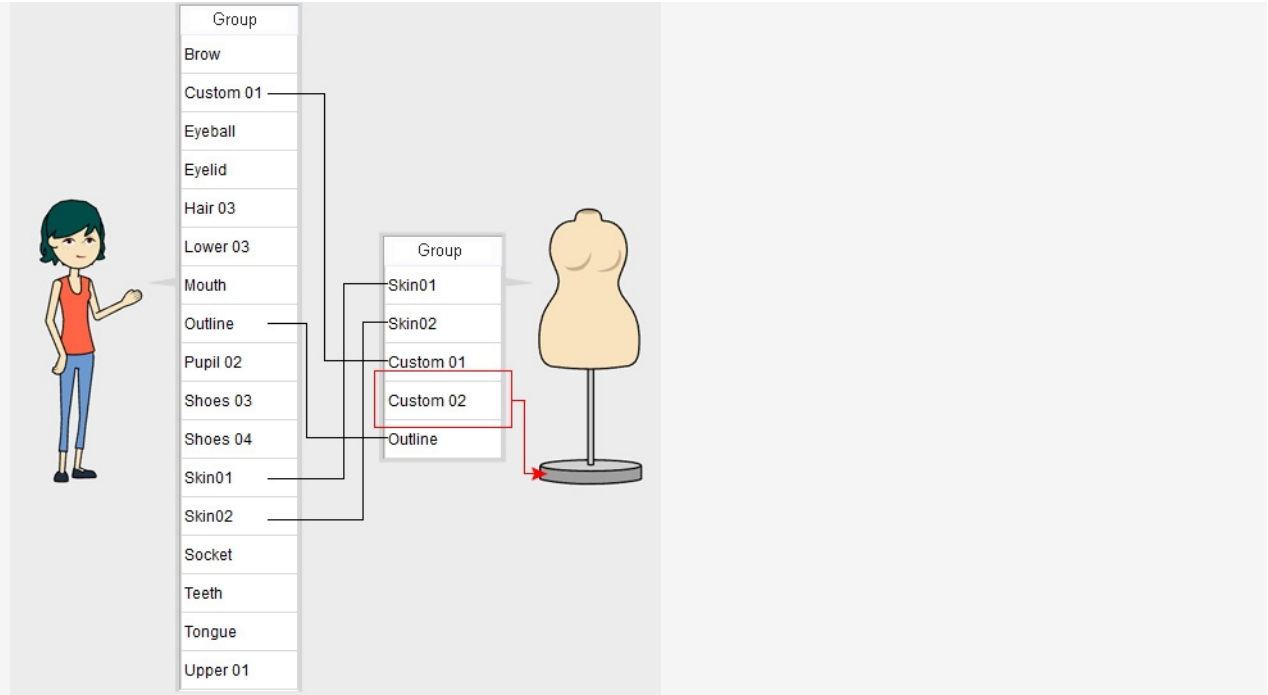
The **Line Art** preset is passed to the target objects.

8. Repeat steps 4, 5 and 6 until the ten render style presets of the target objects are pastes from the source ones.



Note:

Please note that, for the **Vector-based** objects, if the group names between the source and target objects do not completely match, then only the identical groups will be influenced after the **Apply Selected Render Style** is performed. In the following case, the color grouped into the **Custom 02** will not take any effect after the target object has been given a render style preset from the source object.


Group
Brow
Custom 01
Eyeball
Eyelid
Hair 03
Lower 03
Mouth
Outline
Pupil 02
Shoes 03
Shoes 04
Skin01
Skin02
Socket
Teeth
Tongue
Upper 01
Group
Skin01
Skin02
Custom 01
Custom 02
Outline

Using Text

If you wish to display comic text when the character is talking, then simply use the text embedded inside **CrazyTalk Animator**.

Text Types

There are three types of texts in the library. You may use them in different scenarios.



Comic

Suitable for adding text balloons.



Realistic

Suitable for adding sign boards.



Subtitle

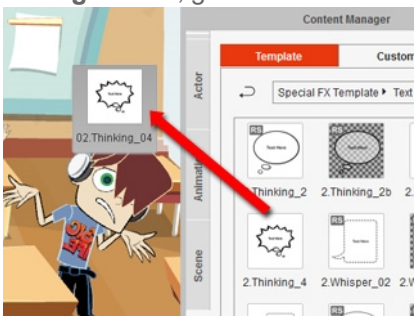
Suitable for adding onscreen subtitles.

Using Text

1. Load or create a project.



2. In **Stage Mode**, go to the **Text** content folder in the **SFX** tab of the **Content Manager** and apply a template.



3. Double-click on the text (or click the **Text Editor** button) and modify the text.



4. The modified text will now appear in the stage.



Note:

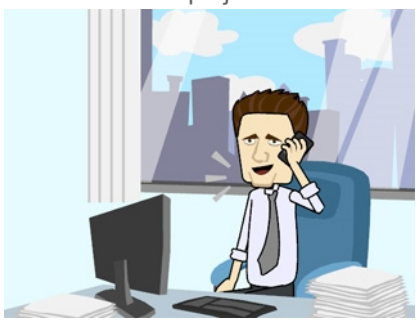
- The text will appear at all times, unless you are using the Visible Settings or the Opacity features to set the text timing display.
- Use the Link and Unlink features to link the text to a character's head in order to have the text follow the character.

Using Text Bubbles with Serial Text Dialogs

Each text bubble can be given multiple text elements, and you are able to show each one at different times by setting the **Replace** switches.

Preparing Texts

1. Load or create a project.



2. In the **Stage Mode**, apply a text bubble template.

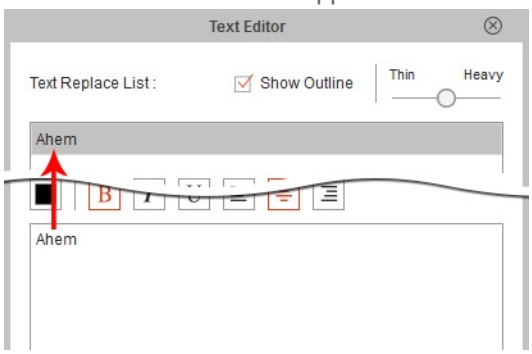


3. Double-click on the text bubble (or click the **Text Editor** button) to show the **Text Editor**.



4. Modify the text (words and font styles) and click the Apply **Apply and Add Key** button.

5. The modified text will now appear in the **Text Place List** and in the text bubble on the stage.





6. Go to another time frame when the character is ready to speak another sentence.



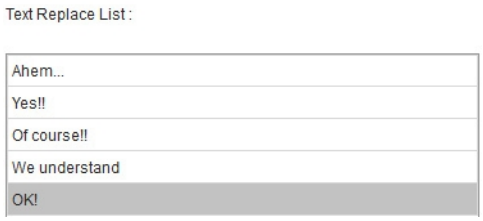
7. Click the Add **Add Text** button to add a new line of text.
8. Modify the text and then click the **Apply and Add Key** button again to apply the text to the text bubble.



Note:

- You may remove a line of words in the list by selecting it and clicking the Delete **Delete Text** button.

9. Repeat step 5 to 7 to add as many lines as you want. The list will contain all the lines you have entered.



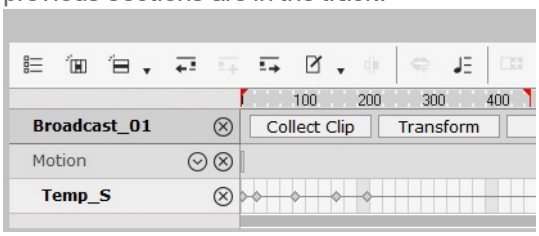
10. Play back to view the text sequentially showing the result.



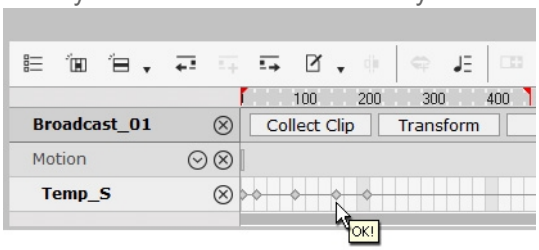
Editing and Reusing Text Instances with Timeline

If the text elements you have set up show at improper times or the character says identical phrases more times than once, then you may adjust the **Replace** keys of the text bubble within the **Timeline**.

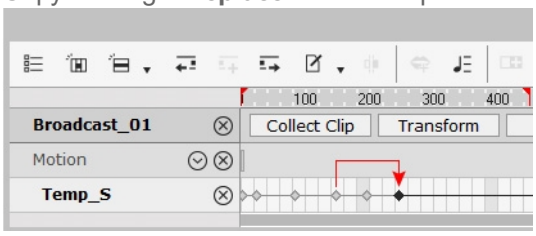
1. Select the text and show the **Replace** track of the text bubble. You will see the switches you have applied in the previous sections are in the track.



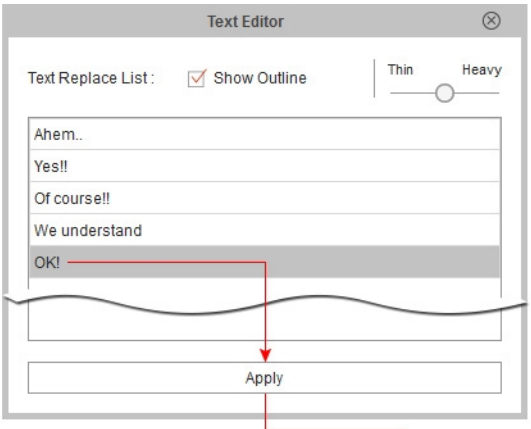
2. Move your cursor over the switch keyframes to see the text that they represent.

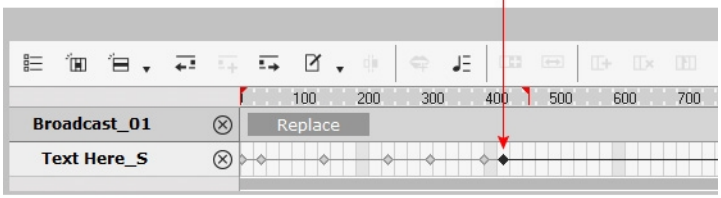


3. Drag the switches to the appropriate time to match the timing of the character's voice.
4. If you want to reuse the same text from the text list, you may either:
   - Copy the target **Replace** switch and paste it to another desired time frame.



   - Go to a desired time frame, pick the text in the list and then click the **Apply and Add Key** button to add another switch to the frame.





5. These two methods add text instances to different time frames. You may then play back to see the result.

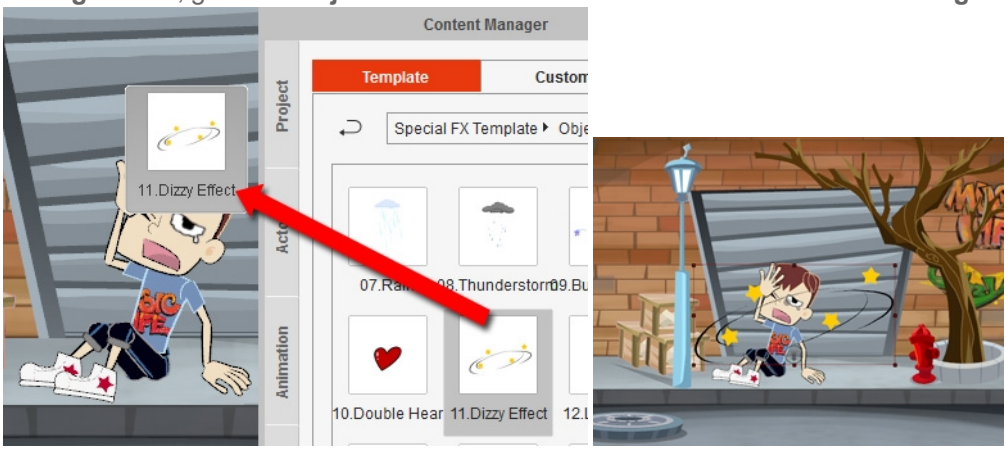
Using Special Effects

If you wish to apply special effects to your scene, then you may use the special effects embedded in **CrazyTalk Animator**.

1. Prepare a project which you wish to add special effects to.



2. In **Stage Mode**, go to the **Object** content folder in the **SFX** tab of the **Content Manager** and apply a template.



3. Move, scale or rotate the effect to where you need it.



Note:

- The special effects provided in the library are all looping animations in .flv format.
- Object special effects will always appear unless you use the Visible Setting or the Opacity features to set a timing for them to display.
- Use the Link and Unlink feature to link the special effect to a character's head in order to have the effect follow the character.

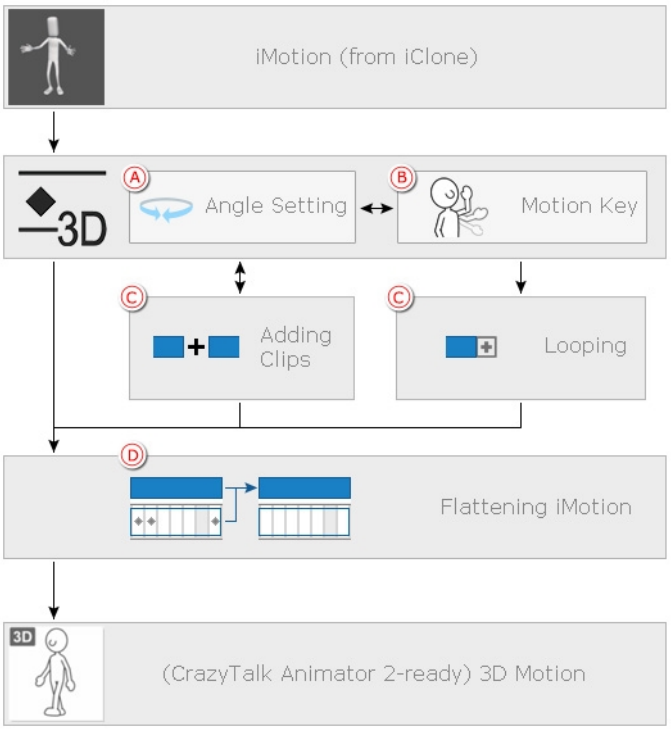
Diagrams for 3D and 2D Motions

In **CrazyTalk Animator**, a character's motions are divided into 3D and 2D motions. However, since this product is a 2D animation application, there is a certain workflow (different phases as described below) for converting 3D motions to 2D ones for better 2D editing.

*Please note that it is one-way direction between these phases, you can edit the motion back and forth within a certain phase but do not return to the previous phase for further editing.

Phase 1: Converting iMotions to 3D Motions Pro & Pipeline

For **Pipeline** users, you are able to import **iClone iMotions** into **CrazyTalk Animator Character**. However, some initial refinements must be made to adjust visual flaws.



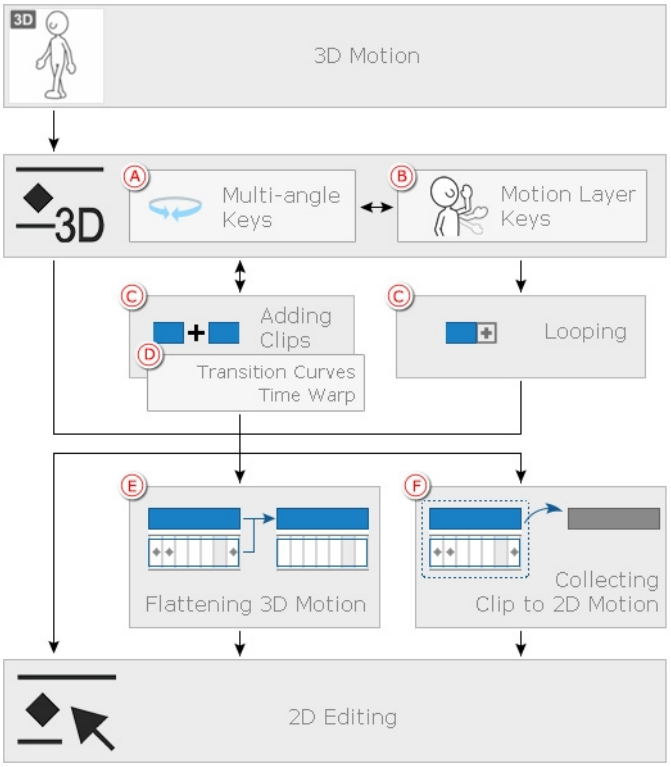
A. Determine the initial angle for the entire iMotion.
B. Using the **3D Motion Key Editor** to eliminate visual flaws.
C. Optionally loop or add more iMotions.
D. Flatten the iMotion or iMotions to merge the edit results in order to generate a re-usable 3D motion.

Note:

Please refer to the Using iMotions section for more information.

Phase 2: Modifications for 3D Motions Pro & Pipeline

For **Pipeline** and **Pro** users, you can apply 3D Motions to **CrazyTalk Animator Character**. You are able to switch multiple angles in different time for the motion, modify the motions by adding motion layer keys, using the layer order keys for body parts, set time warp for clips, change the transition curve between keys or clips and collect the entire motion data (clip and keys) as a 2D motion for further 2D editing.



A. Setting angle keys to turn the character to different angles during the 3D motion.
B. Use the **3D Motion Key Editor** to add motion layer keys to the original motion.
C. Optionally loop or add more 3D motions.
D. You can optionally adjust the transition curve type between two motions or change the time warp curve for individual motions.
E. Flatten the 3D motion if you want to merge the modifications into the 3D motion.
F. Merge the entire data (3D motion and keys) into a 2D motion for 2D editing.

Note:

Please refer to the Using 3D Motions section for more information.

Phase 3: Polishing Motions with 2D Editing Skills

For **Pipeline**, **Pro** and **Standard** users, you can polish modified 3D motions or 2D motions by certain skills. The skills help you to increase the interests and drama of the animations.



A. Use the **Sprite Editor** to create sprite switching animations.
B. Use the **2D Motion Key Editor** to add motion layer keys to the original motion.
C. To exaggerate the spatial and dimensional sensation of the character, set the **Perspective Strength**.
D. Use the **Puppeteering** feature to create more custom 2D motions.
E. The **Transition Curve** between two keys or clip or the **Time Warp Curve** for a specific motion can be adjusted.
F. To distort the body parts for increasing interests, use the **Free Form Deformation** feature.
G. Use the **Motion Align** feature to define a specific body part for aligning two motions.
H. You may define the character or prop to move in certain path and direction.

Note:

Please refer to the Using 2D Motions section for more information.

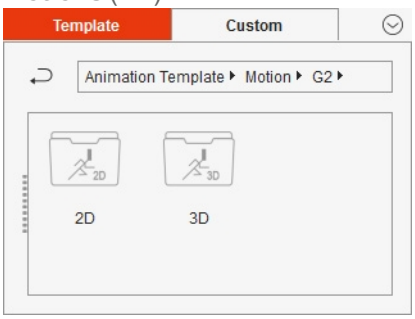
Principles of Animation

By mix-using the 2D-editing features provided by **CrazyTalk Animator**, you are able to create more interesting and attractive animations obeying the basic principles.

Animation Principles	Descriptions	Corresponding Feature(s)
Timing	The length of time for an animation to complete.	Ⓑ or Ⓓ
Spacing	The distance between two key poses.	Ⓑ + Ⓗ
Squash and Stretch	The compression and extension of an object during the animation.	Ⓑ + Ⓕ
Anticipation	The animation of an opposite direction prior to the main animation, which prepare the viewer that the latter animation is the main action.	Ⓓ or Ⓑ + Ⓕ + Ⓗ
Staging	The explicit animation that makes no ambiguity, simply see and know what the animation is, also known as body language.	Applying Motions from Library or Ⓓ Ⓑ
Pose to Pose	Setting the key poses, add breakdowns and then add in-betweens.	
Drag, Follow Through and Overlapping Action	The flexibility of an object's animations, comparing to the main action.	Ⓑ or Ⓑ + Ⓔ
Slow In and Slow Out	The length of time for an animation to complete.	Ⓑ + Ⓔ or Ⓗ + Ⓔ
Arcs	The path of the action; usually in smooth flow without abrupt changes of directions.	Ⓓ or Ⓑ + Ⓗ
Secondary Action	Some animations that is secondary to the main action. The animations can be related or irrelevant to the main actions.	Ⓑ or Ⓓ
Exaggeration	Push the action even further than you think it shall be.	Ⓑ or Ⓓ
Secondary Action	Some animations that is secondary to the main action. The animations can be related or irrelevant to the main actions.	You may use the combinations of the listed features: Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓗ
Solid Drawing	Solid drawing means a good drawing and a good drawing is mostly determined by the poses of the character. Therefore, a solid drawing is to give good poses for a character to convince the viewer.	Ⓑ + Ⓓ
Appeal	A pleasing quality that makes the animation enjoyable to look at.	Render Style.
Weight	Make the animation feel heavy with proper weight.	Ⓑ + Ⓕ or Ⓓ + Ⓕ.

Using Character Motions

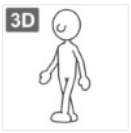
In **CrazyTalk Animator**, the character motions are divided into two main categories: **3D Motions** (dimensional) and **2D Motions** (flat).



3D Motions and 2D Motions

3D Motions

- The thumbnails of 3D motions in **CrazyTalk Animator Motion Library** will be marked with text, "3D".



- The 3D motions are dimensional motions. These motions are free in angles.



Character with 3D motion applied



Correct performing results in else angles

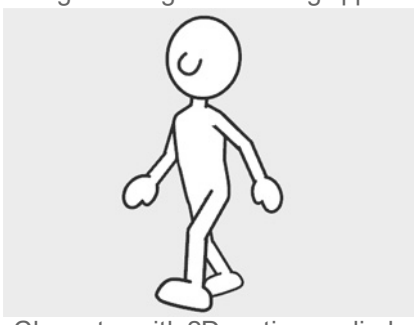
- The 3D motions are from the **CrazyTalk Animator Motion Library** or from **iClone Character Motion Library**

3D Motions (**.ct3DMotion**) in **CrazyTalk Animator**	The motions of this type are, by default, in the path below: • **XP**- C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator2 Template\Motion\Editable 3D\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator2 Template\Motion\Editable 3D\
3D Motions (**.iMotion**) from **iClone**	The motions of this type are, by default, in the path below: • **XP**- C:\Documents and Settings\All Users\Documents\Reallusion\Template\iClone 5 Template\iClone Template\Motion\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template\iClone 5 Template\iClone Template\Motion\

*If you need to purchase additional 3D motions, then please surf the official web site: Reallusion Motion Store

2D Motions

- The 2D motions are flattened 3D motions. These motions are in specific and single direction and can not change the angle after being applied to a character.



Character with 2D motion applied



Changing angle is not allowed

- The 2D motions can be from the **CrazyTalk Animator Motion Library** (**.ctMotion**, default motions in **CrazyTalk Animator 2 or 1**) or created by **Flattening 3D Motions** (**.ctMotion**).

2D Motions (**.ctMotion**) in **CrazyTalk Animator 2**	The motions of this type are, by default, in the path below: • **XP**- C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator2 Template\Motion\Flatten 2D\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator2 Template\Motion\Flatten 2D\
2D Motions (**.ctMotion**) in **CrazyTalk Animator 1**	The motions of this type are, by default, in the path below: • **XP**- C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator Template\Motion\ • **Windows Vista or Above** - C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator Template\Motion\
	*If you need to purchase additional **CrazyTalk Animator** 2D motions, then please surf the official web site: Reallusion Motion Store

- The thumbnail of 2D motions, for **.ctMotion**, in **CrazyTalk Animator Motion Library** will be marked with text, "S" or "F".



The motion to the side



The motion to the front

- You can easily identify **flattened 2D motions** by the number of degrees on the thumbnail.

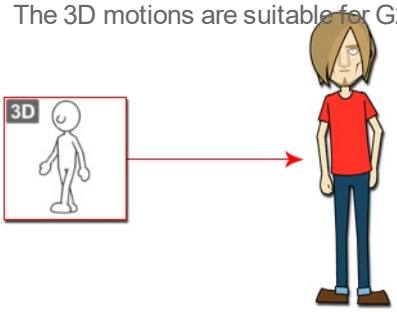


The number represents the degree of the motion.

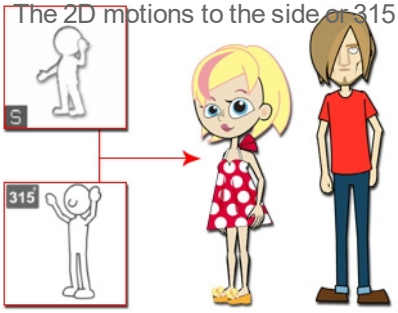
Suitable Target Characters

2D and 3D motions are basically able to apply to any character. However, since the character can be G1 or G2, the motion results can be different. The best suitable collaborations are as shown below:

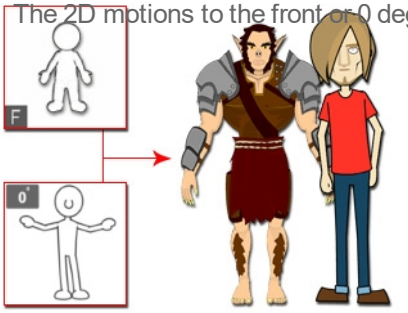
The 3D motions are suitable for G2 characters.



The 2D motions to the side or 315 degrees are suitable for G1 side and G2 characters.



The 2D motions to the front or 0 degrees are suitable for G1 front and G2 characters.



Importing 3D Motions for CrazyTalk Animator

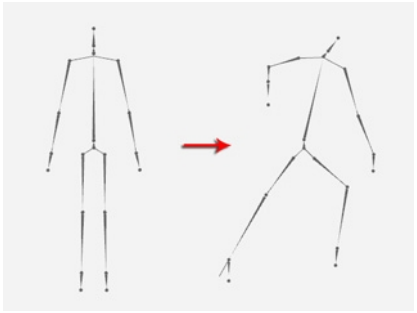
If you are a **CrazyTalk Animator Pipeline** user, you are allowed to import 3D motions (***.iMotion**) from **iClone** as raw 3D motions to create re-usable and re-editable motion template, in order to expand the motion library for your characters.

These raw motions, after being imported to a **CrazyTalk Animator G2** character, automatically generate the bone movements, layer orders of the body parts, and sprite-replacement animations.

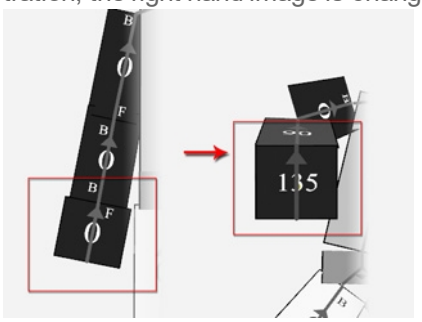
The Theory

After the raw 3D motions are imported, the auto-mechanism performs the following procedures:

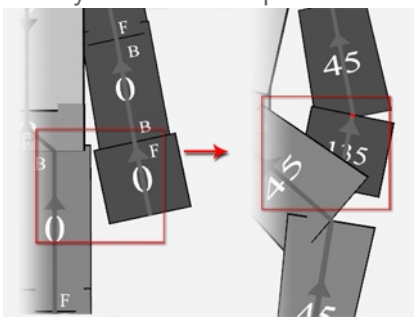
- Generating the character's motions by the rotations and offset of the bones.



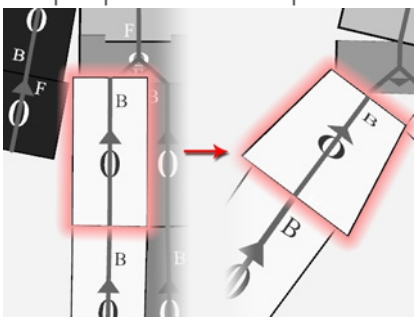
- Setting behind the scene the sprite replacements to ensure the angles are correctly displayed (as in the illustration, the right hand image is changed from angle 0 to 135).



- The layer order of the sprites on each body parts is arranged to imply the front-back relations.



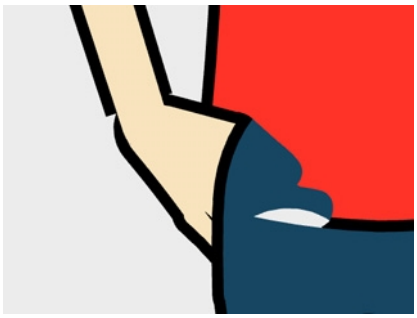
- The perspectives of the sprites will be changed to indicate the spatial sensations.



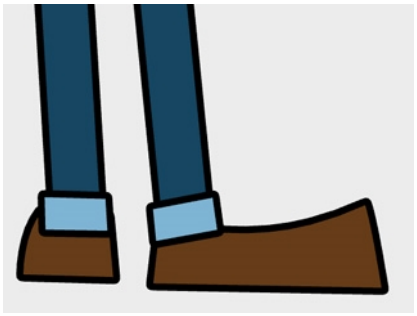
Potential Issues May Encountered

Because of the automatic technique, there may be some artifacts in need of further adjustments for displaying correctly afterward. The possible issues are:

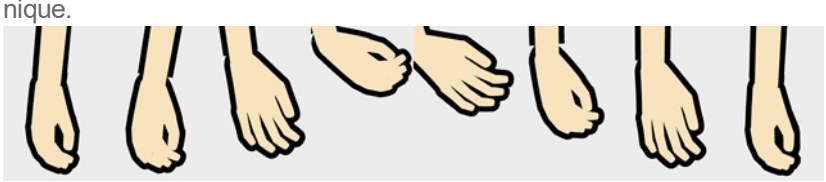
- **The body part intersections**: This is caused by the bone that penetrates through the sprite that has almost the identical z value.



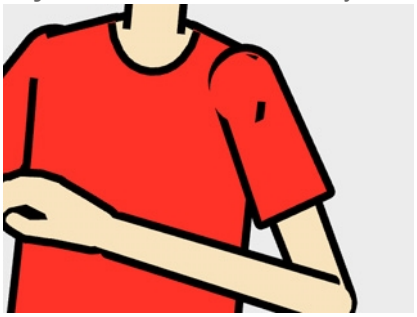
- **Inadequate direction of the body parts**: This is caused by the differences for calculating the bone directions from the iMotion.



- **Rapidly component-changing of the sprites**: This is caused by the sensitivity of the sprite replacement technique.



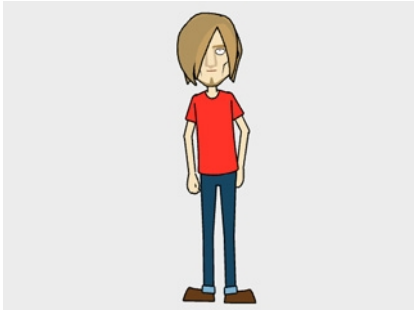
- **Layer flaws**: This is caused by the identical z values of two connected body parts.



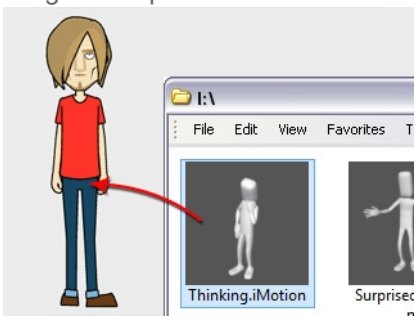
You may follow the steps below to fine-tune these imported iMotions; afterward, you can store and re-use them as refined 3D motions.

Step 1: Loading an iMotion

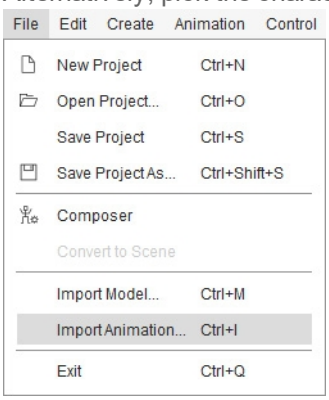
1. Apply a **G2 character** to ensure the iMotions can be performed correctly.



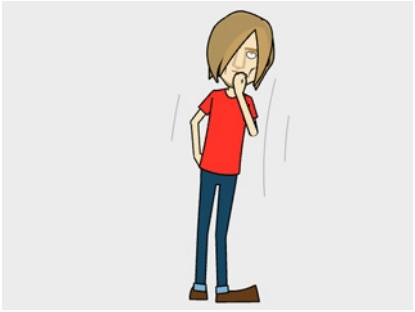
2. Drag and drop an iMotion onto the character from your system explorer.



3. Alternatively, pick the character and execute the **File** >> **Import Animation** (**Ctrl + I**) command.



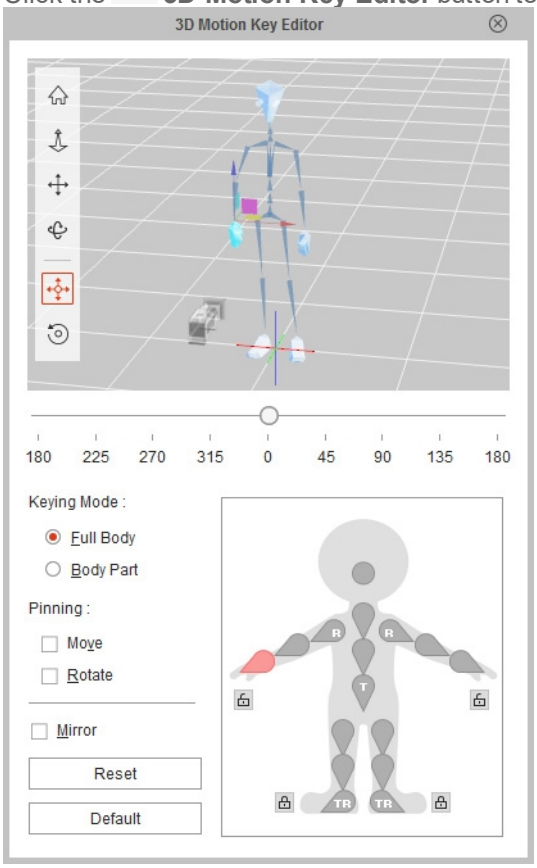
4. The character will start to perform the applied 3D motion.



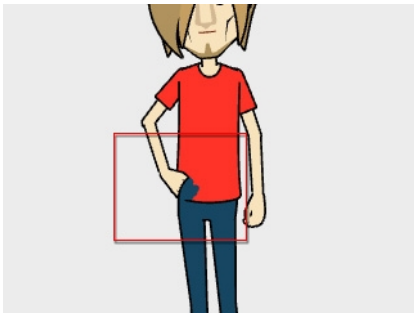
Because the **iMotions** from **iClone** are not completely suitable for the **CrazyTalk Animator** characters, you may need to set about fixing the imperfections as described above after the iMotions are applied to a G2 character.

Step 2: Fixing Intersection Issues Pro & Pipeline

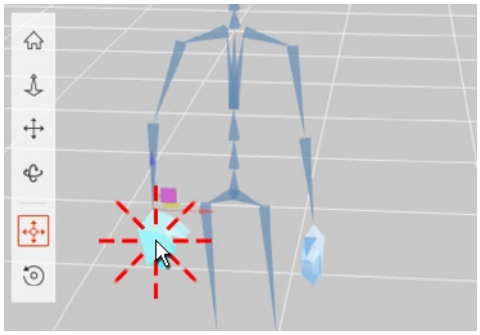
1. Make sure the character is selected.
2. Click the **3D Motion Key Editor** button to open the panel.



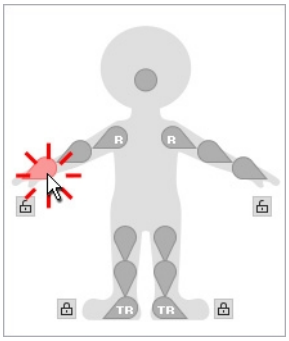
3. Optionally turn the direction of the character to define the angle of the **iMotion**.
4. Scrub to the time frame when there are visual flaws of the character.



5. Use the dummies in the panel to select the intersected body parts.

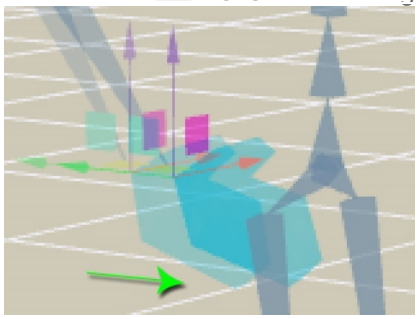


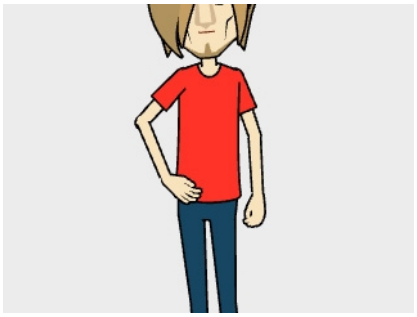
Double click on the body part in the 3D view.



Click on the body part of the dummy.

6. Switch to the **Move** tool and drag the green axis of the gizmo to eliminate the intersection issues.



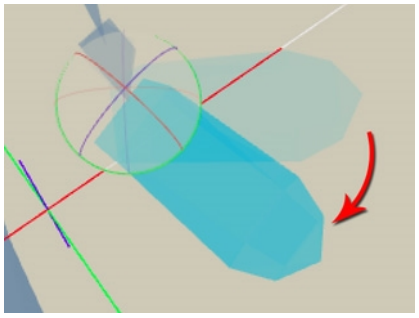


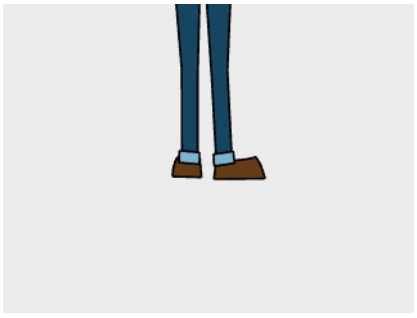
Note:

The arrow colors of the gizmo represents the three axes: **R** = **X**; **G** = **Y**; **B** = **Z**.

Step 3: Rectifying Directions of Body Parts Pro & Pipeline

1. For the inappropriate directions of the body part, select it with the dummy.
2. Switch to the **Rotate** tool and rotate the body part by using the rotating gizmo.





Note:

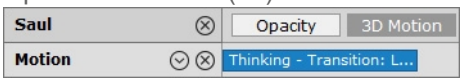
Please refer to the sections below for more information:

- Using 3D Motion Key Editor
- Fine Tuning the Actor with IK, FK

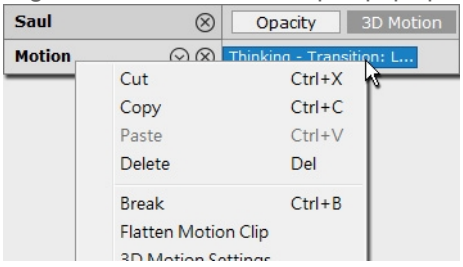
Step 4: Fixing Layer Flaws and Rapid Changing of Sprites

The layer order and the pose-changing of the sprites are automatically generated from the iMotion. However, you may sometimes encounter the layer flaws and over-rapid changing issues. Unless you can not fix the layer issues by adjusting the bones as described in the previous section, modify the issues by the steps below:

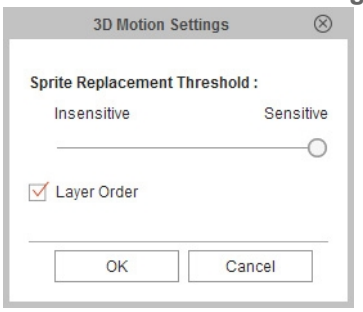
1. Open the **Timeline** (**F3**) and the **Motion Track** of the character.



2. Right click on the motion clip to pop up the right-click menu.



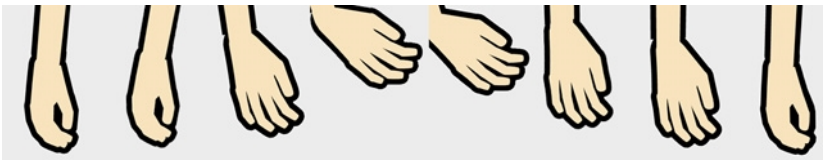
3. Choose the **3D Motion Settings** to open the panel.



4. To alleviate the rapid changes, decrease the **Sensitivity**.

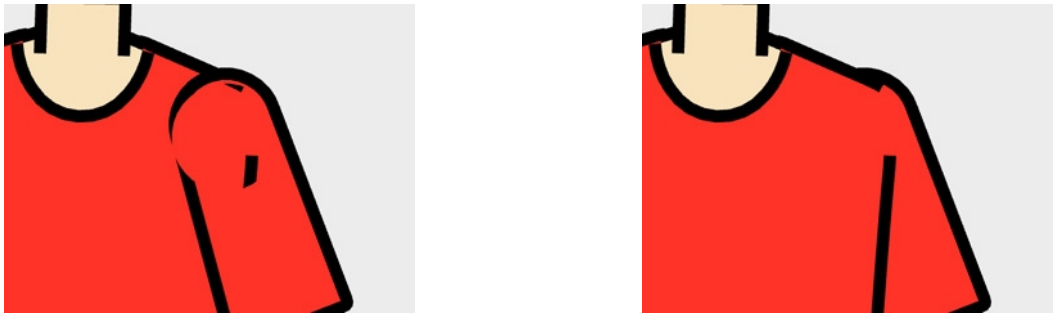


The constantly changes of the poses of the sprite



Decrease the sensitivity to ease the changing frequency

5. Deactivate the **Layer Order** so that the layer order auto-calculated from the iMotion is removed; then the flaws of the layer order (z-fighting) can be fixed.



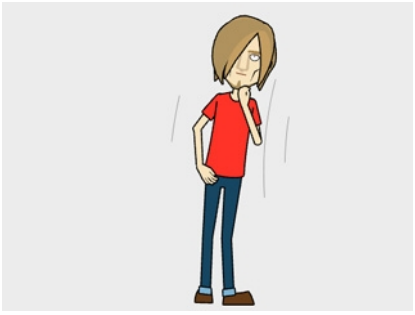
Remove the layer order flaws by deactivating the **Layer Order** feature.

Note:

This box can be deactivated when the motions applied are mild such as idle motions. For the motions with intensive and strong movements, you need to keep this feature activated because it saves a lot of time for manually setting layer order keys.

6. Using the **3D Motion Key Editor** for layering motion keys to the motion.

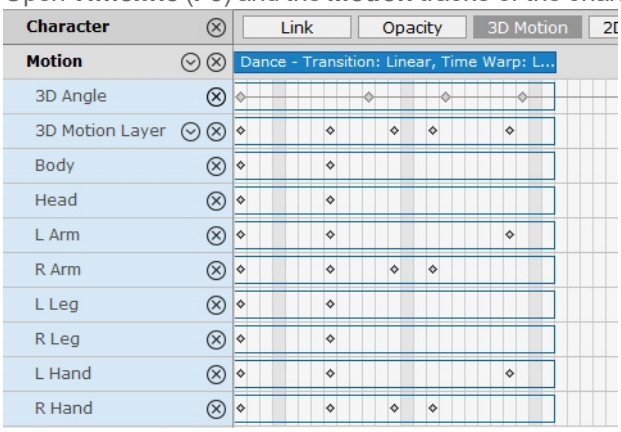
Repeat the same steps until the character's motion appears correct.



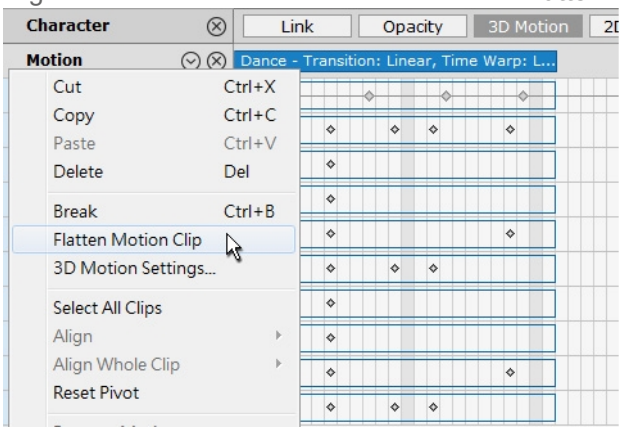
Post Processing

After the iMotion is modified and layered with motion keys, you can confirm the adjustments or do the further 2D modifications.

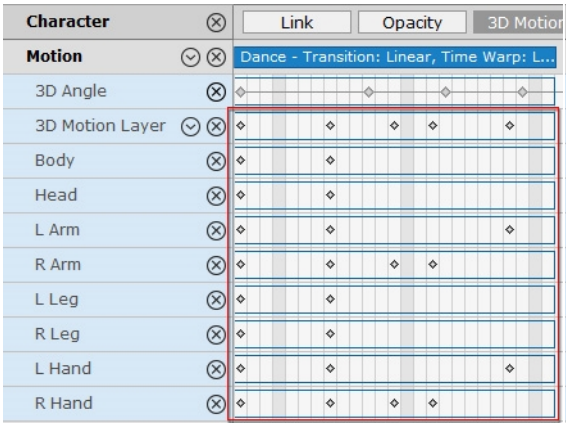
- If you are satisfied with the modification and you do not want to accidentally change the settings, then you may flatten the motion clip to merge all the keys into the motion clip.
  1. Open **Timeline** (**F3**) and the **Motion** tracks of the character.



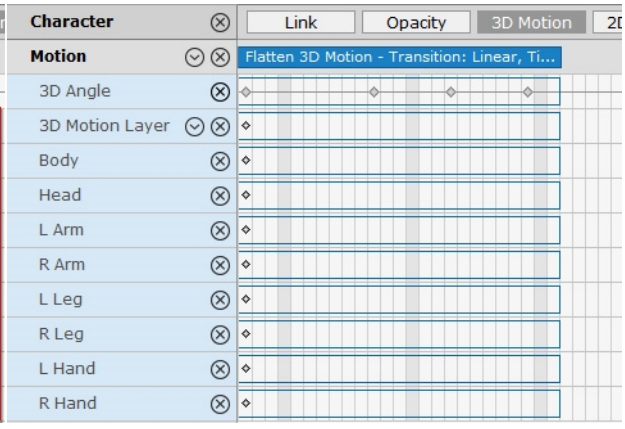
  2. Right click on the motion modified and select **Flatten Motion Clip** from the pop-up menu.



  3. The modification keys will be included into the motion clip (**the angle keys are excepted**). You may then save it into the library for further use because it is a manually refined 3D motion clip.

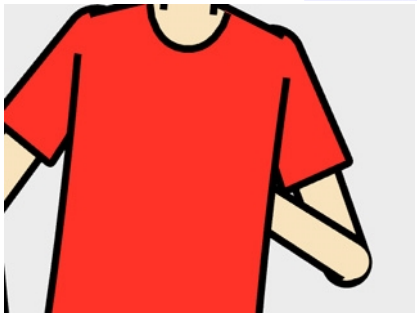


The modification keys in the timeline before flattened



The keys are merged into the motion clip after being flattened
(except the angle keys)

- If you ever deactivate the **Layer Order** as described in the previous section, the auto-layer feature is turned off, you may need to manually set layer order keys for some specific gestures of the character.



The layer of the entire left hand is move down behind the body.



Set key to move the for arm back up the body.

You may then start 2D adjustments such as **Sprite Animation**, **Transformation** or **Deformation**. Please refer to the Using 2D Motions section for more information.

Using 3D Motions

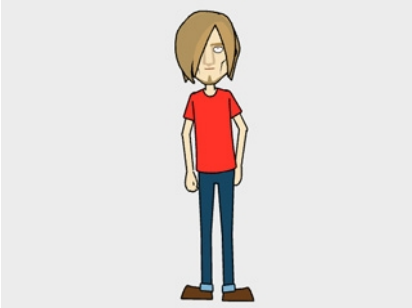
If you are a **CrazyTalk Animator Pipeline** or **Pro** user, you are free to apply embedded 3D motions (***.ct3DMotion**) to G2 characters.

By further editing, a **CrazyTalk Animator G2** character can perform more exquisite 3D motions.

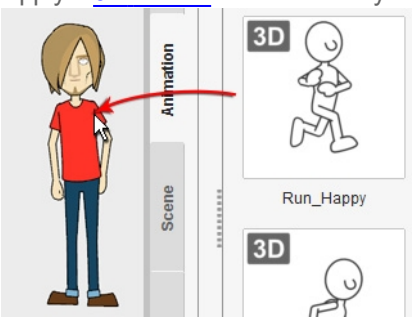
After the editing, you are able to merge the entire motion clips and modification keys into a brand new 2D motion with certain angles.

Loading an 3D Motion

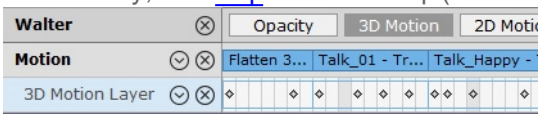
1. Apply a **G2 character**.



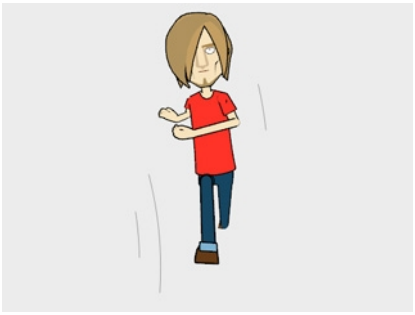
2. Apply a 3D motion from the library.



3. If necessary, then loop the motion clip (in this case, looping three times).



4. The character will start to perform the applied 3D motion.

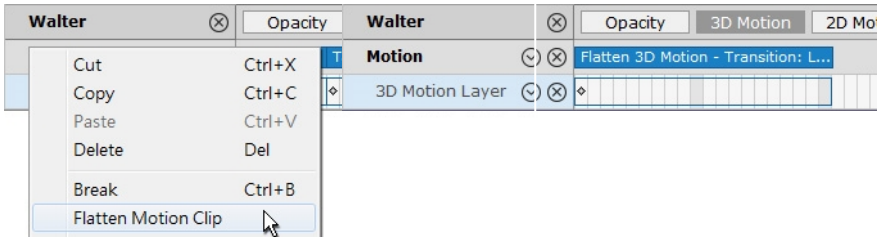


5. Open the Timeline (F3) and the Motion track of the character.



There may be already some motion layer keys within the **Motion Layer** track in order to refine the clip.

6. If you want to keep the results of the keys, please right click on the clip and execute the **Flatten Motion Clip** to merge the keys into the motion clip.

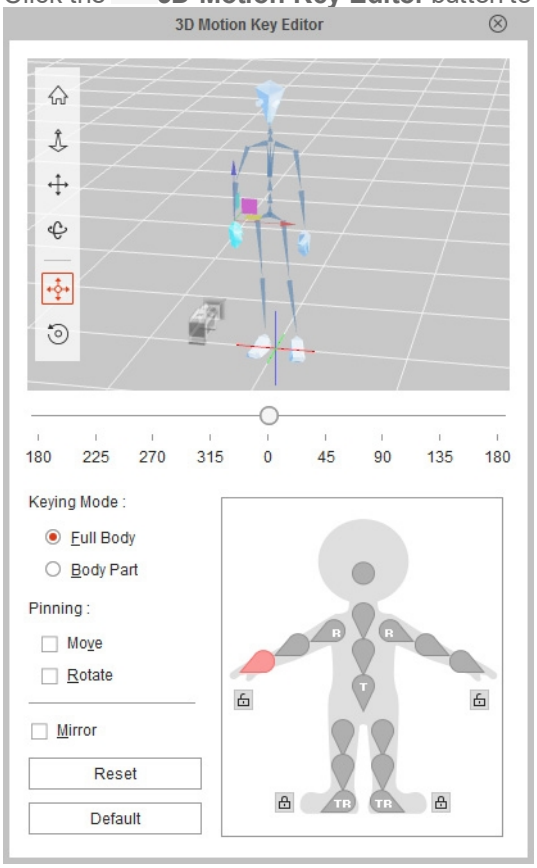


Execute the **Flatten Motion Clip** command.

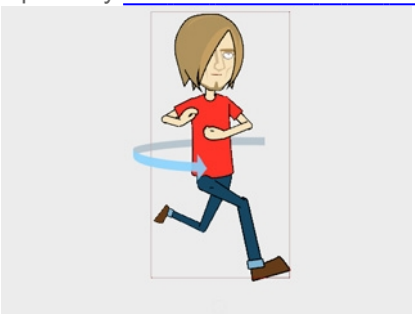
The motion layer keys are merged into the clip (a new one will be added in the start time frame to ensure the first body gesture).

Modifying 3D Motions with 3D Motion Key Editor Pro & Pipeline

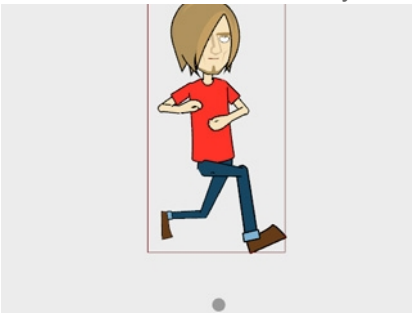
1. Make sure the character is selected.
2. Click the **3D Motion Key Editor** button to open the panel.



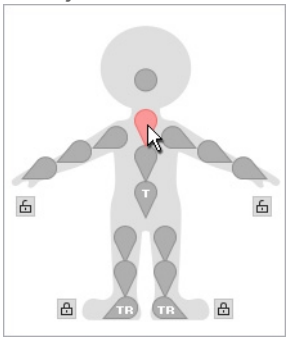
3. Optionally turn the direction of the character to define the angle of the 3D motion.



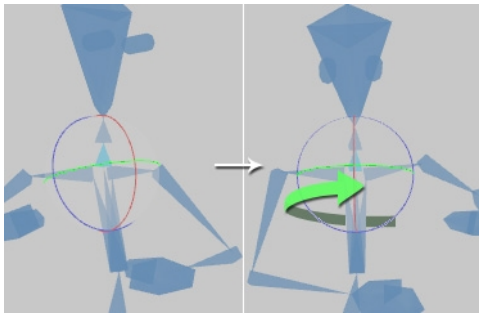
4. Scrub to the time frame when you want to add motion layer key (in this case, the end frame of the motion).

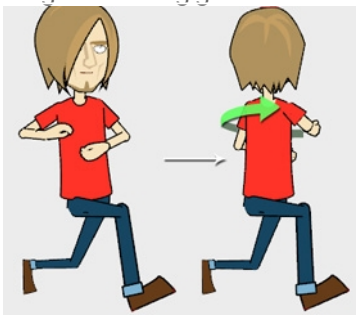


5. To adjust the directions of a body part, select the body part with the dummy in the panel.



6. Switch to the **Rotate** tool and rotate the body part by using the rotating gizmo.





Rotate the neck to triggers the upper body to rotate along (FK method).

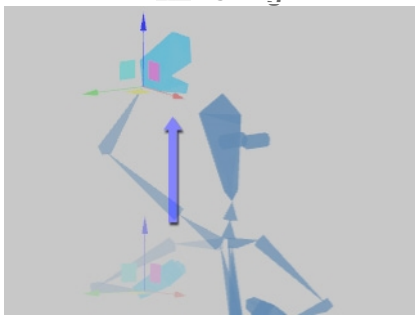
Note:

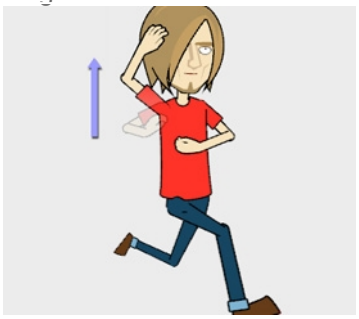
The colors of the gizmo represents the three axes: **R** = **X**; **G** = **Y**; **B** = **Z**.

7. Go to the time frame when you want to set another motion layer key (in this case, the start frame of the motion).



8. Switch to the **Moving** tool and drag the three axes of the gizmo to offset the bone.





Drag to move the hand up (IK method).

Note:

Please refer to the sections below for more information:

- Using 3D Motion Key Editor
- Fine Tuning the Actor with IK, FK

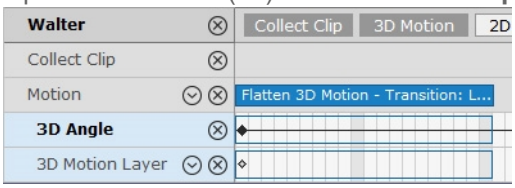
9. Play back to view the tweening results caused by the two motion layer keys.



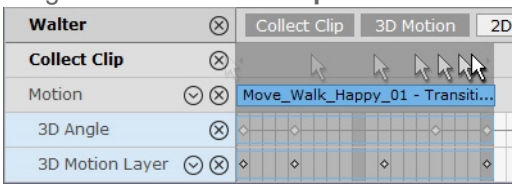
Creating 2D Motions with Specific Angle Pro & Pipeline

After the refinements are done, you can convert the motion clips and the keys into 2D motions (***.ctMotion**) with specific angle so that you can do the further 2D modifications.

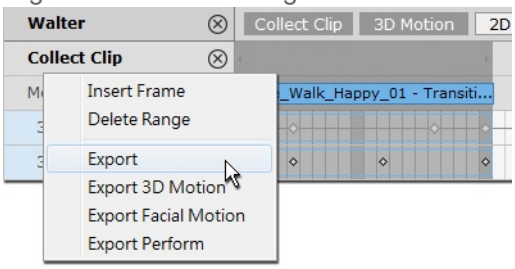
1. Open the **Timeline** (**F3**) and the **Collect Clip** and **Motion** tracks of the character.



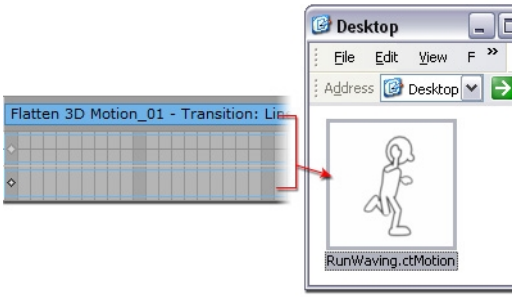
2. Drag within the **Collect Clip** track to determine a range for exporting an angular 2D motion.



3. Right click within the range and execute the **Export** command.

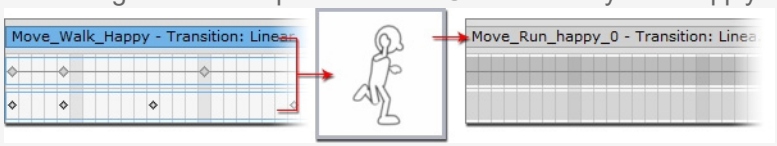


You will be prompted to set a location for saving this new 2D motion clip with the keys (including the **Angle** keys) merged into it.

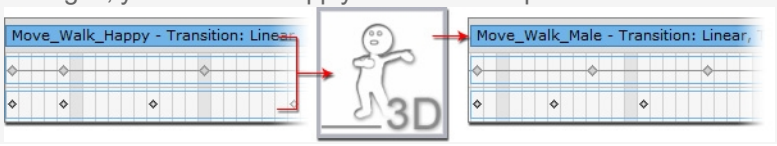


Note:

- If you execute the **Export** command, then the keys within the **Angle** and **Motion** tracks will be flatten and merged into the clip. You **CAN NOT** edit the keys after applying the new clip again.



- On the contrary, if you execute the **Export 3D Motion** command, then the keys will not be flattened and merged, you are able to apply and edit the clip afterward.



4. Apply the new 2D motion back for further 2D editing, such as **Sprite Animation**, **Transformation** or **Deformation**.

Note:

- A 2D motion is gray while a 3D one is light blue.
- Please refer to the Using 2D Motions section for more information.

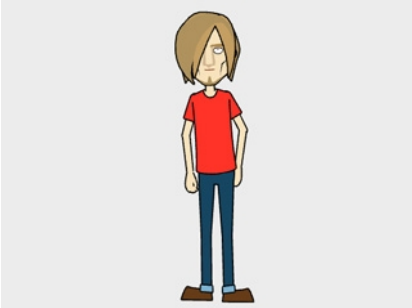
Using 2D Motions

If you are a **CrazyTalk Animator Pipeline**, **Pro**, or **Standard** user, you are free to apply embedded 2D motions (***.ctMotion**) to G1 and G2 characters.

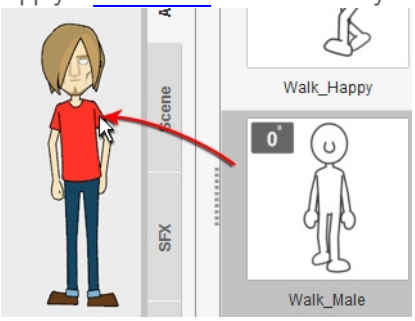
By further editing with **2D Motion Key Editor**, character can perform dramatic body transformation or distortion animations.

Loading an 2D Motion

1. Apply a G1 or G2 character.



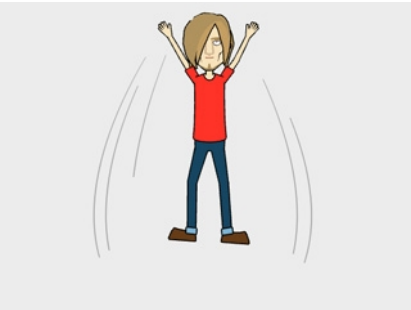
2. Apply a 2D motion from the library.



Note:

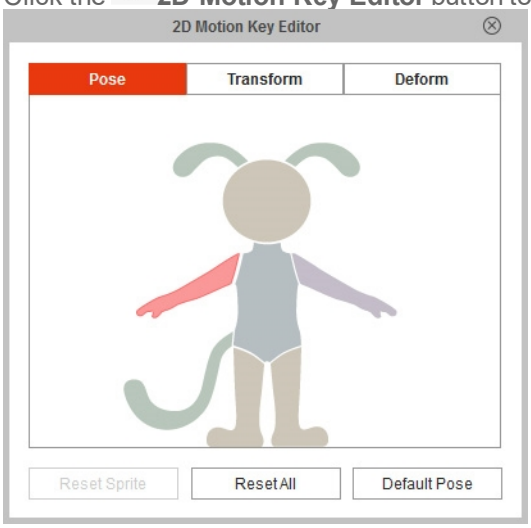
Please note that not all 2D motions are suitable for G1 characters. Please refer to the Using Character Motions section for more information.

3. The character will start to perform the applied 2D motion.

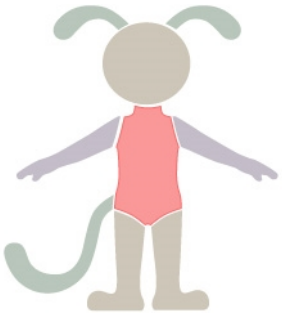


Modifying 2D Motions with 2D Motion Key Editor

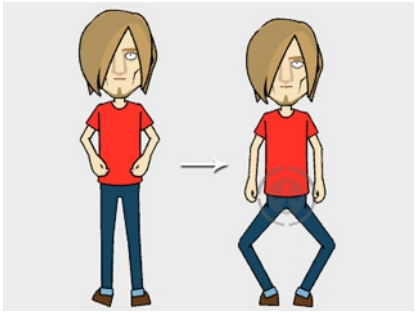
1. Make sure the character is selected.
2. Click the **2D Motion Key Editor** button to open the panel.



3. Switch to the **Pose** tab and select a target body part.



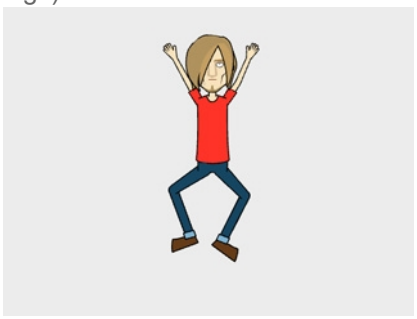
4. Go to a time frame (in this case, the frame the character bends down). Use the manipulator on the working area to quickly set a pose (motion layer key) for the character.



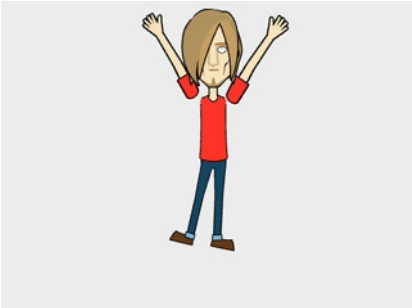
Note:

Please refer to the Using Pose Mode - FK and IK section for more information.

5. Go to the time frame when you want to set another motion layer key (in this case, the frame the character jumps high).



6. Switch to the **Body** tab and adjust the transformation of a body part.



Note:

Please refer to the Using Body Transform - Transform any Body Parts section for more information.

7. Switch to the **Deform** tab to deform the body parts of the character.



Note:

Please refer to the Deforming Body Parts to Dramatize 2D Motions section for more information.

8. Play back to view the tweening results caused by the **Motion Layer** and **Deform** keys.



Note:

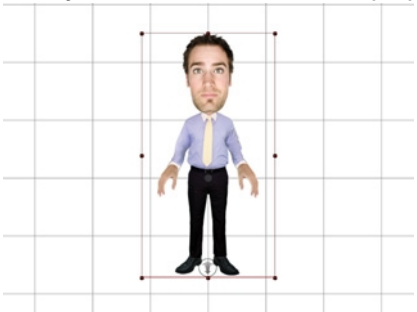
Please note that you shall **NEVER** go back to do the 3D editing after these 2D modifications are done because the 2D editing results may be destroyed and the final animations can be unexpected.

Transforming inside the Working Area

When you wish to set transform keys for a character or a prop inside the working area, then just use the **Mouse Dragging** and **Transform Tool** methods.

Mouse Dragging

After you select a character or a prop, a transforming handle box will automatically appear.



Click and Drag with the left-mouse button on a different area in order to perform different transformations. A transform key will then be added:

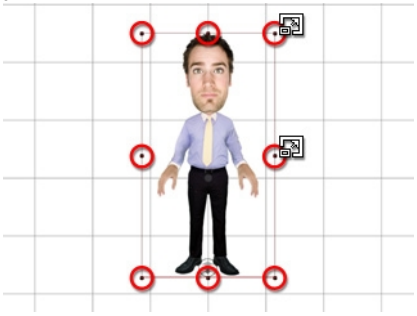
- Dragging inside of the box: Moving in the working area.



- Dragging on the icon  : Moving on the Z axis.
- Dragging outside of the box: Rotating the character or the prop.



- Dragging the four side-points: Resizing the character or the prop.
- Dragging the four corner-points: Resizing the character or the prop while keeping the same aspect ratio.
  Please note that the four corner-points proportionally scale the element while the points on the sides do a non-proportional scale.



Transform Tool

If you need to set transform keys with an exact value, simply select a character or prop and adjust the parameters via the **Property Bar**.



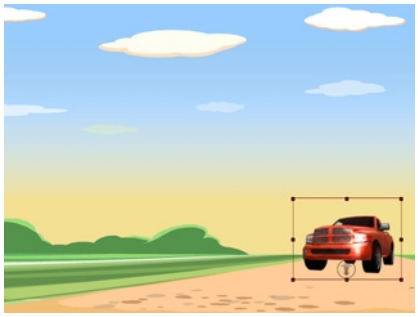
- **X**, **Y**, **Z**: Enter these values to decide the location of the character or the prop.
- **W**, **H**: Enter these values to decide the **Width** and the **Height** of the character or the prop.
- **Lock/Unlock Ratio**: Press this button to toggle the **Keep Aspect Ratio** on/off.
- **R**: Enter value to decide the orientation of the character or the prop.
- Switch between the and buttons to change the path from curve to a straight line.
- **Zero Key**: Press this button to set a neutral transform key (0 value) to each numerical field in the panel.

Creating a Path Animation

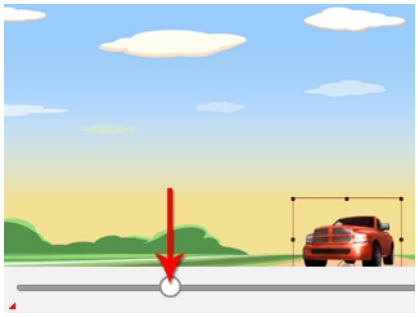
Once you create a character or a prop, you may then create a path for it. When you playback the project, the character or prop will then move along the path you set.

Creating a Transform Path

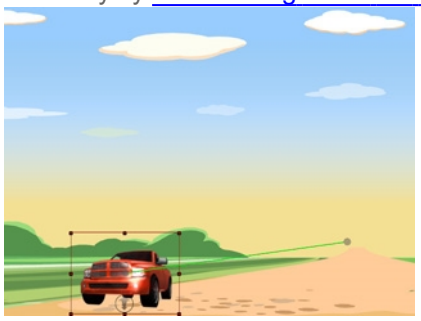
1. Select a character or a prop (character in this example) in the **Stage Mode**. By default, **CrazyTalk Animator** switches to the **Transform** mode as soon as you select a character or a prop.



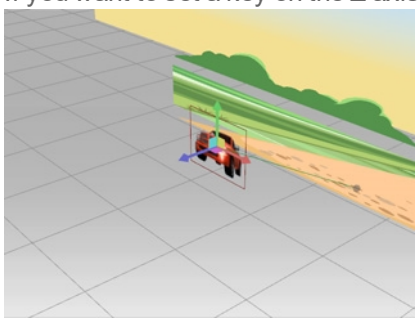
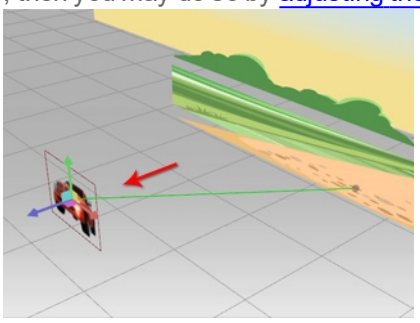
2. Go to another time frame.



3. Set a key by transforming inside the working area. A green path automatically forms.



4. If you want to set a key on the Z axis, then you may do so by adjusting the Z values with 3D view.

5. Play back the project to see the result.

Note:

- Each sprite in a prop can also have its own animation. Please refer to the Sprite Transformation Animations section for more information.

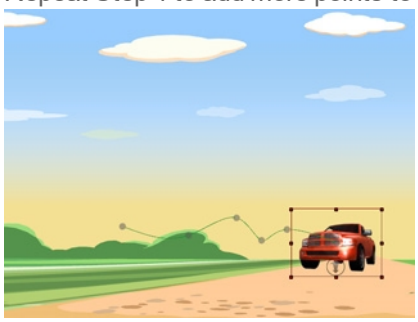
Editing the Path Shape

Once the path is created, you may need to edit it.

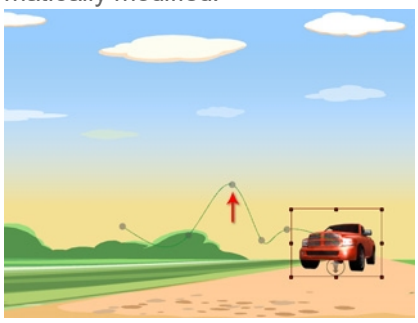
1. Go to another time frame. Move, scale or rotate the prop away in order to generate a new transform key.



2. Repeat Step 1 to add more points to the path.



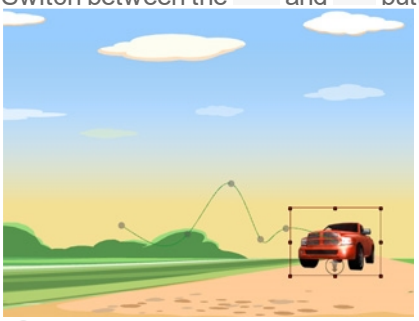
3. Drag a point on the path, but away from its current location. The line between the two key points will be automatically modified.

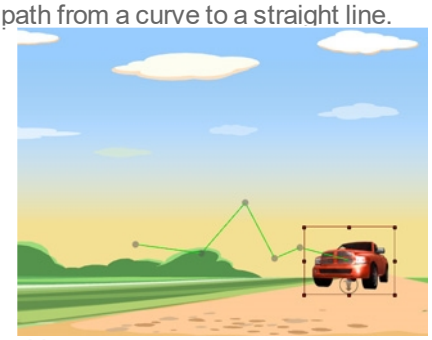


4. Show **Property Bar** on the working area.



5. Switch between the  and  buttons to change the path from a curve to a straight line.


Curve

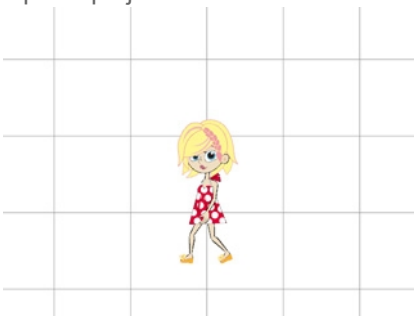

Linear

Collaborating Body Motions and Transform Paths

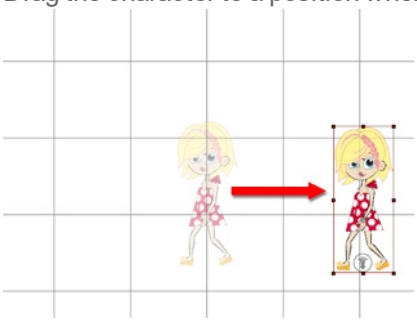
When you have a character in motion, then it will stay 'in Situ' (at the same location). If you want the character to move around, then you need to combine the movements with a set path.

Side Character

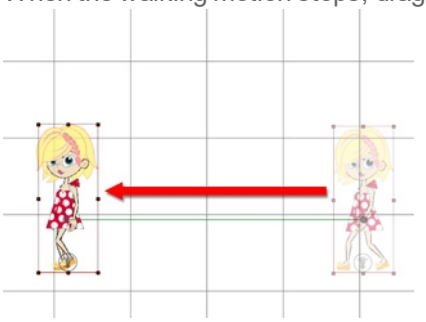
1. Open a project with a side character already set walking motion.



2. Drag the character to a position where the walking motion starts.



3. When the walking motion stops, drag the character to the end location to create a path.

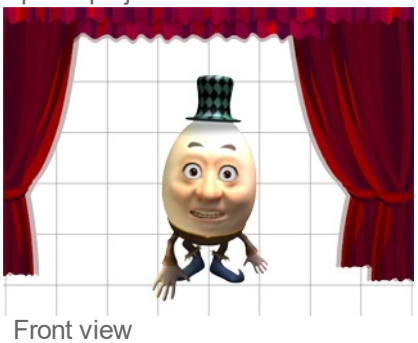


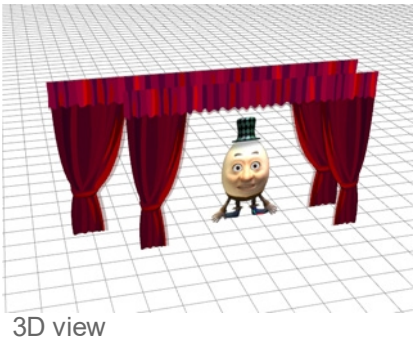
4. Play back to see the result.



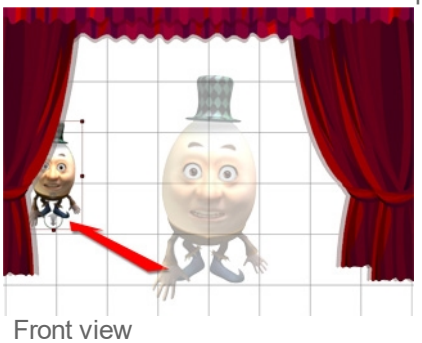
Front Character

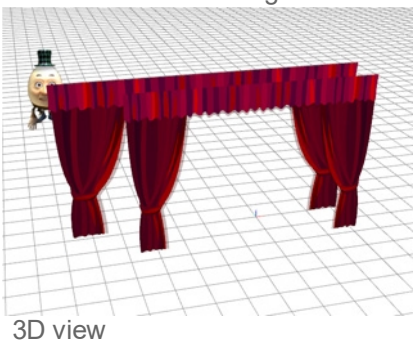
1. Open a project with a front character already set walking motion.


Front view

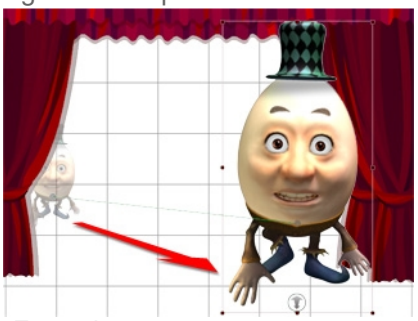

3D view

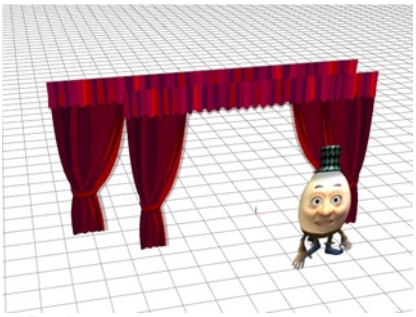
2. Roll the mouse wheel to set the Z depth of the character to a distance where the walking motion starts.


Front view

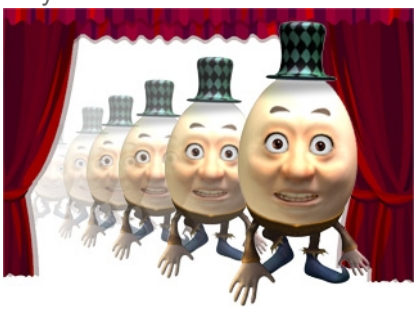

3D view

3. When the walking motion stops, roll the mouse wheel again to set a new Z depth to the new place where the walking motion stops. This is done in order to create a path from far to near.


Front view


3D view

4. Play back to see the result.



Note:

- Please refer to the Creating a Path Animation and Adjusting the Z values with 3D View sections for more information.

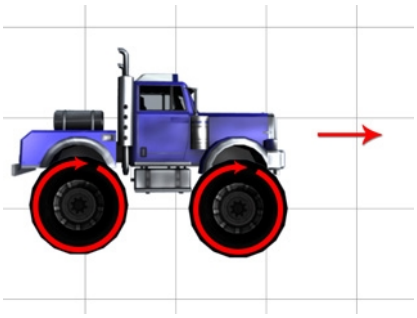
Sprite Animation

Sprite Animation involves two methods. You may use these two methods to create sprite transformation animations or sprite switching animations.

- Sprite Transformation Animations
- Sprite Switch Animations
- Releasing Sprite Switches

Sprite Transformation Animations

Since props are usually composed of a group of at least one sprite, you may imagine a prop as a container that contains one or more sprites. The container will perform its own animations while the sprites inside of it perform their own individual animations.

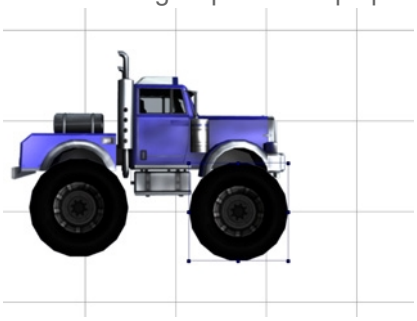


Please note that this feature only supports props and not characters.

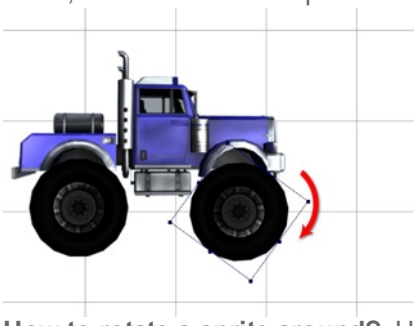
1. Select a prop (with one or more sprites) in the **Stage Mode**.
2. Press the hotkey **K** to bring up the **Prop Key Editor** on the **Property Bar**.



3. Select the target sprite in the prop.

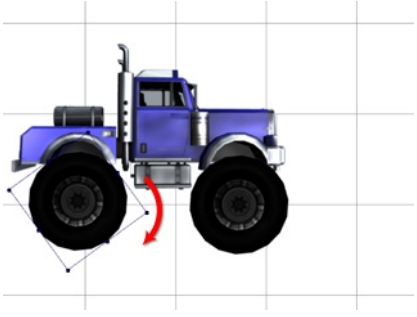


4. Move, rotate or scale the sprite to set a transform key.

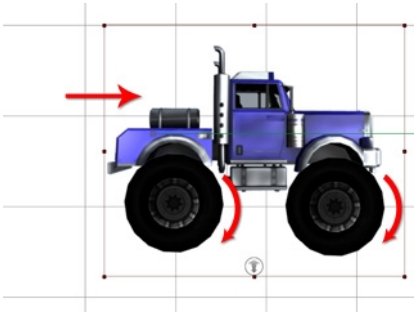


How to rotate a sprite around?: Use three keys to make a sprite turn around - 0-->179-->359 instead of 0-->180-->359.

5. Go to another time frame and add a new transform key.
6. Repeat Steps 3 to 5, to create a transform animation for another sprite in the same prop.



7. You may also set a path for the prop to move along. Please refer to the Creating a Path Animation section for more information.



Note:

- The center of individual sprites can be set in the **Composer**. Please refer to the Locating the Center section for more information.

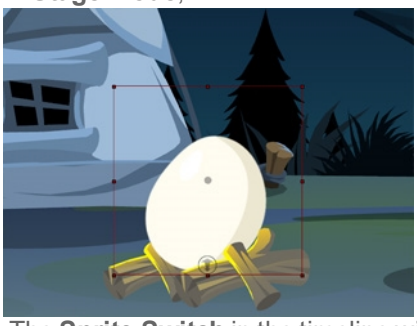
Sprite Switch Animations

Once you have a sprite that consists of multiple media, then you may use it to create sprite switching animations. By selecting one of the sprite's media in different time frames, the sprite shows different appearances when played back.

Take note that this feature supports both characters and props.

Creating Sprite Switch Animations

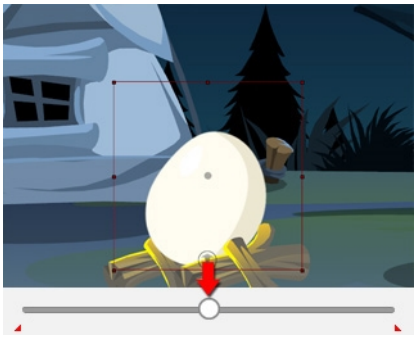
1. In **Stage Mode**, click to select a character or a prop.



The **Sprite Switch** in the timeline will be displayed in the form shown below:



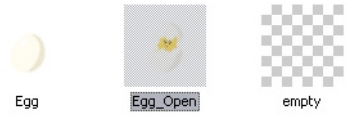
2. Click the **Sprite Editor** button.
3. Go to another time frame.



The **Sprite Switch** in the timeline displays in the form shown below:



4. Pick one of the media files in the **Sprite Editor** panel. A switch key is automatically set.
   Please note that in this example, the picked element is an animation.



5. Play back the project. When it comes to the frame where the key is set, the picked file from the last step will show.

Releasing Sprite Switches

Since a **Sprite Switch** in the **S** sub track is a lasting status, and has the highest priority than any other switch data compacted in clips, then it will be overridden by it.

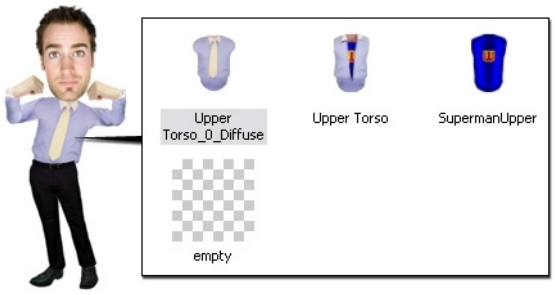
CrazyTalk Animator provides the **Release** feature to eliminate the effect in the **S** sub track until another new switch is set.

It is highly recommended to refer to the Clip and Key Priority - Motion section before you read this page.

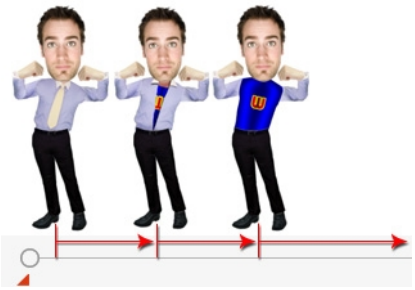
Release Key - without Motion Clip

When there is no other motion clips involves, the set of a **Release** key will use the **First** element (initial sprite status as mentioned above) in the sprite editor.

1. Given a sprite with multiple elements.



2. Set different sprite switches in various time frames. The sprite remains the same after the last switch until the end of the project.



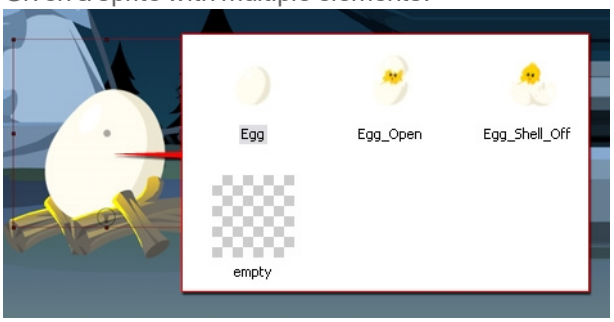
3. Go to the time frame after the last switch and set a release key by clicking the **Release** button on the **Sprite Editor** panel.
4. The sprite displays the first element since the priority of the sprite track is forced to do so in the motion track (initial sprite status).



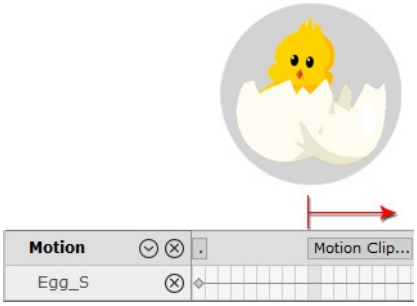
Release Key - with Motion Clip Containing Switch Effects

Since the **S** track has the highest priority, any other switch effects in a motion clip will be overridden. If you want to display the switch effects compacted in a motion clip, then you need to use the **Release** feature to temporarily hand out the priority.

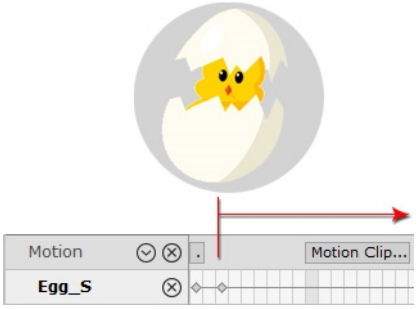
1. Given a sprite with multiple elements.



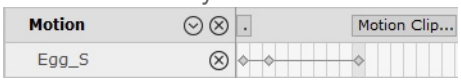
2. Apply a motion with switch effects in it.



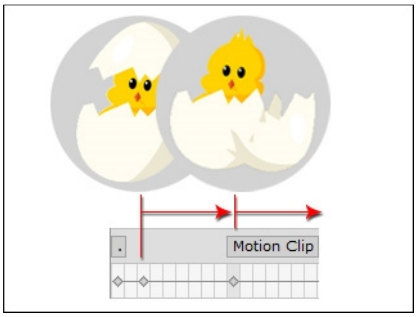
3. Set sprite switches before the motion. You will see that the switch effect in the motion clip will be overridden by the last switch in the **S** track.



4. Set a **Release** key at the start frame of the motion by clicking the **Release** button on the **Sprite Editor** panel.



5. The switch effect in the motion will be kept.



Setting Layer Keys for Characters

After you apply motions to character, the layer order will be determined by auto-calculating the bone structure of the character. However, the layer order is not always fixed throughout the whole project. You may set layer keys in different time frames by moving the body parts up or down.

1. Select a character whose leg swings. With the initial layer order; the right leg will always be behind the left leg.

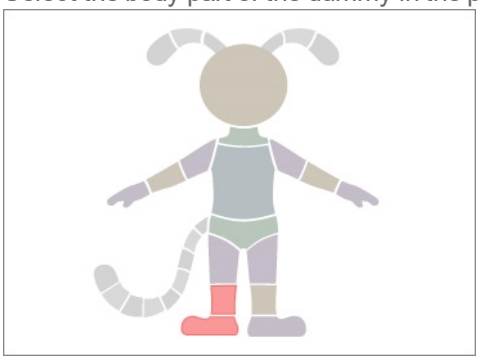




2. Go to the time frame before the character crossed legs.
3. Open the **Layer Editor** by clicking the **Layer Editor** button.



4. Select the body part of the dummy in the panel (you may hold the **Ctrl** key for selecting multiple body parts).



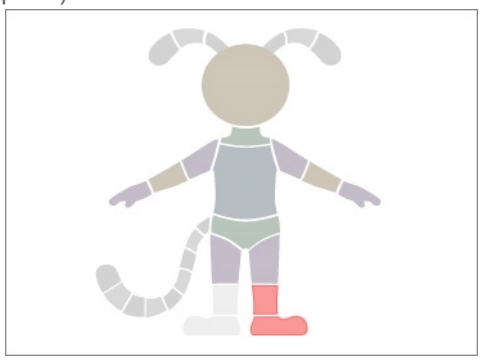
5. Click the **Send to Front** button.

Note:

- **Send to Front**: Send selected body parts one layer above target ones.
- **Send to Back**: Send selected body parts one layer below target ones.

- **Move to Top**: Send selected body parts to the top layer.
- **Move to Bottom**: Send selected body parts to the bottom layer.

6. Click on the target body part above which you want to move (you may hold the **Ctrl** key to select multiple target body parts).





7. Go to another time frame where you need the layer order to be reset.
8. Click the **Release Key** button to remove the effect of the key. The initial layer order will now be retrieved.

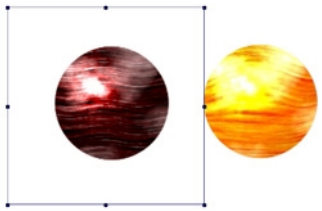


9. Play the project to see the result.

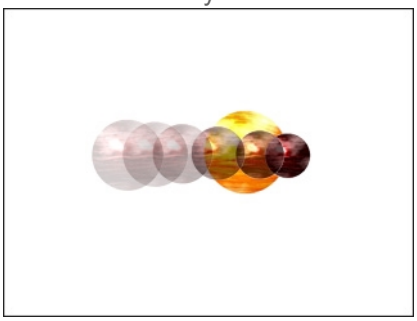
Setting Layer Keys for Props

In the Changing the Layer Order of Sprites section, you are allowed to set the initial layer order for sprites in a prop. However, you may set layer keys in different time frames.

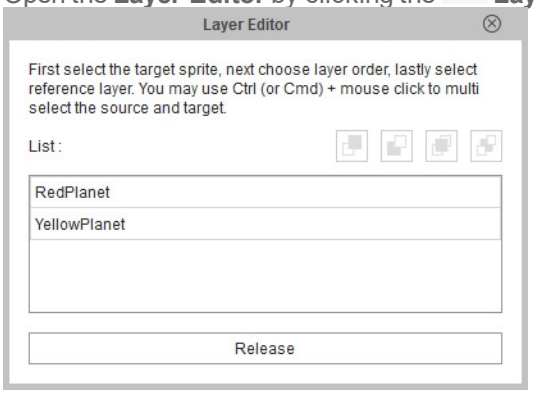
1. Use the **Composer** to create a composite prop with multiple sprites (In this example, yellow planet and red planet).



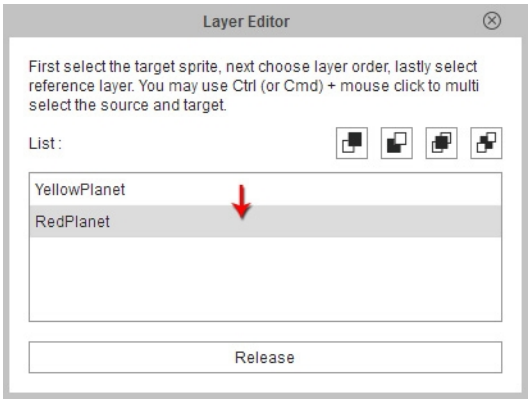
2. Switch back to the **Stage Mode**. Click the **Prop Key Editor** button to set sprite animations for the red planet. Since the initial layer order is set in the **Composer**, you can not make it move to the back of the yellow planet.



3. Open the **Layer Editor** by clicking the **Layer Editor** button.



4. Select the objects in the list (you may hold the **Ctrl** key for selecting multiple objects).
5. Click the **Send to Back** button.

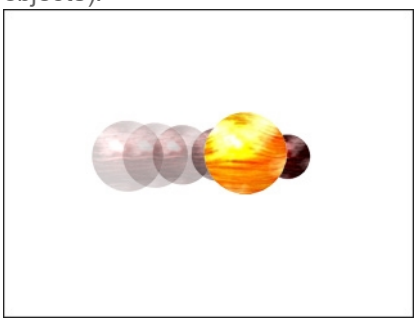


Note:

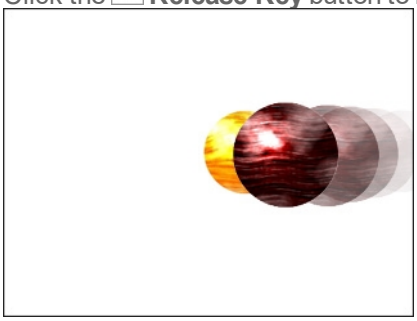
- **Send to Front**: Send selected objects one layer above target ones.
- **Send to Back**: Send selected objects one layer below target ones.

- **Move to Top**: Send selected objects to the top layer.
- **Move to Bottom**: Send selected objects to the bottom layer.

6. Click on the target objects above which you want to move (you may hold the **Ctrl** key to select multiple target objects).

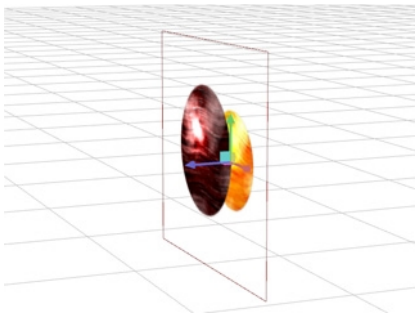


7. Go to another time frame where you need the layer order to be reset.
8. Click the **Release Key** button to remove the effect of the key. The initial layer order will now be retrieved.



9. Play the project to see the result.

Note:
If you observe this composite prop in the 3D viewer, you will see that the animation plays on a flat board.



Releasing Layer Keys

CrazyTalk Animator supports setting layer keys for characters and props. The layer order can be adjusted in different time frames to produce animations with layer flexibility.

However, after a certain number of adjustments the layer order may be different from the initial status. You may use the **Release** feature to retrieve the original layer order.

It is highly recommended to refer to the Clip and Key Priority - Motion section before you read this page.

Release Layer Key - without Motion Clip

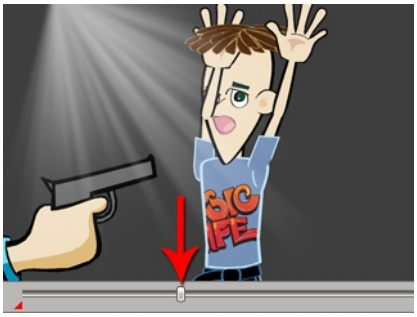
1. Set a pose to a character in a time frame.



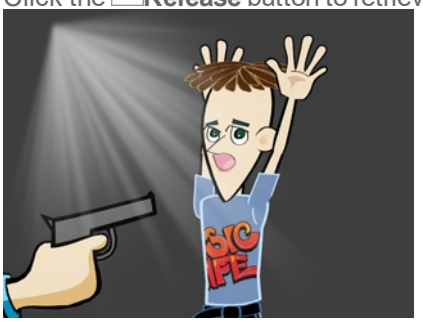
2. The hand and forearm in the layer order, as it is in the **Composer Mode**, are behind the head.
3. Re-arrange the layer order by setting layer keys. Please refer to the Setting Layer Keys for Characters section for more information.



4. Go to another time frame.



5. Click the **Release** button to retrieve the initial layer order as in the **Composer Mode**.



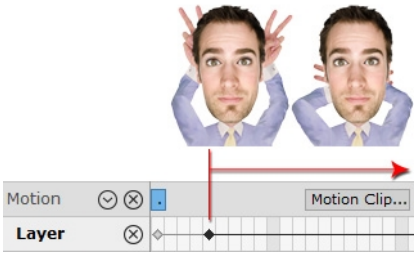
Release Key - with Motion Clips Containing Layer Keys

Since the **Layer** track has the highest priority, any other layer keys in a motion clip will be overridden. If you want to have the results of the layer keys compacted in a motion clip, then you need to use the **Release** feature to temporarily hand over priority.

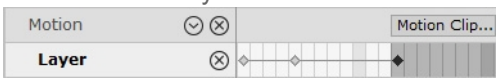
1. Apply a motion with re-arranged layer keys in it.



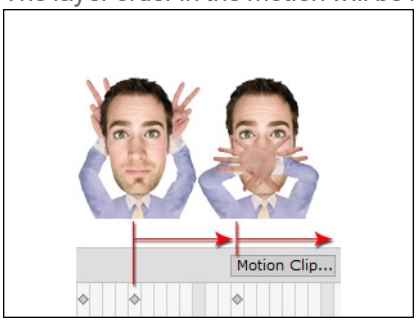
2. Set layer keys before the motion. You will then see that the layer order in the motion clip is overridden by the last layer key in the **Layer** track.



3. Set a **Release** key at the start frame of the motion by clicking the **Release** button on the **Layer Tab**.



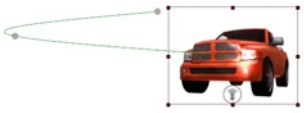
4. The layer order in the motion will be kept.



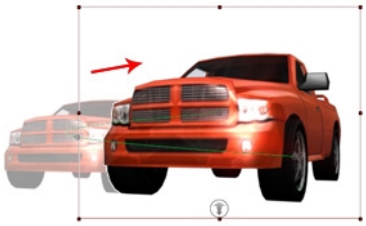
Making a Turn by Flipping Side

When you create a back and forth motion path for a character or a prop, you may need it to face the other side at a certain point so that it does not seem to be moving backwards. This is especially useful if you want to make vehicles or strolling pedestrians approach the scene from a distant perspective.

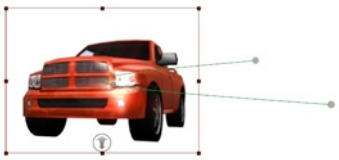
1. Select a character or a prop that moves from right to left and right again along a path.



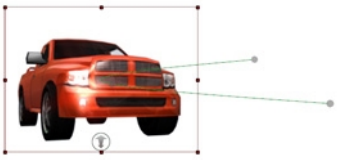
2. Once the prop reaches the middle point of the path, it will be necessary to flip the prop's facing side.



3. Drag the play head to the time frame where the character or the prop's side is supposed to turn.

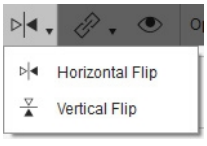


4. Click the **Flip** button on the tool bar. The prop will then be flipped for the rest of the path unless you flip it again.





By default, characters and props flip horizontally. You may drag down the list and click the triangle to set flip to horizontal or vertical.

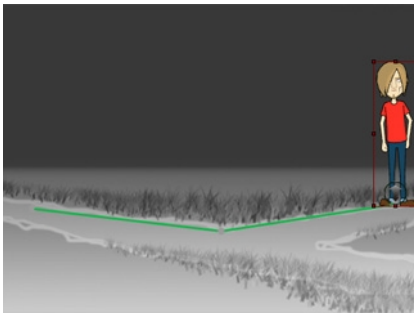


Turning the Character with Angle Keys

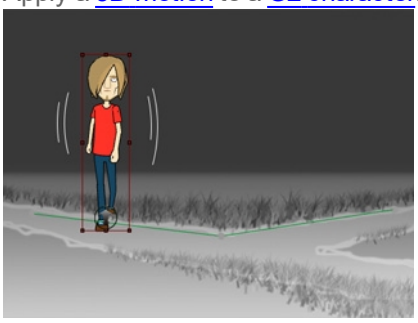
Pro & Pipeline

After a G2 character has been applied with 3D motions (**Pro** or **Pipeline** version), you are able to turn the character to different angles while the motions is still correctly performed.

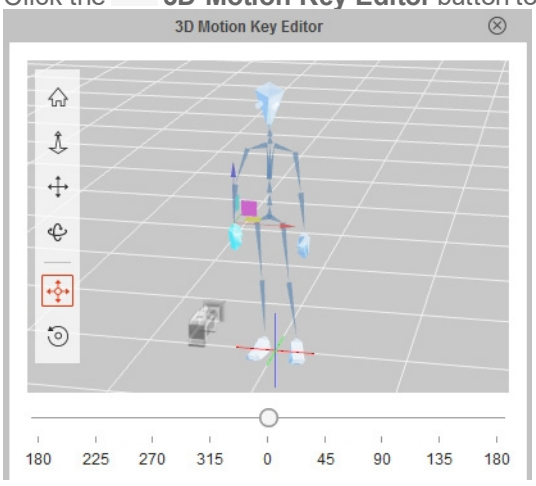
1. Move the character to set the transform path.



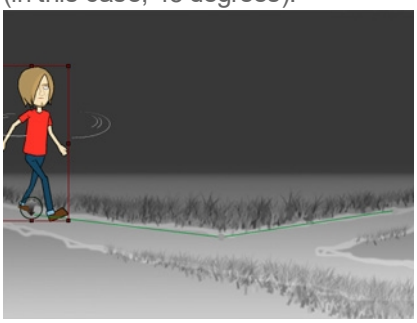
2. Move to the start frame of the path.
3. Apply a 3D motion to a G2 character.



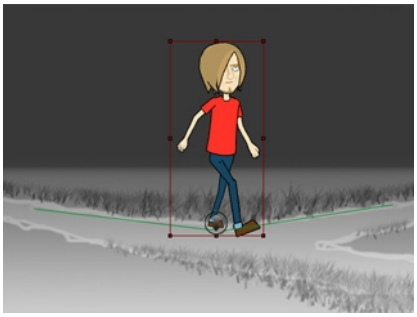
4. Click the **3D Motion Key Editor** button to open the panel.



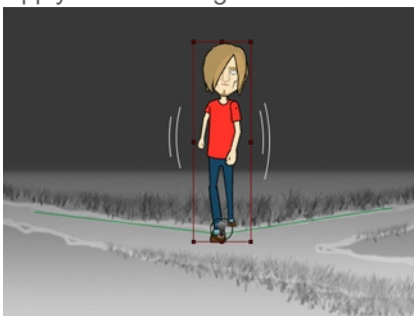
5. Move back to the start frame of the path and drag the slider under the 3D view to determine the angle of the character (in this case, 45 degrees).



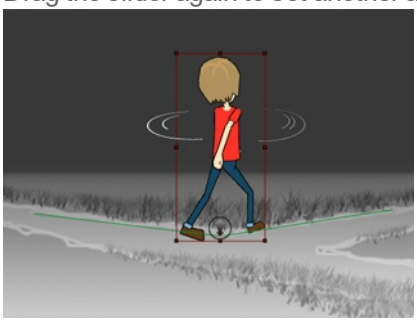
6. Move to the time frame when the character needs to change its direction.



7. Apply 3D motion again to the character.



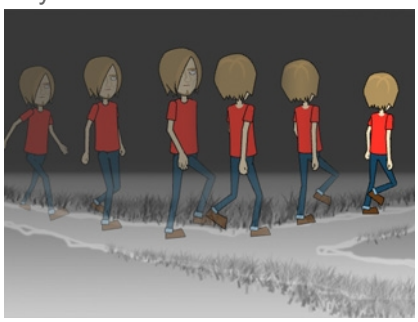
8. Drag the slider again to set another angle (in this case, 135 degrees).



Note:

Always apply a motion before setting the angle key because the motion contains initial angle which will remove any previously set angle keys.

9. Play back to view the result.



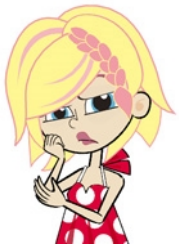
Using the Visible Setting

In **CrazyTalk Animator**, you can have characters, props and image layers show or hide during different time frames. However, since each object can only have one path form (curve or line), then you may use the Visible Setting option to have an object move with mixed path forms.

Using Visible Setting Effect to Show/Hide

As soon as you add them, effects in **CrazyTalk Animator** loop from the first to the last frame of the project. So if you need the effect to start at a specific time frame, then you need to hide it until you want it to appear.

1. Load a project, and go to the **Object** content folder in the **SFX** tab of the **Content Manager**.



2. Apply an effect from the library.



3. At the Start frame, select the effect and click the **Visible/Invisible** button. The eye button icon will then close and the effect will be hidden.
4. When you need it to show up, simply click the **Visible/Invisible** button again to show the effect.



Using Visible Settings to Create Combined Animation Effects

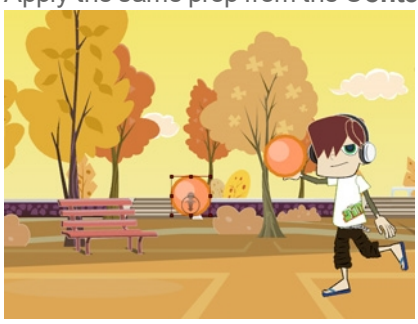
In **CrazyTalk Animator**, the moving path form of an object (character or prop) can only be a curve or a straight line. If you save the object into the content library, then you may move the object with mixed path forms by using the **Visible/Invisible** feature.

1. If you want the character to kick the ball that is dropped from his hand, then the path of the ball can be like this:



The path from the hand to the ground is not vertical.

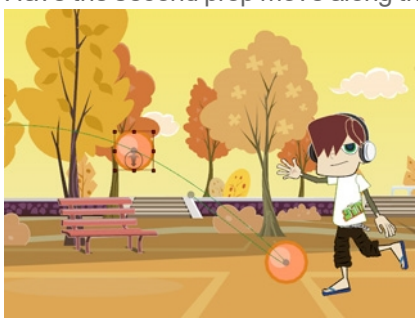
2. Apply the same prop from the **Content Manager**, it will become the second prop in the project.



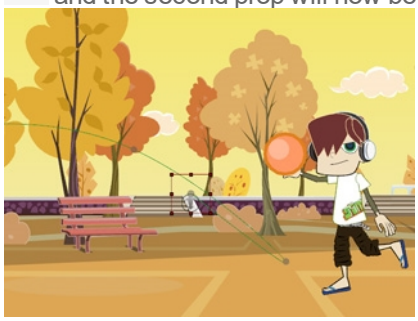
3. Have the first prop move along the vertical straight path.



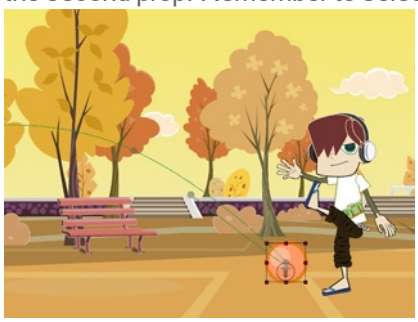
4. Have the second prop move along the curve path.



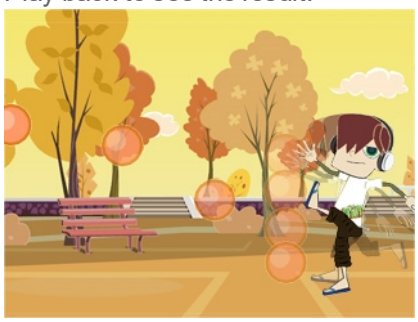
5. Go to the start frame, hide the second prop by clicking the **Visible/Invisible** button. The button will change and the second prop will now be hidden.



6. Go to the frame where the two props superimpose each other. Click the **Visible/Invisible** button again to show the second prop. Remember to select the first prop and hide it with the same method.



7. Play back to see the result.



Using the Opacity for Fade In and Fade Out

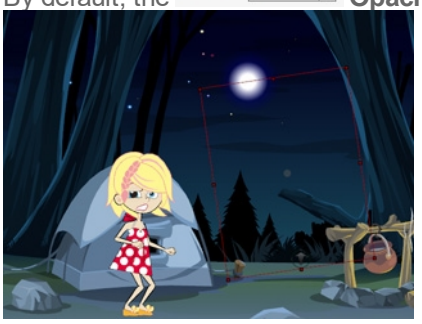
The **Opacity** setting not only decides the transparency of a **character**, **prop** or **image layer**, but it can also create fade in and fade out effects. You can create fade in and fade out effects in any project by altering the opacity values of the image layer.

1. Select a prop. (If you want to select an image layer, then select it from the **Scene Manager**)



2. By default, the 

Opacity of a prop is 100. Change it to 0 (zero).



3. Go to another time frame where you want the selected prop to fade in. Change the **Opacity** value of the item to 100. Play back to see the prop gradually appear.



Opacity = 50



Opacity = 100

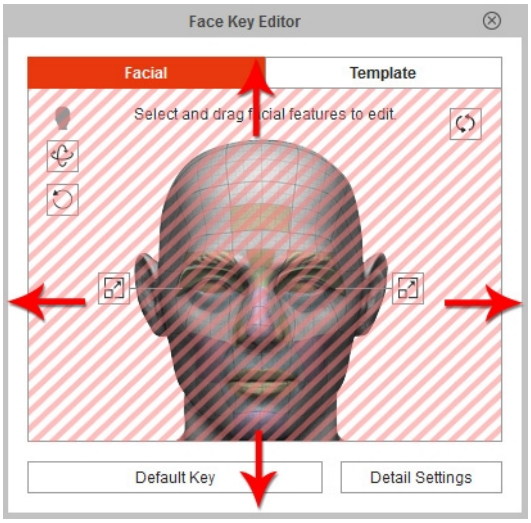
Using the Mouse Cursor in the Motion Key Editor and Puppet Editor

You may use the **Motion Key Editor** and **Puppet Editor** to produce a character's facial expressions and body motions. However, when these panels show, there are specific reaction areas for your mouse movements to take effect. The mouse movements can be categorize into two aspects; **Cross Movements** and **Circular Movements**.

Cross Movements - Face Key Editor and Face Puppet Editor

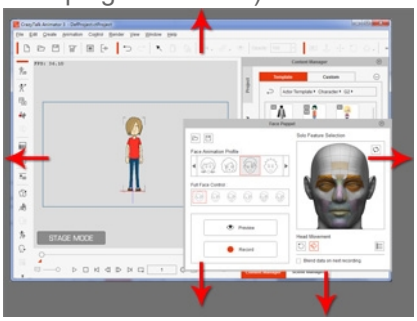
Face Key Editor

The reaction area for the **Face Key Editor** is described below. You must drag across from the inside to the outside of the area in order to control the facial features:



Face Puppet Editor

When you **Preview** or **Record** facial expressions, you can move the mouse cursor across the screen (outside of the main program window) as shown below:



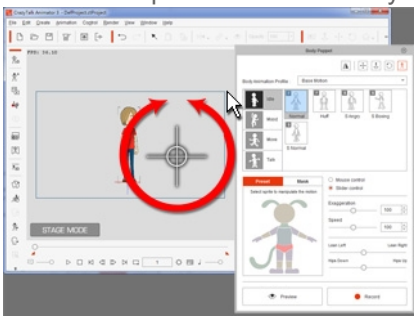
Circular Movements - Body Puppet Editor

When you use the **Body Puppet Editor** to preview or record body motions, then you use a circular mouse movement to control.

Please notice:

- You can move in a circular pattern around the axis mark on the screen.

- The motion speed is determined by how fast you draw the circle.



Clockwise Direction

If you drag the mouse in clockwise direction, then the character motion performs forward.



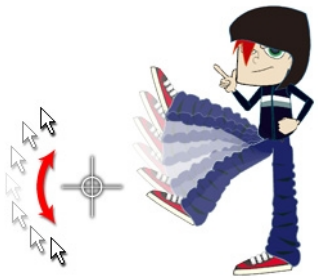
Counterclockwise Direction

If you drag the mouse in counterclockwise direction, then the character motion performs backwards.



Partial Circular Movements

You do not need to always make a full circle around the mark to produce a complete motion. You can move back and forth in an arc movement to puppet the character in a partial movement of the preset motion.

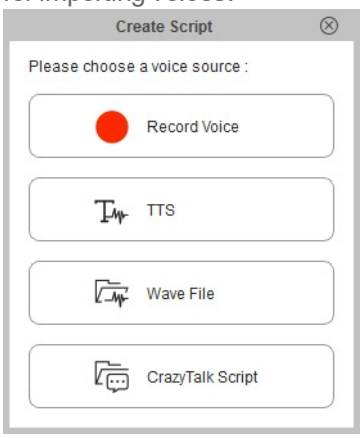




Adding Voice to a Character

Each character in **CrazyTalk Animator** can open its mouth and speak. You may use four methods to add voices to a characters.

1. Select a character.
2. Click the **Create Script** button on the **Functional Tool Bar**. Inside the panel you will find four different methods for importing voices.

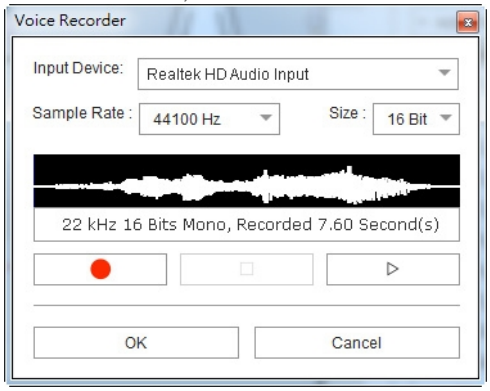


3. Choose a method and click its button.
   - Using the Voice Recorder
   - Converting Text to Speech
   - Importing Wave/MP3 Files
   - Using Talking Scripts

Using the Voice Recorder

CrazyTalk Animator provides a sound recorder that can record voice from various audio sources. This audio can then be used as part of a talking message and as a script to animate models. The voice recorder can record sounds from various audio devices such as a microphones, phone lines, CD players, audio-in lines, or any other auxiliary input devices connected to your PC.

To record sound, click the **Record Voice** button. The sound recorder menu will then open.



Follow these steps to create an audio script:

1. Select the source for sound recording from the **Input Device** drop-down list.
2. Click the **Record** button to start recording. Recording from the specified input device will then start.
3. Click the **Stop** button to stop recording sound.
4. Click the **Play** button to play back the recording.
5. If you are satisfied with the results, then click the **OK** button. If not, then press the **Record** button to record again.

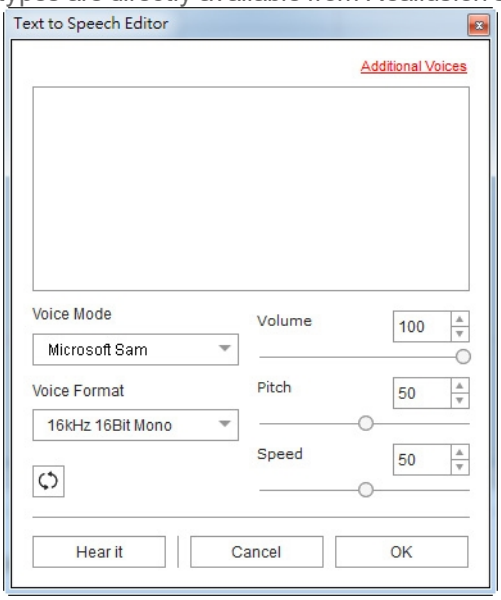
Note:

- The maximum length of a sound recording is 30 minutes.

Converting Text to Speech

CrazyTalk Animator can also animate through text-to-speech engines. By default CTA is connected to Microsoft's TTS (Text-to-Speech) engine, but users may incorporate their own additional engines if they wish to create their own talking scripts.

CrazyTalk Animator supports SAPI compliant Text-to-Speech engines. **CrazyTalk Animator** uses the Microsoft TTS engine as this has 19 voice characters available. If you currently only have one voice installed (default), then other voice types are directly available from Reallusion's site http://www.reallusion.com/mtts.asp, or visit Microsoft's website.



Follow the below steps to create an audio script:

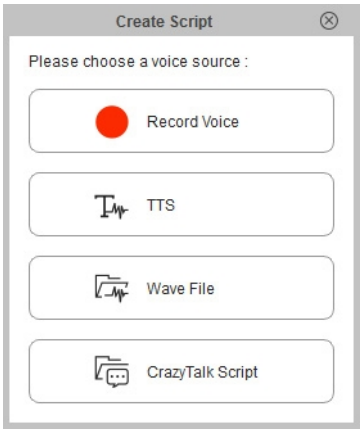
1. Type the text in the editor window. Alternatively, you may also copy and paste text from any word processing program.
2. Select the type of voice to be used by the model by choosing in the **Voice Mode** drop-down list. Various voices for both sexes, with different settings, are available.
3. Adjust the voice by using the **Volume**, **Pitch**, and **Speed** sliders to achieve the desired effect. You may also enter a number value directly into the boxes next to the sliders. You may need to experiment a little with these settings before you get the desired results. Click the **Reset** button at any time to reset the sliders to their default values.
4. Click the **Hear it** button to play back the text.
5. Click the **OK** button when done.

Importing WAV/MP3 Files

CrazyTalk Animator provides a useful feature of importing audio files and using them as the scripts to animate actors. For instance, if you wish to animate your actor singing a song, then you may import your the song in WAV/MP3 format.

To import WAV/MP3 files, please follow the steps below:

1. Click the **Create Script** button.
2. Click the **Wave File** button to import a speech file in PCM WAV/MP3 format.



3. Specify the name and location of the WAV/MP3 file by choosing in the dialog box.
4. Click the **Open** button to open the file. The file will then be imported and used as a script.

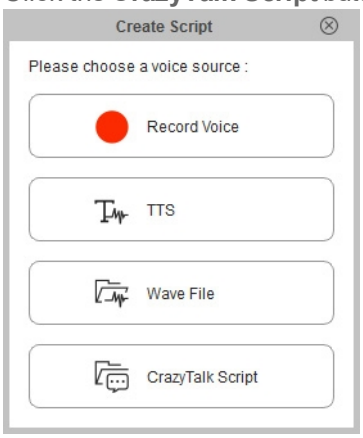
Note:

- The maximum length of an imported audio file is 30 minutes.

Using Talking Scripts (CtFcs, Cts, Clp)

CrazyTalk Animator provides useful features for importing script files that can be applied for both voice-overs and actor expressions.

1. Click the **Create Script** button.
2. Click the **CrazyTalk Script** button to import a speech file created with **CrazyTalk Animator**.



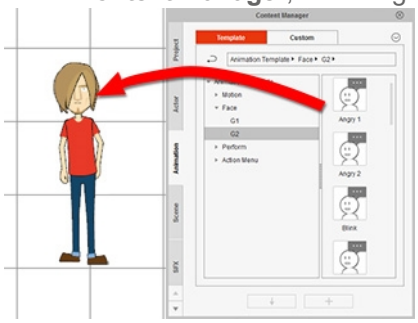
3. Click the **Open** button to open the file. The file will then be imported and used as a script.

Note:

Please note that **CrazyTalk Scripts** contain reusable and re-editable voices, lipsyncs and facial expressions.

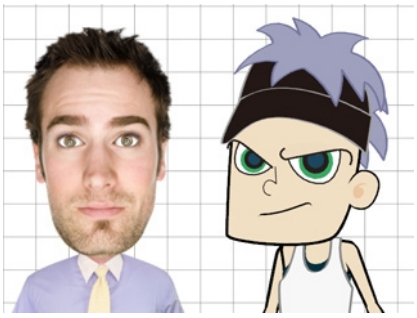
Applying Voice Scripts

You can directly apply professional sample scripts from the library. Go to the **Face** content folder in the **Animation** tab of the **Content Manager**, then drag and drop a template to an actor to apply the voice script.



Morph-based and Sprite-based Heads

There are two kinds of **CrazyTalk Animator** heads; Morph-based and Sprite-based head. The morph-based head is produced through the **Image-fitting** method while the sprite-based head is created with sprite combinations in the **Composer Mode**.



When using the **Face Puppet Editor** or **Face Key Editor** to modify expressions, these two head types will react in different ways.

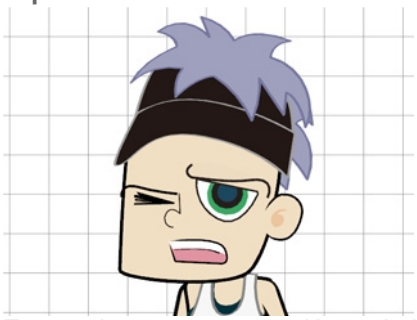
Morph-based Head



Expressions are generated by driving the face muscles.

Transitions between two keys are automatically generated.

Sprite-based Head



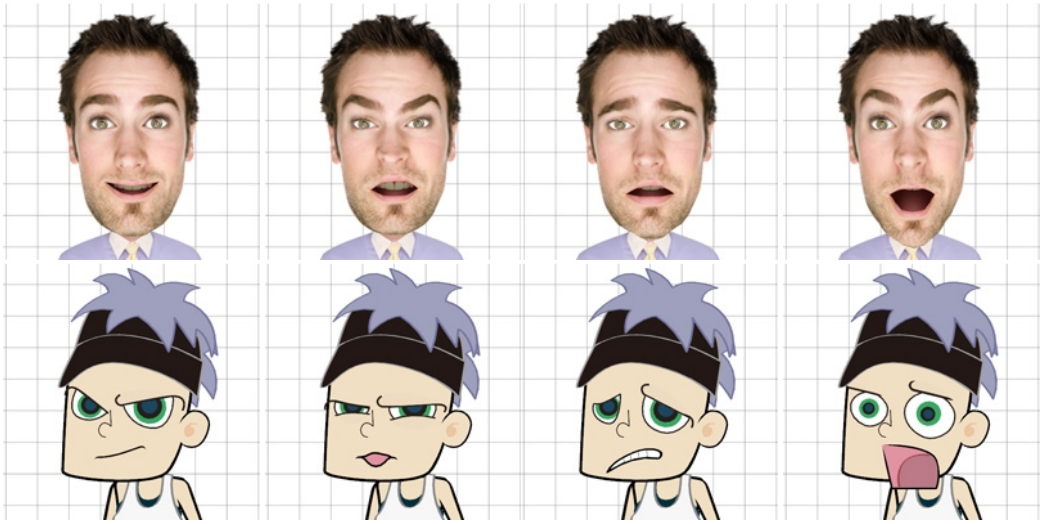
Expressions are generated by switching different facial feature sprites. Please refer to Face Keys and Sprite-based Heads section for more information.

There is no transition between two replacement keys.

You are allowed to define your own sprite elements from images or videos.

Morph-based and Sprite-based Heads with Expressions

The same facial expressions can be applied to different head types. The results are the same but each delivers a different impression.



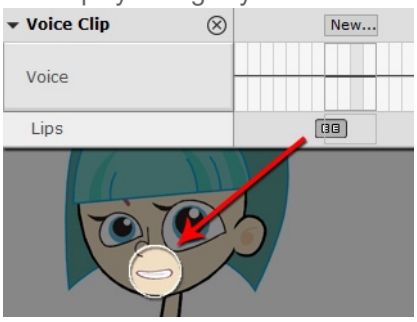
Facial Clips and Keys

There are tracks relevant to the facial features of a character, including tracks of clips and tracks of keys. You may need to know how to use them when you wish to use the timeline for authoring animations.

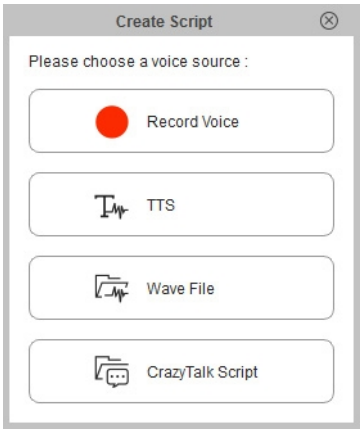
Voice Clip and Lip Keys

When you apply voices to characters, the lip and mouth animation will be generated automatically by **CrazyTalk Animator**. Any lip synching keys set manually before will be kept because of the Clip and Key Priority.

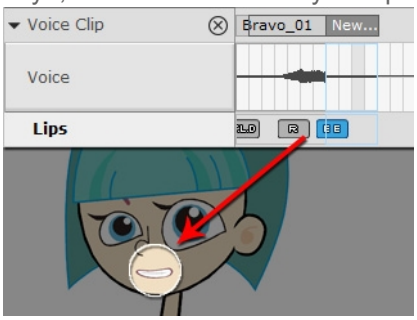
1. Set a lip synching keys for a character. A new clip will be automatically generated on the **Voice Clip** track.



2. Go to some frames ahead, click the **Create Script** button.
Click on one of the buttons to add a voice to the character.



3. The voice will be presented in a clip form inside the **Voice Clip** track. When the clip encounters lip-synching keys, it will be overridden by the lip viseme shapes.

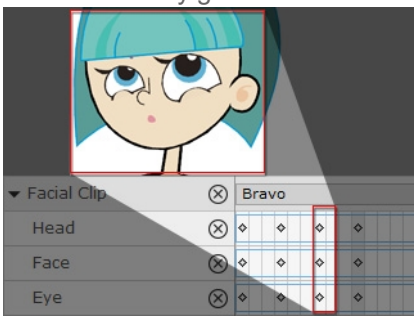


Facial Clips and Head, Face, Eye Keys

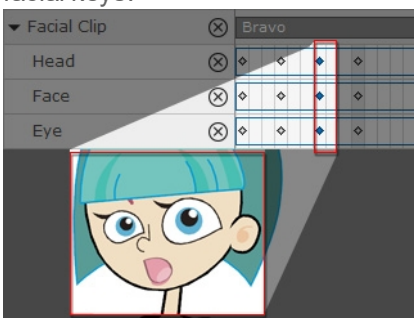
Facial expressions can be produced by two different data types: **Facial Expression Clips** and **Facial Expression Keys**.

If you have already applied a facial expression clip to your character, **Facial Expression Keys** may override the expressions from the **Facial Clip**. Please refer to the Clip and Key Priority section.

1. Record a facial expression clip for a character by using the Face Puppet Editor. The facial expression keys will be automatically generated on the relevant tracks: **Head**, **Face** and **Eye**.



2. Double click on the time frame (with facial expression key) to add a special facial expression key by using the Face Key Editor. The original expressions from the **Facial Clip** will be overridden by the subsequently added facial keys.



Five Approaches to Generating Facial Expressions

There are five main methods to generating facial expressions for a character.

- Facial expressions from the Library
- Using the Sprite Editor to Switch Facial Expressions
- Using the Face Puppeteering Panel
- Using the Face Key Editor
- Utilizing the Action Menu for Expressions

Facial Expressions from the Library

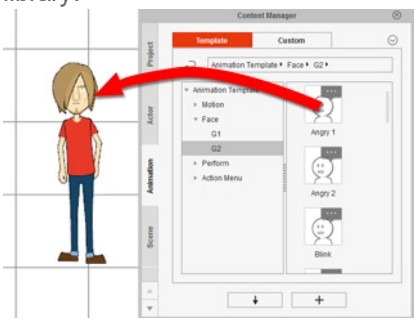
The easiest way to apply character expressions is by choosing templates from the **Content Manager**. To do this, simply go to the **Animation** tab in the **Content Manager**.

Templates Containing Facial Expressions

You may apply facial expressions, from several types of motion templates, found in the library list below:

- Face
- Perform
- Action Menu

1. Select a character.
2. Double-click on the desired template (or drag and drop the template onto the character) from the **Face** or **Perform** library.



3. The character will then proceed to act out the expression.

Note:

- Each template in the **Perform** library contains **Motion** and **Face** (voice and expression) data. Applying a template of this kind will have the character perform and speak with the chosen expressions on its face.
- For using the **Action Menu** templates, please refer to the Utilizing the Action Menu for Expressions section for more information.

Looping Expression Clips

If you wish to loop an expression, but do not want to open the timeline, then use the method below:

1. Select a character.
2. Go to the **Face** or **Perform** content folders in the **Animation** tab of the **Content Manager**.
3. Apply the desired template. The character will then show the expression on its face.
4. Wait until the play back auto-stops, then apply the same template again.
5. Repeat Step 3 and 4, in order to loop the expression.

Note:

- Please refer to the Speed, Loop and Blending section for more information.

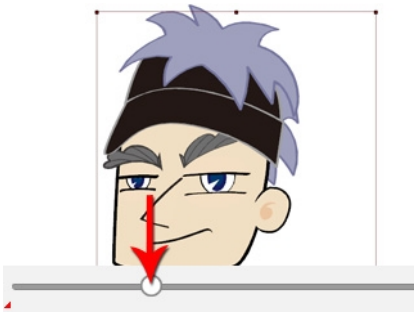
Using the Sprite Editor to Switch Facial Expressions

The facial features of a **Sprite-based** head are actually sprites with one or more elements inside. By using the **Sprite Editor**, you may switch to any element in a facial feature. Elements compose various expressions on the character's face.

1. Select a character with a **Sprite-based** head.



2. Go to different time frame.



3. Click the **Sprite Editor** button.
4. Pick any facial feature. You may see all the feature elements listed in the **Sprite Editor**.



Feature selected



Elements in the **Sprite Editor**

5. Select one of the elements, to set a **Switch** to the feature.



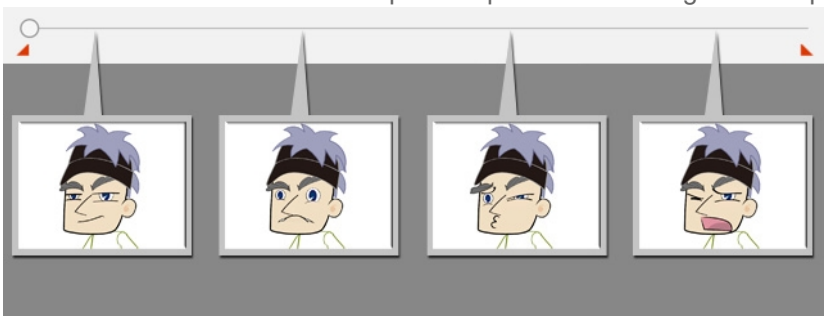
6. Select another feature and repeat Step 4.



7. This way, different facial expressions can be easily composed.



8. Go to a different time frame and repeat the procedure to assign other expressions to the character.

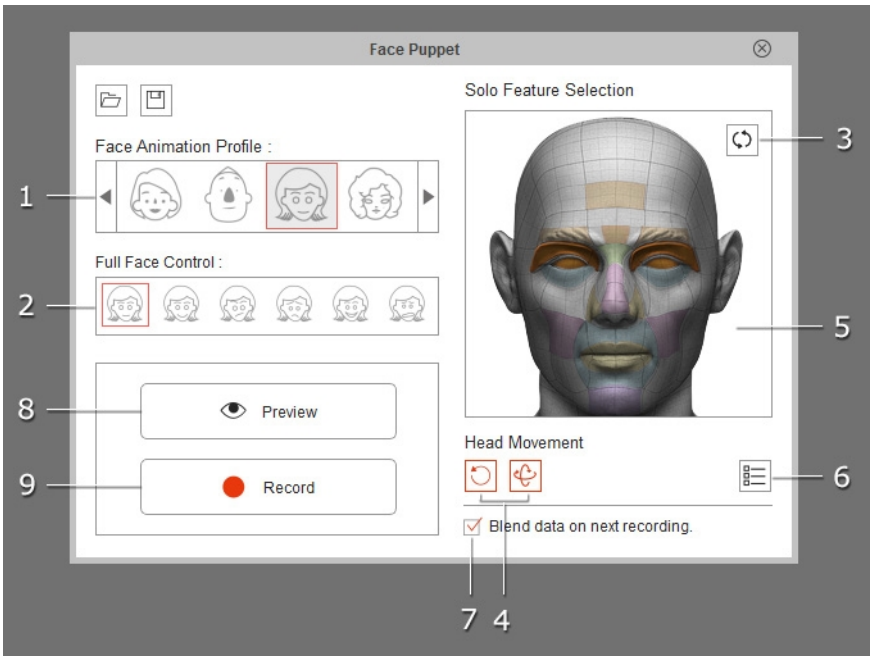


Using the Face Puppet Editor

CrazyTalk Animator combines facial animation with revolutionary, real-time puppeteering controls to empower users with easy-to-use facial expressions commands.

- Introducing the Face Puppet Editor
- Full Face Control Puppeteering
- Solo Feature Selection Puppeteering
- Multi-Layer Recording
- Recording Blinking
- Creating Custom Puppet Profiles

Introducing the Face Puppeteering Panel



1. Switch to Body Puppet	Click this button to switch the panel to body puppeteering.
2. Face Animation Profile	Select one of the built-in profiles from the list. Each profile contains various expressions.
3. Full Face Control	Select one of the expressions, with pre-defined weight settings, for varying facial features.
4. Clear Selection	Deselect any highlighted features.
5. Puppet Head	Select this to change the rotation/tilt of the head. The changes will automatically be converted into keys during recording.
6. Solo Feature Selection	Select to change any desired features. The changes will automatically be converted into keys during recording.
7. Advance Pro & Pipeline	Adjust the weight of a feature, in detail, with movements from your input device (Mouse by default). (**Pipeline** and **Pro** only)
8. Blend data on next recording	Activate this checkbox so that the new motions, of the selected features, are blended into existing keys after recording.
9. Preview (Space bar)	Click this button and then press the **Space bar** to preview the expressions triggered by your input device (Mouse by default). **Hotkey**: Space bar
10. Record (Ctrl + Enter)	Click this button and then press **Space bar** to start recording a motion clip. Keys will be automatically inserted into the timeline, when you move your mouse to drive motion expressions during the recording. **Hotkey**: Ctrl + Enter

Full Face Control Puppeteering

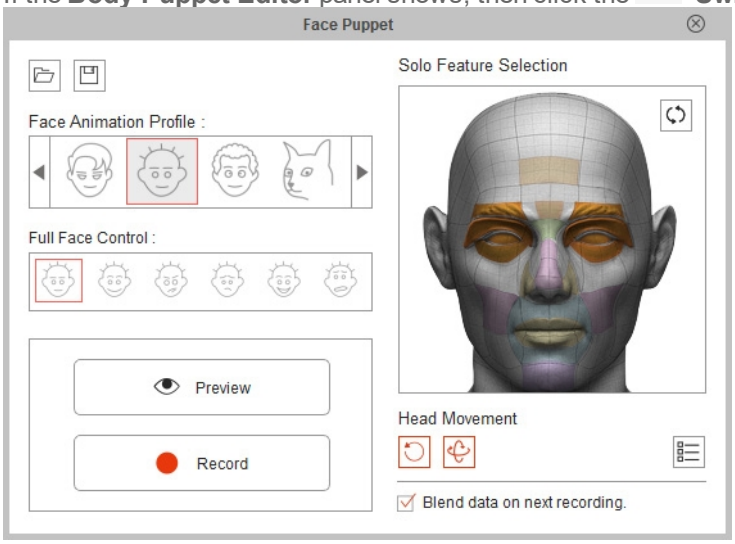
The **Full Face control Puppeteering** uses presets for puppeteering and recording expressions. If you are using a **Hybrid Head**, then it is highly recommended that you use the Solo Feature Selection Puppeteering method to create facial expressions.

1. Select a character and click the **Puppet Editor** button.

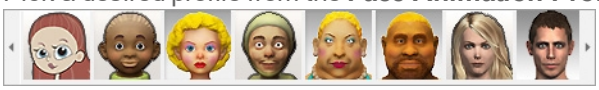

Morph-based face


Sprite-based face

2. If the **Body Puppet Editor** panel shows, then click the **Switch to Face Puppet** button.



3. Pick a desired profile from the **Face Animation Profile** list.

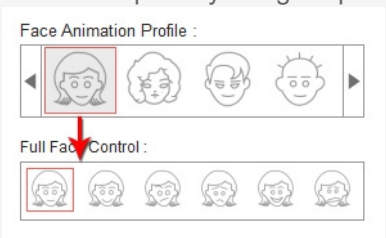


4. Choose a preset in the **Full Face Control** list.

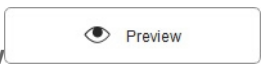


Note:

- If you are using a sprite-based face, then it is highly recommended that you select the **Comic** profile in order to use the specially designed presets for sprite-based faces.



- You may notice that some features in the **Solo Feature Selection** pane are highlighted automatically.

5. Press the **Space Bar** to start previewing. (Or click the **Preview** 

button and press the **Space bar**)
The mouse interactive area covers the entire screen.

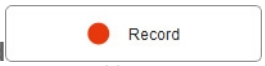
6. Move your mouse to puppet. The selected face will be triggered to move with the mouse cursor. Press the **Space bar** again to stop previewing.



Mouse cursor moves to the top right



Mouse cursor moves to the bottom right

7. Click the **Record** 

button and press the **Space bar** (or press the **Ctrl + Enter**) to start recording the motion as puppeteered by your mouse.
8. Once the recording stops, a clip with all the recorded expressions will be stored in the **Facial Clip Track** of the character.

Note:

- Click the **Play** button on the play bar to view the puppeteering recording results.



Solo Feature Selection Puppeteering

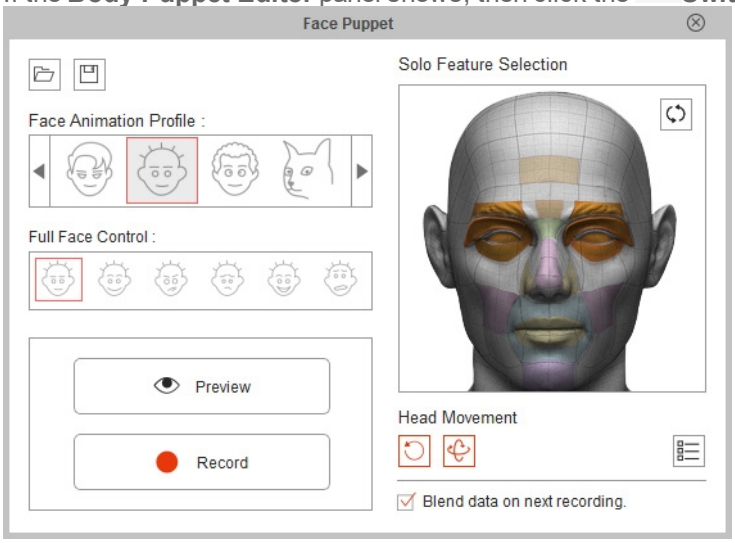
When you do not wish to use puppeteering presets, and you wish to record the expressions of a single facial feature, then you can use the **Solo Feature Selection** pane for puppeteering.

1. Select a character and click the **Puppet Editor** button.

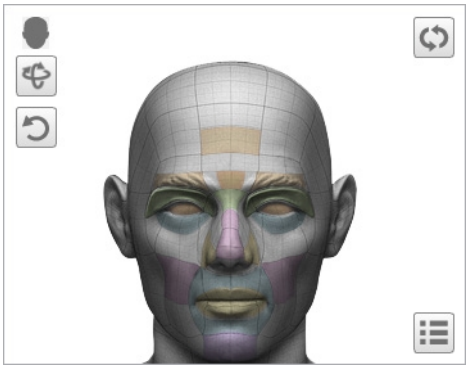

Morph-based face


Sprite-based face

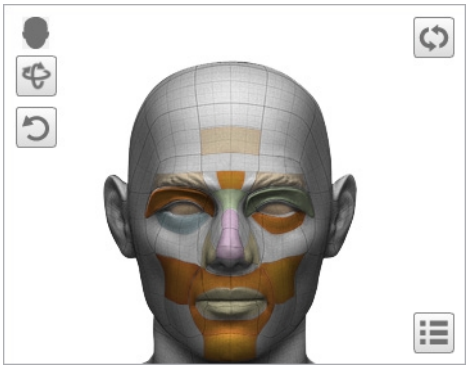
2. If the **Body Puppet Editor** panel shows, then click the **Switch to Face Puppet** button.



3. Click the **Clear Selection** button.
All the selected features will be deselected.



4. Pick the desired facial features from the **Solo Feature Selection** pane.

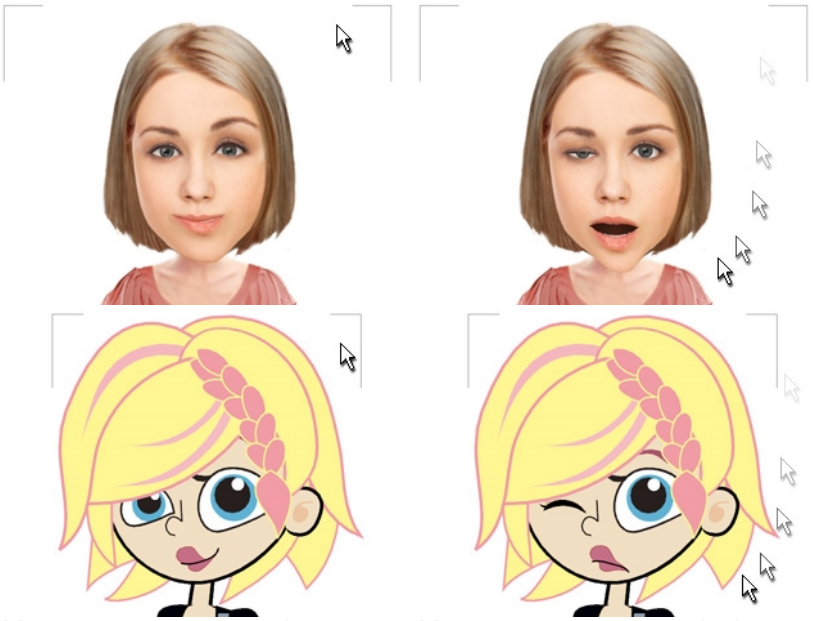


Note:

- You may optionally select the Head features to be recorded as well.

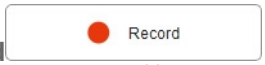
5. Press the **Space Bar** to start previewing. (or click the **Preview** 

button and press the **Space bar**)
The mouse interactive area covers the entire screen.
6. Move your mouse in order to puppet. The selected face will be triggered to move with the mouse cursor. Press the **Space bar** again to stop previewing.



Mouse cursor moves to the top right

Mouse cursor moves to the bottom right

7. Click the **Record** 

button and press the **Space bar** (Or press the **Ctrl + Enter**) to start recording the motion as puppeteered by your mouse.
8. Once the recording stops, a clip with all the recorded expressions will be stored in the **Facial Clip Track** of this character.

Note:

- Click the **Play** button on the play bar to view the puppeteering recording results.



Solo Feature Selection Puppeteering for Hybrid Head

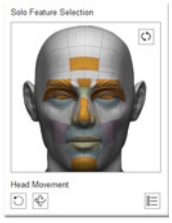
If you are using a hybrid head (Jib jab head for example), and you puppeteer to create expressions with the full face control, then facial muscles around the sprite-based facial features may cause strange visual artifacts to appear.



Distorted artifact.

Deselect all the facial muscles around the sprite-based facial features (except the jaw in this case) and continue puppeteering.





Deselect the muscles around the sprite.

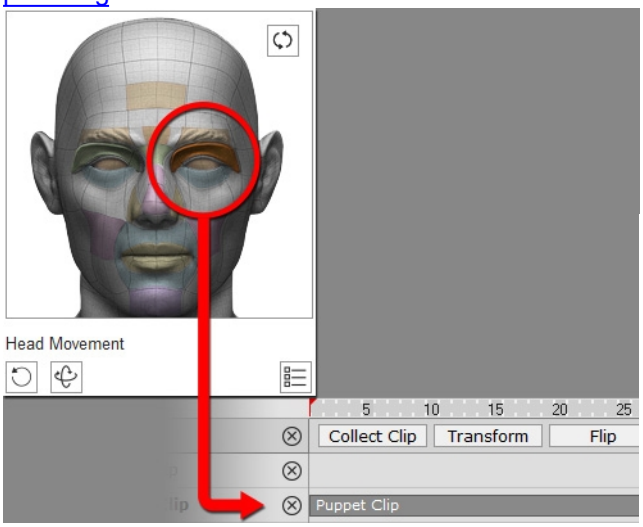
Multi-Layer Recording

When you follow the instructions in the Solo Feature Selection Puppeteering section, then you are generating a facial clip expression at one time. However, you may also apply the multi-layer recording method to record the feature motions individually.

1. Launch the **Face Puppet Editor**.
2. Make sure that the **Blend data on next recording** is activated in order to perform the multi-layer recording.
3. Go to a time frame when you want to start puppeteering.



4. Select one feature and record the puppeteering result as a clip. Please refer to the Solo Feature Selection Puppeteering section for more information.

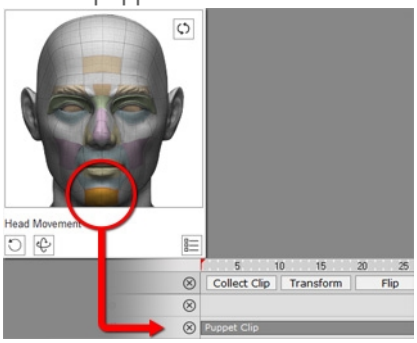




5. Go to the time frame specified in step 2.



6. Click the **Clear Selection** button and select another facial feature in the pane.
7. Start to puppet and record the motion of this selected facial feature.



8. When you stop recording, the motion of the selected feature will be layered into the previous facial motion clip.

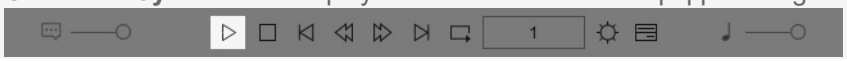


9. Repeat Steps 4 to 7 until you are satisfied with the model's expression results. Each recording will blend, layer by layer, the effects to the motion clip.



Note:

- Click the **Play** button on the play bar to view the recorded puppeteering results.



Recording Blinking

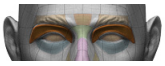
Instead of modifying the keys in the **Face** track, you may choose to record eye blinking directly in the motion clips.

Mouse Clicking During Recording

1. Following features can be used to control blinking.

Blink Both Eyes

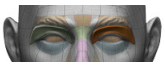




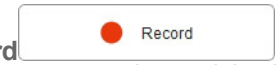
Blink Left Eye



Blink Right Eye



2. Click the **Preview** 

button and press the **Space bar** to start previewing.
3. Click your left-mouse button to blink accordingly.
4. Click the **Record** 

button and press the **Space bar** to start recording, press your mouse button whenever you want the model to blink.
5. The blinking of the eyes will be blended into the motion clip once the recording finishes.

Dragging for Blinking Speed and Duration

If you do not want the character to blink quickly, then you may use the dragging method to decide the time length for blinks.

1. Select the same facial feature as described above.
2. Start to preview or record.
3. Drag in the dummy pane, up or down, to decide the time length for the eyes to blink. You may fully control the eye-lids.



Drag to half close



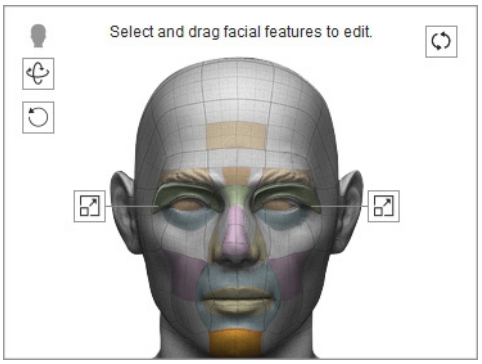
Drag to full close

Creating Custom Puppet Profiles

Pro & Pipeline

You can create a unique puppet profile or modify existing profiles with the **Advanced Puppet Settings**. You may need to manually adjust the weight of each feature in order to customize your own puppet control profile.

1. Click the **Clear Selection** button to deselect all features.
2. Pick the desired features in the **Solo Feature Selection** pane.



3. Click the **Advance Puppet Settings** button to expand the weight pane.
4. Modify the values in the **Weight** column, of the corresponding feature, to specify the weight movements triggered by your input device (mouse).

Facial	Feature	Weight
Face	Inner and Outer Brows	0
	Brows	0
	Brow Right	0
	Brow Left	0
	Eyes Blink	0
	Eye Blink Right	0
	Eye Blink Left	0
	Lid Drop Right	0
	Lid Drop Left	0
	Nose Scrunch	0
	Nose Flank Right	0
	Nose Flank Raise Left	0
	Droop/Raise Lip	0
	Lips Zipped Tight	0
	Cheek Right	0
	Cheek Left	0
	Jaw	100
Eyes	Right X	0
	Right Y	0
	Left X	0
	Left Y	0
Head	Vertical Rotation	0
	Horizontal Rotation	0
	Head Tilting	0

5. Click the Preview **Preview** button, press the **Space bar**, and move your input device (mouse by default) to preview the movements of the selected features.
6. Repeat Steps 3 and 4 until you obtain satisfying results.

Using the Face Key Editor

CrazyTalk Animator integrates various key-editing panels into one single **Face Key Editor**. Use it to add/modify keys for **Face**, **Head**, and **Eyes** tracks.

- Introducing the Face Key Editor
- Setting the Head Keys
- Setting the Face Keys
- Setting the Eye Keys
- Setting Default Key

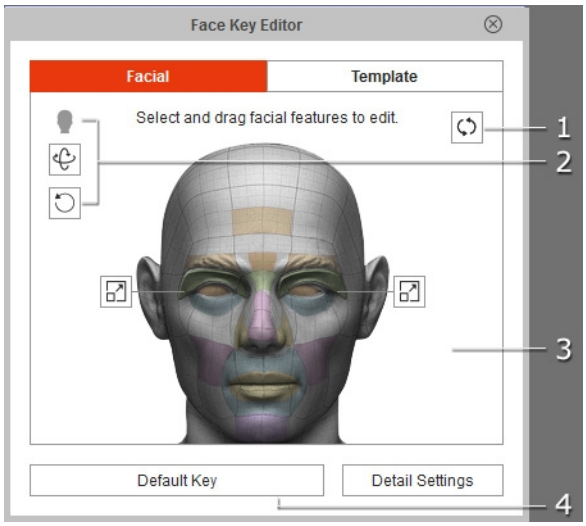
Bringing up the Key Editor

The face Key editor facilitates setting or modifying keys in the **Head**, **Face** or **Eyes** tracks by using a more intuitive and interactive interface. To bring up the **Face Key Editor**, you may:

- Click the **2D Motion Key Editor** button. If it shows the **Body Key Editor**, then click the **Switch to 2D Face Key Editor** button.
- Double-click on the desired key in the **Head**, **Face** or **Eyes** tracks to edit the existing key.
- Double-click anywhere in the **Head**, **Face** or **Eyes** tracks to initiate a new key.

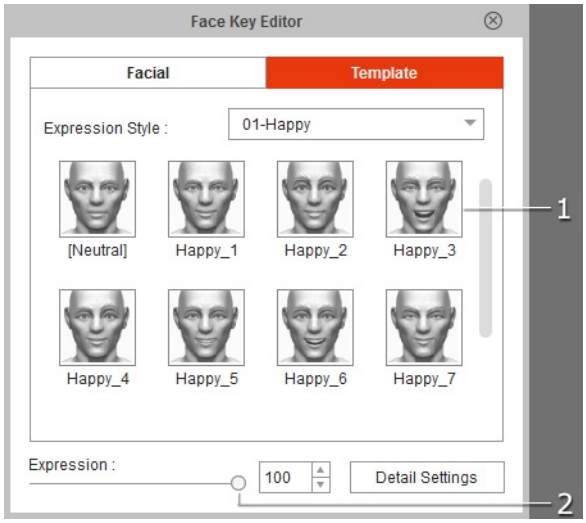
The **Face Key Editor** is divided into three tabs: **Facial**, **Template** and **Modify**.

Facial Tab



1. **Clear Selection** — Deselect all features.
2. **Add/Modify Head Key** — Select to rotate / tilt the head.
3. **Solo Feature Selection** — Select to highlight the desired features and convert the changes into keys.
4. **Default Key** — Click to set keys and neutralizes all adjustments made to facial features.

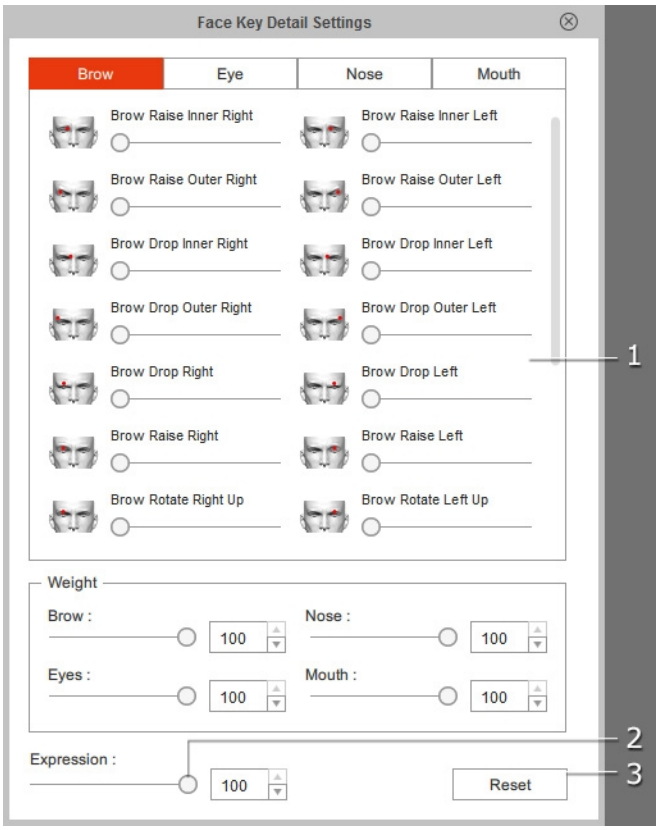
Template Tab



1. **Expression Style** — Use the drop-down list to switch to a different expression template library.
2. **Expression** — Drag the slider to decide the strength of the applied expression template.

Modify Tab Pro & Pipeline

*Please note that this feature is for the **Pipeline** and **Pro** versions only.



1. **Solo Feature Strength** Drag the sliders in this pane to set a key to the individual facial offset features.
2. **Expression** Drag the slider to decide the strength of the applied expression template.
3. **Reset** Click this button to reset the sliders to their initial status.

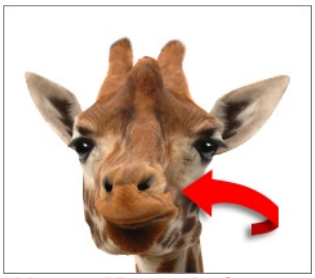
Setting the Head Keys

Using the **Face Key Editor**, you can also set or modify the rotation/tilt keys of the character head.

Including the Rotation Status into a Key

1. Select the **Head Orientation** button in the pane.
2. If you are using the mouse as your input device, then press and hold the left-mouse button inside the facial feature pane.
3. Move the mouse around, and the model will rotate its head to match the mouse movement. A head key will automatically be set.


Initial View


Mouse Moves Left

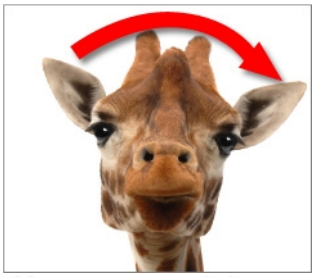

Mouse Moves Right

Including the Tilt Status into a Key

1. Select the **Head Tilting** button in the pane.
2. If you are using the mouse as your input device, then press and hold the left-mouse button inside the facial feature pane.
3. Move the mouse left and right to tilt the model's head accordingly. A head key will automatically be set.

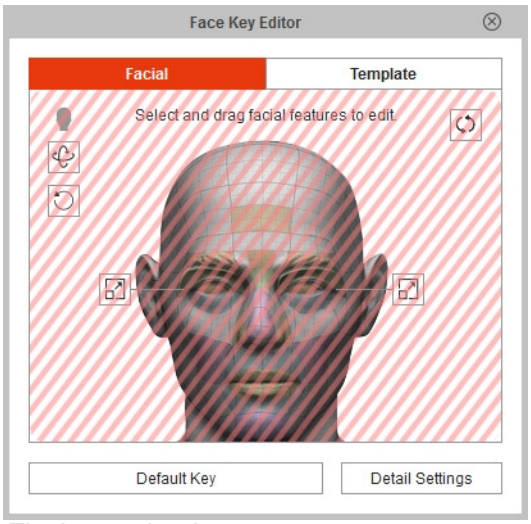

Initial View


Mouse moves left


Mouse moves right

Using the Facial Tab

1. Select the desired facial features to set keys in the pane.
2. If you are using the mouse as your input device, then press and hold the left-mouse button inside the interactive area.



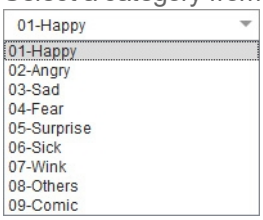
The Interactive Area

3. Drag the mouse in the interactive area to make the changes.

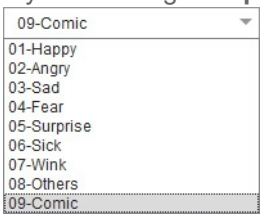
Using the Template Tab

If you do not want to set an expression, one facial feature at a time; then it is recommended that you use templates. Especially for **Sprite-based** faces.

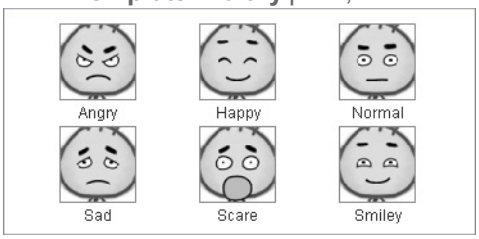
1. Switch to the **Template** tab.
2. Select a category from the **Expression Style** drop-down list.



3. If you are using the **Sprite-Based** face, then you may also select the **Comic** category.



4. In the **Template Library** pane, click on the desired template.

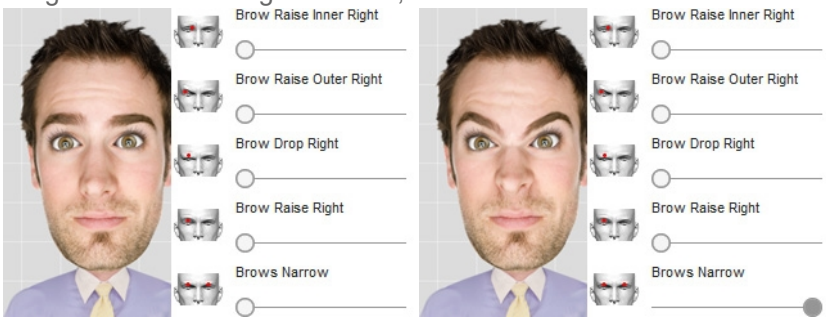


5. Change the **Expression** values to adjust the strength of the applied expression.

Using the Modify Tab Pro & Pipeline

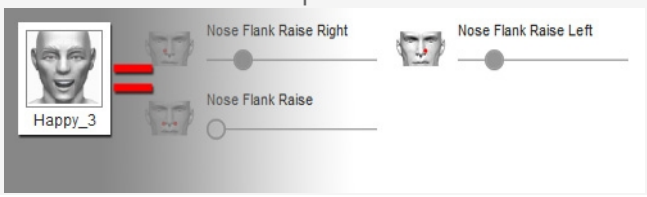
If you use the **Facial** tab to set facial keys, then you are actually modifying the values of each slider in the **Modify** tab. Therefore, you can use the sliders inside of this tab to fine-tune the values for each facial feature.

1. Switch to the **Modify** tab.
2. Drag the slider to change the value, the selected character will then change the facial expression accordingly.



Note:

- Please note that each template is a combination of different values from the facial feature sliders.



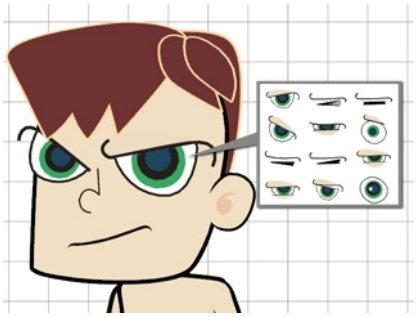
Face Keys and Sprite-based Heads

Pro & Pipeline

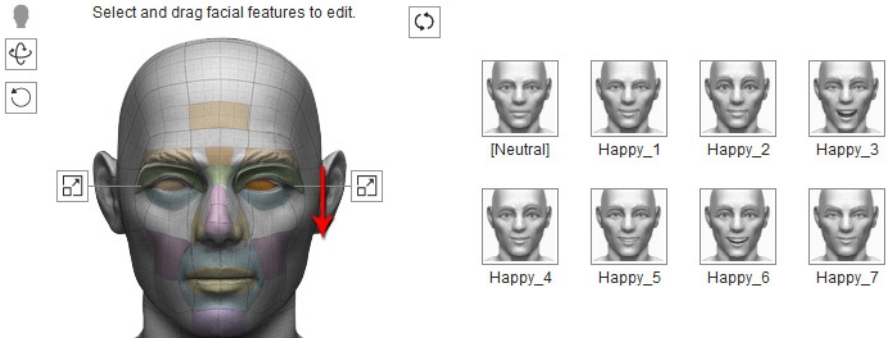
In the Face Keys settings section, whenever you make a change a key will be added to the **Face Track**. This will cause the character's facial muscles to react accordingly.

Sprite-based heads have no muscles on the face, so how do they react to face keys?

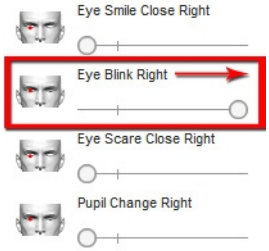
A built-in face feature template is actually a sprite that contains one or more elements. For example, one of the eyes contains multiple images that represent the different expressions within the eye.



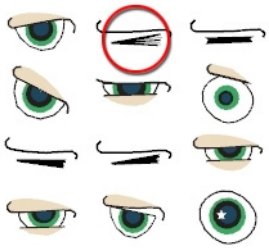
When you select the solo feature (eyelid for example) in the **Facial** tab and drag downwards, or apply any one template from the **Template** tab:



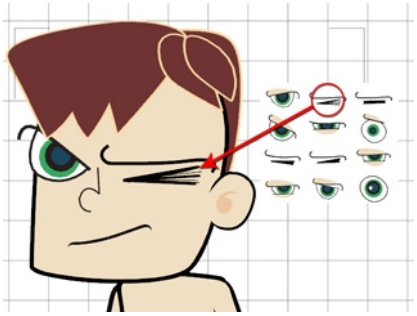
1. You are actually changing the slider values in the **Modify** tab.



2. **CrazyTalk Animator** then receives the value.
3. It searches the element list of the facial feature to find if any element maps the value.



4. Once it finds the media that maps to the value, then it retrieves the media from the list and replaces the original element.



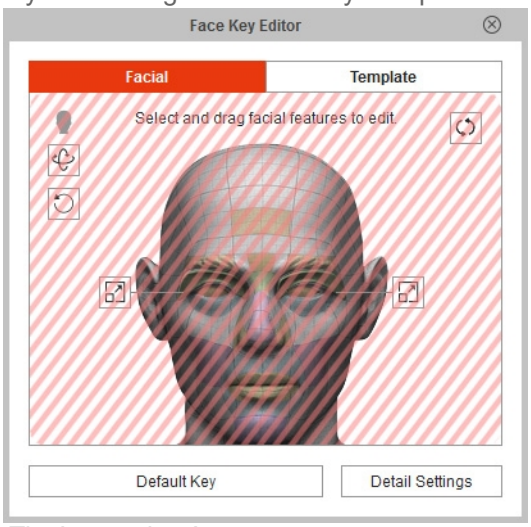
Setting the Eye Keys

Any **CrazyTalk Animator** actor can roll its eyes with facial animations, which is pretty cool and can contribute to a number of realistic expressions. By changing the size of the eyeballs, the facial expression can become more dramatic.

1. Select the **Eyes** in the pane.

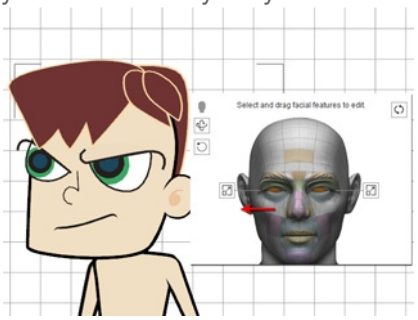


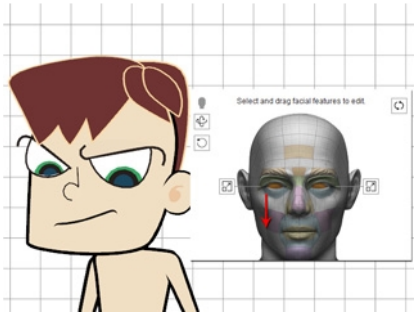
2. If you are using the mouse as your input device, then press and hold the left-mouse button inside the interactive area.



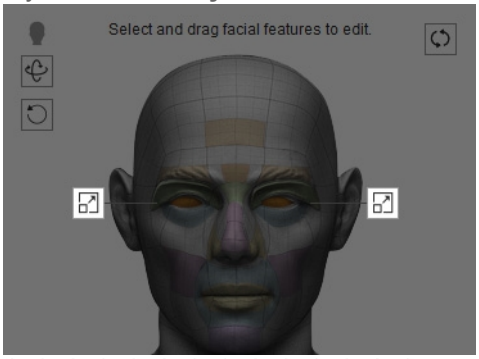
The Interactive Area

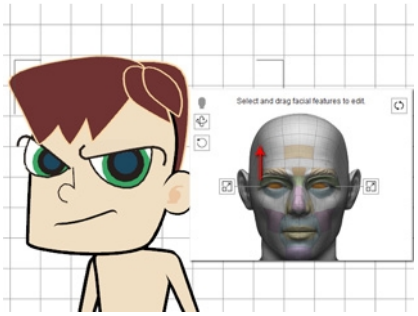
3. Drag the mouse outside the interactive area to make the changes. The character's eyes will start to move along with your mouse. An eye key will automatically be set.

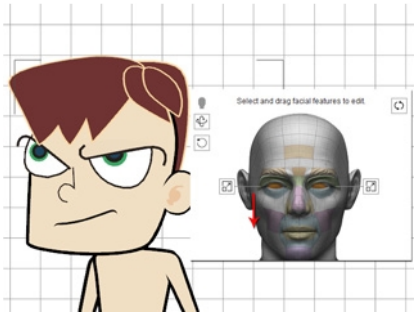




4. If you select the **Eye Scale** buttons beside the eyes, you can increase or decrease the size of the eyeballs.

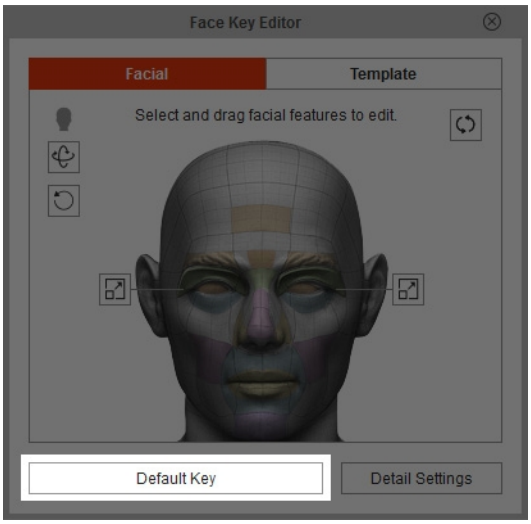






Setting the Default Key

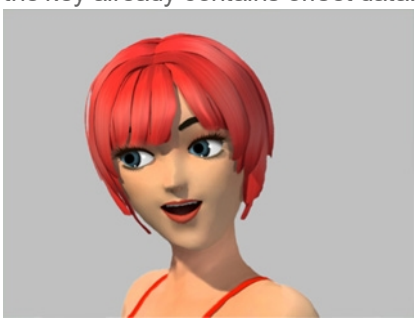
The **Default Key** helps you retrieve the neutral status of all facial features in a model. You may use it to set neutral keys to all facial features or to retrieve the initial status of them.



Setting Default Key

Each time you want to remove all facial expressions and go back to the neutral expression state, or when you want to remove the transformation keys (rotation, location, scale) and go back to the initial status, then follow the steps below:

1. Double-click on the desired **Face** key (in the timeline) to bring up the **Face Key Editor** panel. Please note that the key already contains offset data.



2. Select any feature in the **Face Key Editor** and drag in the interactive area to modify the model's features.



3. Click the **Default Key** button and the offset data will be cleared. The model will then turn back to its neutral appearance and the original key will be replaced by a neutral one.



Note:

- The **Default Key** feature neutralizes the keys in the **Head**, **Face** and **Eye** tracks inside the current frame.

Utilizing the Action Menu for Expressions

CrazyTalk Animator provides a feature for you to embed expressions into any character. Just use the right-click menu to command the character to act any facial expression. The character can then be saved along with all the action commands.

Using the Action Menu for Expressions

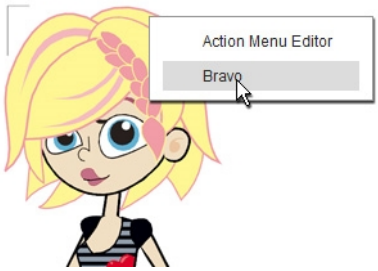
1. Select a character containing an action menu with facial expressions.



2. Click the **Action Menu** button. You will see a menu pop up.



3. Select any command except the **Action Menu Editor**.



4. The character will then start the expression command.



See Also:

- Applying an Action Menu from the Library
- Defining a Custom Action Menu
- Collecting Expressions or Motion Clips

Applying an Action Menu from the Library

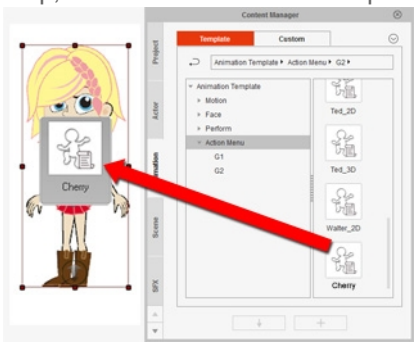
The easiest way to embed an action menu to a character is through the **Content Manager**. You may apply, command and then re-apply another template to have the character command various expressions, or motions, with a couple of mouse clicks.

Applying an Action Menu

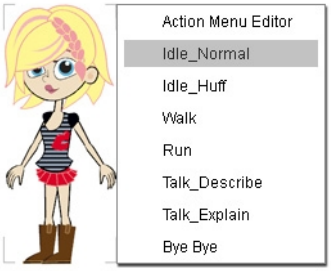
1. Select a character in the **Stage Mode**.
2. Click the **Action Menu** button. You will only see the **Action Menu Editor**, in the working area.



3. Go to the **Action Menu** content folder in the **Animation** tab of the **Content Manager**. Double click, or drag and drop, a desired action menu template from the library.



4. Click the **Action Menu** button.
5. You will see all the commands compacted in the template. Pick one command and the actor will start performing accordingly.

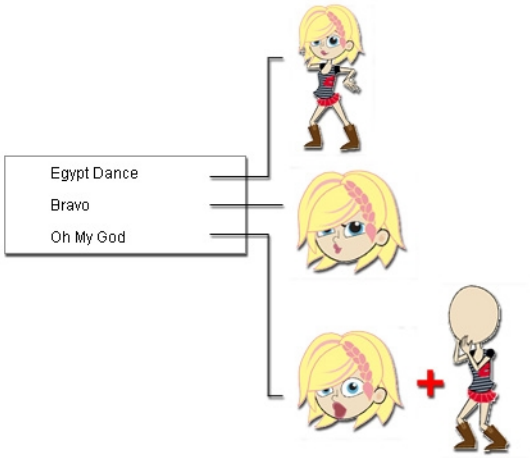


Defining a Custom Action Menu

Instead of applying action menus from the **Content Manager**, you can also define your own custom action menus.

What can be Stored in an Action Menu?

An action menu can contain commands for **Body Motions**, **Facial Expressions** and even **Perform** files (A perform file consists of expressions and motions).



Add Commands into Action Menu

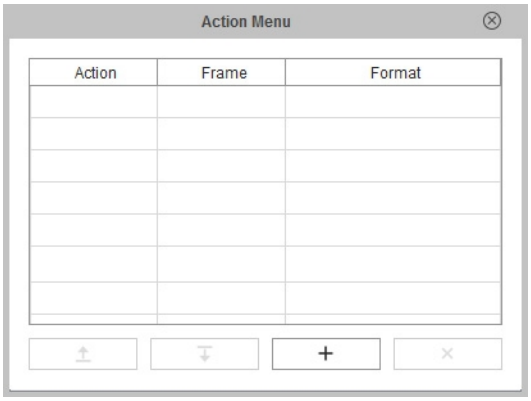
1. Select a character in the **Stage Mode**.



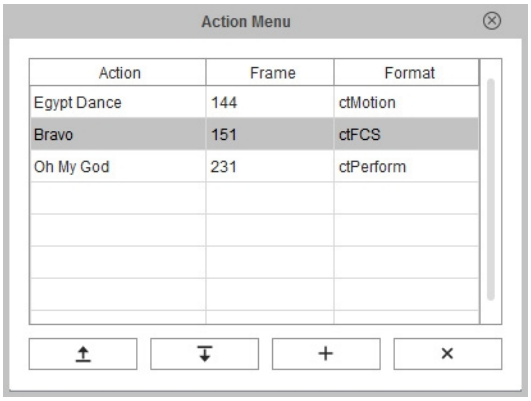
2. Click the **Action Menu** button on the left-side tool bar. Alternatively, you may right-click on the character and select the **Action Menu** on the right-click menu.
3. You will see **Action Menu Editor** in the working area. Click it.



4. Click the **Add Motion** button in the **Action Menu** panel. It is empty by default.



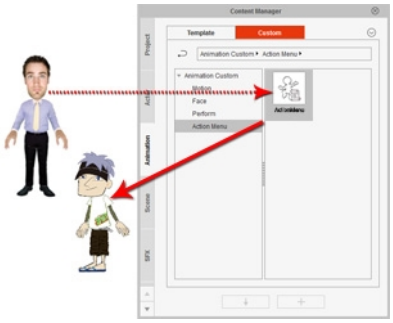
5. Browse to the template folder of **CrazyTalk Animator**.
   The path of the template folder is:
   XP: C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator2 Template\
   Win 7: C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator2 Template\
6. Load any template file from the **Face**, **Motion** or **Perform** folder. The formats supported are ***.ctFcs**, ***.ctMotion**, ***.ct3DMotion** and ***.ctPerform**.



7. Optionally repeat Step 2 to 5 until all the desired motions or facial expressions are added into the menu as a command.



8. Save this custom **Action Menu** into the **Custom Library** for re-use on any other characters.



Note:

- If you have created expressions, motions or perform files by Collecting Expressions or Motion Clips, then you are also allowed to load and convert them into new commands.

Pro & Pipeline

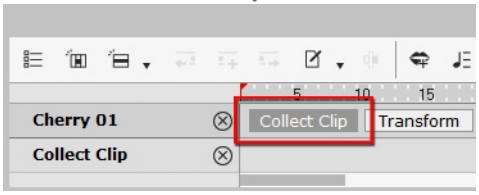
Collecting Clips for a Character

In addition to using the templates from the **Content Manager**, you are also allowed to make custom clips, to apply to any character, or define the clip as one of the commands in the action menu.
*Please note that this feature is for the **Pipeline** and **Pro** versions only.

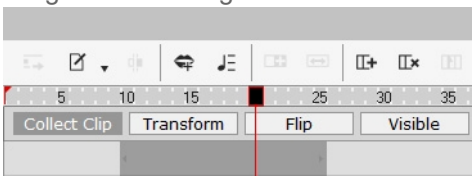
1. Select a character that already has expressions and motions.



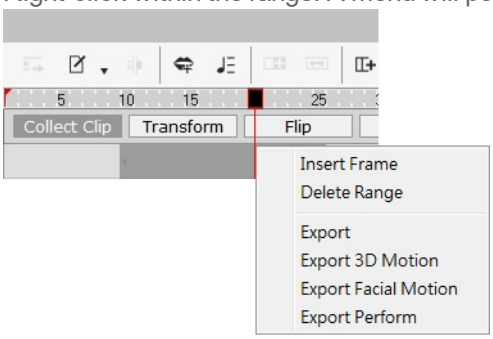
2. Click the **Show Timeline** button (Hotkey: F3).
3. Press the **Collect Clip** button down to show its track.



4. Drag to make a range to collect the current motions or expressions into a clip.



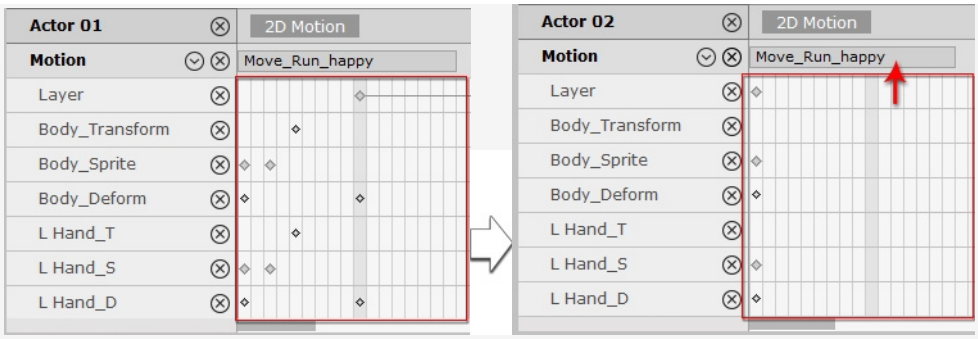
5. Right-click within the range. A menu will pop up.



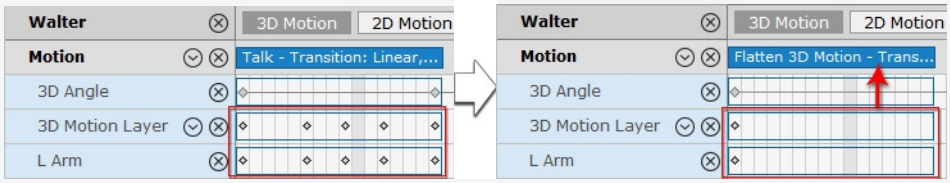
- **Export**: Merge and export all the keys and clips in the **Sub-tracks** (under the **Motion** main track) within the range as a *.ctMotion file.
- **Export 3D Motion**: Merge and export all the keys and clips in the **Motion** track and **Sub-tracks** (under the **3D Motion Layer** track) within the range as a *.ct3DMotion file.
- **Export Facial Motion**: Merge and export all the keys and clips in the **Face Motion** track and **Sub-tracks** (under the **Face Motion** main track) within the range as a *.ctFCS file.
- **Export Perform**: Merge and export all the keys and clips in the **Motion**, **Face Motion** track and **Sub-tracks** (under the **Motion** and **Face Motion** tracks) within the range as a *.ctPerform file.

Note:

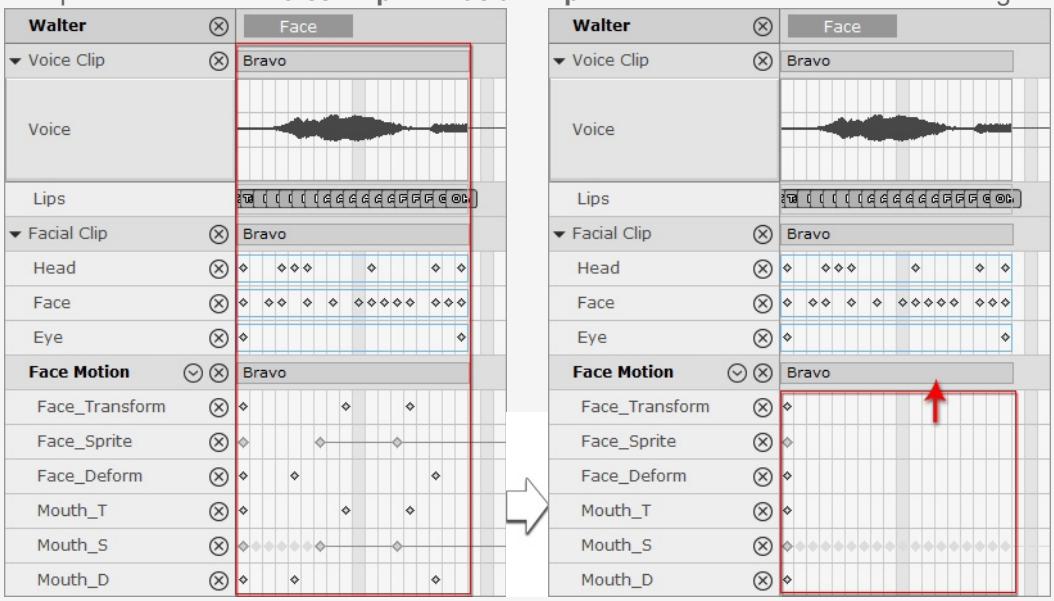
- After you once again import the exported 2D motion clip (*.ctMotion), you will find that all the keys have been flattened into a single clip.



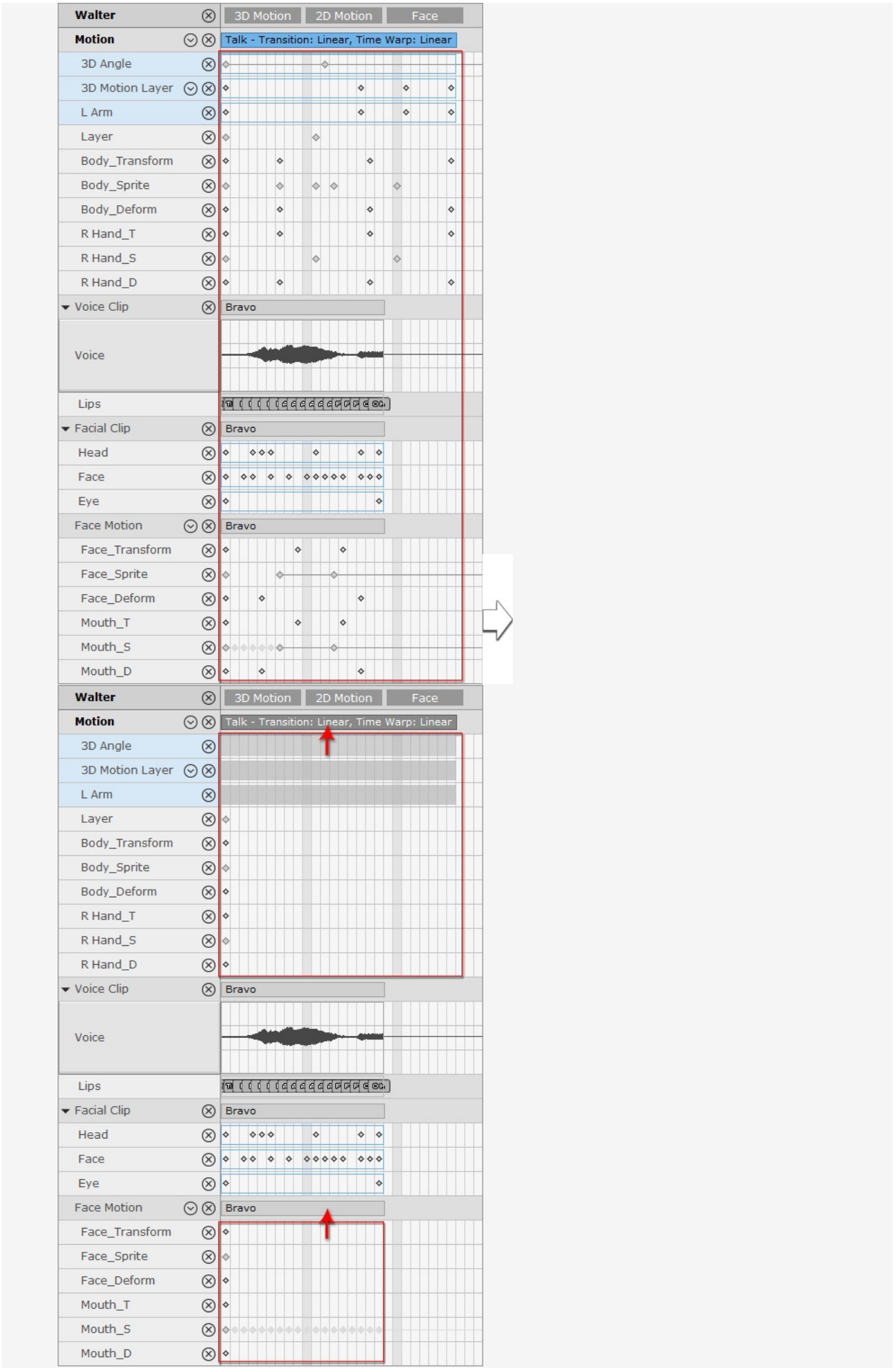
- After you once again import the exported 3D motion clip (*.ct3DMotion), you will find that all the keys (Angle keys excluded) have been flattened into a single clip.



- After you once again import the exported facial motion clip (*.ctFCS), you will find that all the keys except for those in the **Voice Clip** and **Facial Clip** tracks have been flattened into a single clip.



- After you once again import the exported Perform clip (*.ctPerform), you will find that all the keys except for those in the **Voice Clip** and **Facial Clip** tracks have been flattened into a single clip under the **Motion** and **Face Motion** main tracks respectively.


Walter
3D Motion
2D Motion
Face
Motion
Talk - Transition: Linear, Time Warp: Linear
3D Angle
3D Motion Layer
L Arm
Layer
Body_Transform
Body_Sprite
Body_Deform
R Hand_T
R Hand_S
R Hand_D
Voice Clip
Bravo
Voice
Lips
Facial Clip
Bravo
Head
Face
Eye
Face Motion
Bravo
Face_Transform
Face_Sprite
Face_Deform
Mouth_T
Mouth_S
Mouth_D
Walter
3D Motion
2D Motion
Face
Motion
Talk - Transition: Linear, Time Warp: Linear
3D Angle
3D Motion Layer
L Arm
Layer
Body_Transform
Body_Sprite
Body_Deform
R Hand_T
R Hand_S
R Hand_D
Voice Clip
Bravo
Voice
Lips
Facial Clip
Bravo
Head
Face
Eye
Face Motion
Bravo
Face_Transform
Face_Sprite
Face_Deform
Mouth_T
Mouth_S
Mouth_D

- You may use the custom clip files with the following methods:
  - Drag and drop the file onto a target character.
  - Defining Custom Action Menu

Collecting Clips for Props

If you create a prop (containing single or multiple sprites) with animations, and you want to export the animation, then follow the steps below:

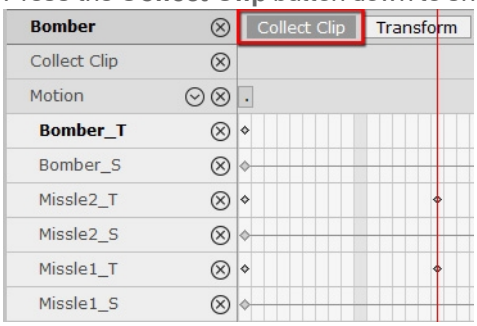
Note:

Collecting Clip only collect the data from the **Transform**, **Deform**, **Sprite Switch** and **Opacity** track, the data in the **Transform** track will not be collected.

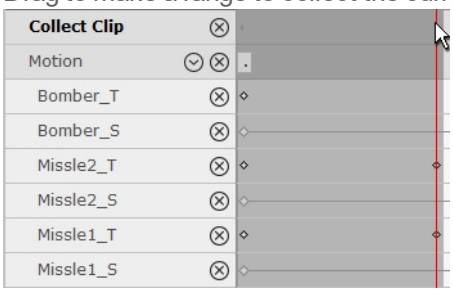
1. Select a prop (Multiple sprites) with **Sprite Transform** or **Sprite Switch** animations.



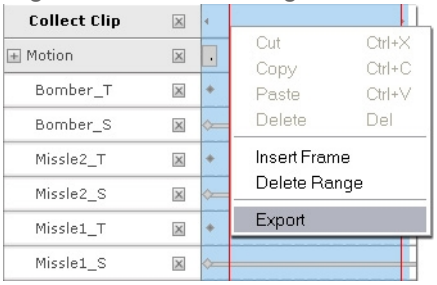
2. Click the **Show Timeline** button (Hotkey: F3).
3. Press the **Collect Clip** button down to show its track.



4. Drag to make a range to collect the current animations into a clip.



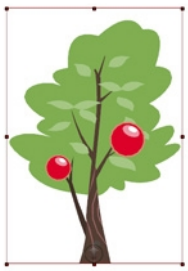
5. Right click within the range and select **Export**. Save it as an animation file (*.ctAnim)



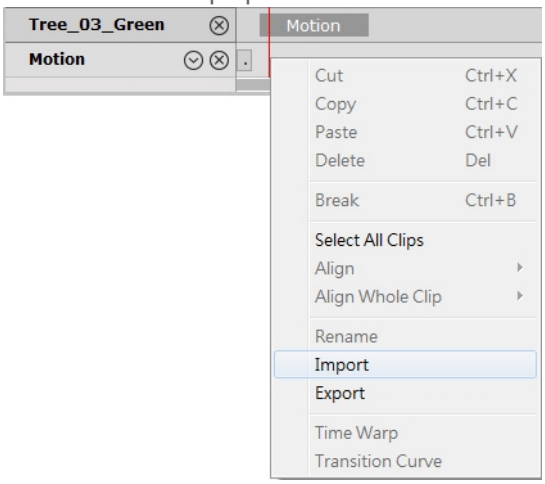
Applying Animations to Props

If you have exported the animation of a prop, then you may apply this animation to any other props.

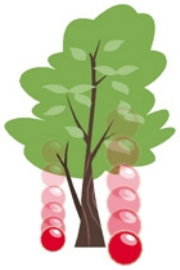
1. Select a new prop.



2. Right-click on where you want the motion to start in the prop's **Motion** track, and select **Import** to load the animation into the new prop.



3. The new prop will then start the animation.



Eight Ways to Generating Body Movements

There are eight main methods to generating body movements for a character.

- Body Movements from the Library
- Using 3D Motion Key Editor
- Using the Sprite Editor to Switch Hand Gestures
- Runtime Setting up Pose-Switching Animations
- Using the Body Puppeteering Panel
- Using the Body Key Editor
- Utilizing the Action Menu for Body Motion
- Using Motion Key Editor for G3 Free Bone Character

Body Movements from the Library

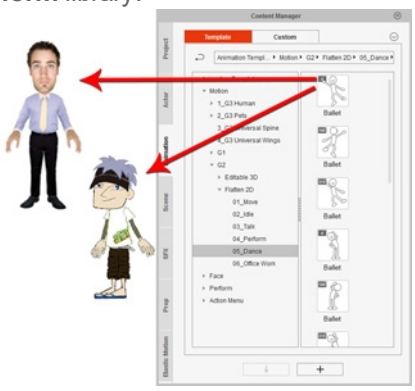
The easiest way to have a character move is to apply templates from the **Content Manager**. To do this, simply go to the **Animation** tab in the **Content Manager**.

Templates Containing Body Motions

You may apply body motions from the templates found in the library list:

- Motion
- Perform
- Action Menu

1. Select a character.
2. Double-click on the desired template (or drag and drop the template onto the character) from the **Motion** or **Perform** library.



3. The character will then act out the animation.



Note:

- The **Motion** content library is divided into two main categories: **3D Motions** (dimensional) and **2D Motions** (flat). Please refer to the Using Character Motions section to distinguish the various thumbnails of these motions.
- Each template, in the **Perform** libraries, contains **Motion** and **Face** (voice and expression) data. Applying a template of this type will have the character perform and speak with expressions on its face.
- To use the **Action Menu** templates, please refer to the Utilizing the Action Menu for Body Motion section for more information.

Looping Motion Clips

If you wish to loop a motion, but do not want to open the timeline, then you may use the method below:

1. Select a character.
2. Go to the **Motion** or **Perform** content folders in the **Animation** tab of the **Content Manager**.
3. Apply the desired template. The character then starts to act the motion.
4. Wait until the play back auto-stops, then apply the same template again.
5. Repeat Step 3 and 4 to loop the motion.

Note:

- Please refer to the Speed and Loop section for more information.

Using 3D Motion Key Editor

Pro & Pipeline

CrazyTalk Animator meets the highest standards of human bone structure and motion editing systems. Using **HumanIK** as the core character engine allows your G2 characters to have intuitive real-time IK motion control while keeping a proper body balance. By using the **3D Motion Key Editor**, you may then take the advantage of the **HumanIK** and add/modify motion keys of all body parts of a character.

*Please note that this feature is for the **Pipeline** and **Pro** version only.

The **3D Motion Key Editor** has two main functions:

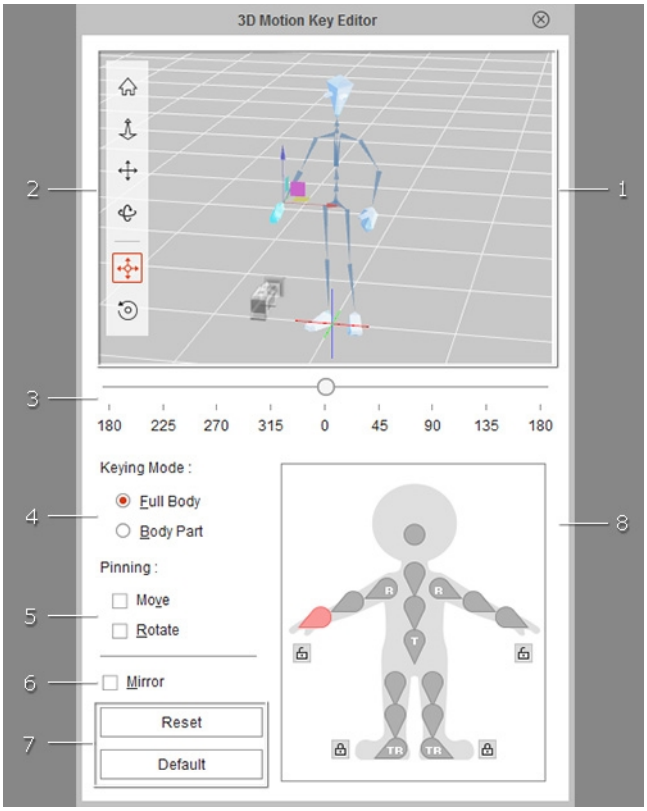
- Producing a Custom Pose or Key-frame Motion
- Layering Motion Layer Keys to Existing Motions

Please also refer to the sections below for more information:

- Introducing the 3D Motion Key Editor
- Locking Bones
- Fine Tuning the Motions with IK, FK
  - What is IK / FK?
  - How to Use IK?
  - How to Use FK?

Introducing the Edit Motion Layer Panel

Pro & Pipeline



1. 3D View The dummy in the 3D view displays the character's current 3D pose. You may **Double Click** on a body part to select it.

2. 3D Tool-bar The 3D tools in the bar can be used to control the direction of the 3D view and move or rotate the body part.

Camera Tools

- **Home**: Reset to the initial angle of the 3D view.
- **Zoom** (Mouse wheel or Alt + Right + Left-mouse-buttons drag in 3D view): Zoom in or out the 3D view.
- **Pan** (Alt + Drag in 3D view): Hover the 3D view around.
- **Rotate** (Alt + Right-mouse-button drag in 3D view): Rotate the 3D view around the dummy.

IK or FK Tools

- **Move** (**IK**): Move the selected body part (bone).
- **Rotate** (**FK**): Rotate the selected body part (bone).

3. Angle Slider Drag the slider to determine the angles of the G2 character. You can also add 3D angle keys by dragging to different angles in different times to turn the character.

4. Keying Mode You may choose the radio button to determine if the chain reaction applies to only the limbs or the entire body.

- **Full Body**: When you move any body part, it maybe drives the torso part to move along.

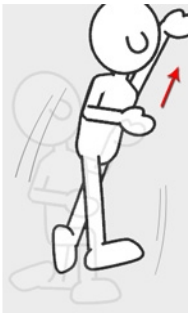
- **Body Part**: If you only want to move the limbs or head, then choose this radio button.



The original pose of the character.



Choose **Body Part** and drag the hand, only the limb is influenced.



Choose **Full Body** and drag the hand, the entire character can be influenced and moves along.

5. Pinning Status When you are editing a body part, the locking status of other ones can be defined in this section. Please refer to the Locking Bones section for more information.

6. Mirror Activate this box so that you may simultaneously adjust the same body parts from both sides.

7. Reset / Default Click these two buttons to retrieve pose. Please refer to the Setting Default Keys and Resetting Motion Layer Keys section for more information.

8. Dummy Pane Select one of the body parts to offset the corresponding bones.

Icons:

- : A selected body part. You may use it to lock the corresponding body part or move the body part to offset the corresponding body part.
- : A free body part. Auto-update the location and orientation of the corresponding body part when you are editing another body part.
- : A move-locked body part. It causes the corresponding body part not to move when you are editing another body part.
- : A rotate-locked body part. It causes the corresponding body part not to rotate when you are editing another body part.
- : A locked body part. It causes the corresponding body part not to move nor rotate when you are editing another body part.
- : A quick lock. Use it to quickly lock or unlock the T and R (←→) of the corresponding body part.

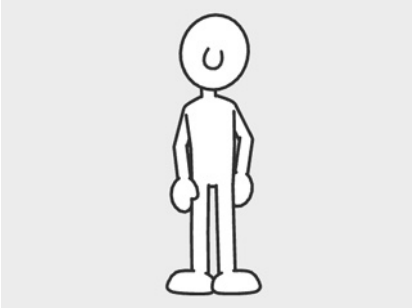
Please refer to the Locking Bones section for more information.

Pro & Pipeline

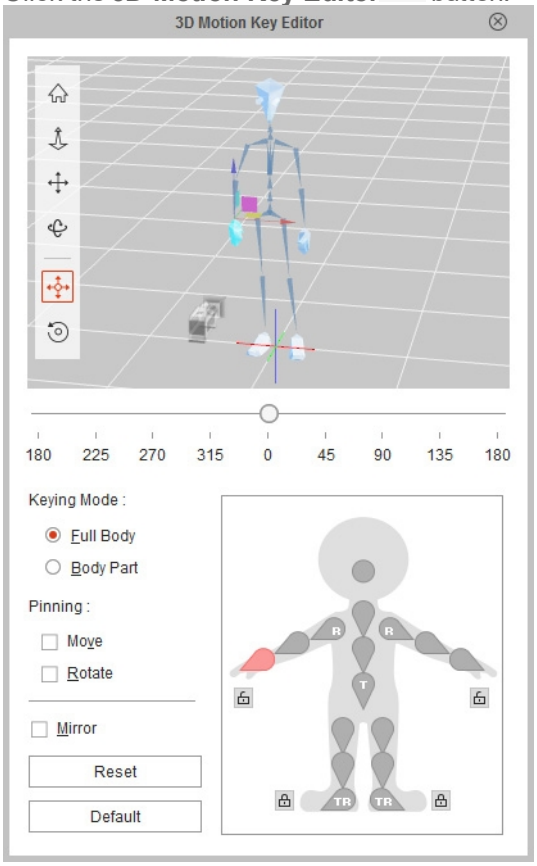
The **Key-frame Motion** is the traditional method to create motions for a character. You need to set different keys in different time frames. The interpolation between two keys, which is also called "transition", will also be auto-produced. It is time consuming and the animation may need to be fine-tuned, repeatedly.

Producing a Custom Pose

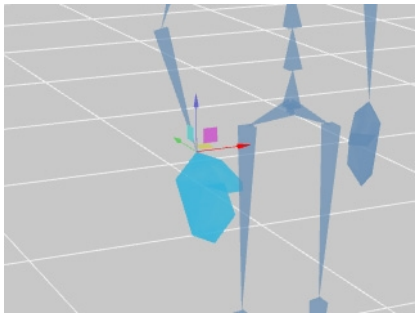
1. Apply a G2 character.

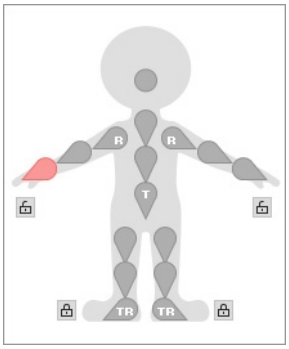


2. Click the **3D Motion Key Editor** button.



3. Select a body part by double clicking it on the dummy in the 3D view or by simply clicking it on the dummy graphic.

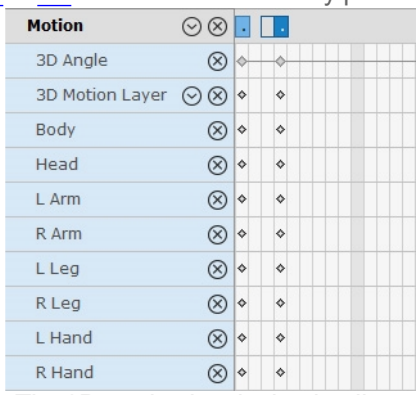




4. Set a motion key by editing different body parts with IK or FK methods in the dummy pane.



Set a 3D motion key to the character.



The 3D motion key in the timeline track.

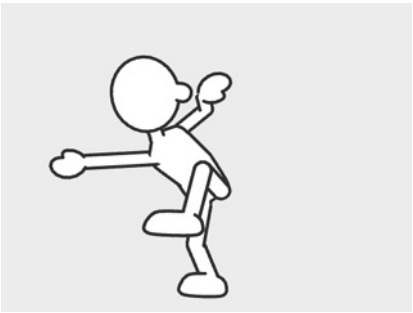
5. Optionally drag the angle slider to change the direction of the character.

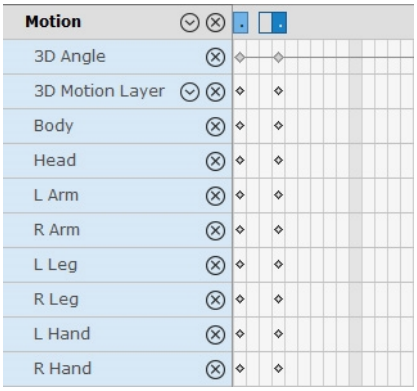


Producing a Key-frame Motion

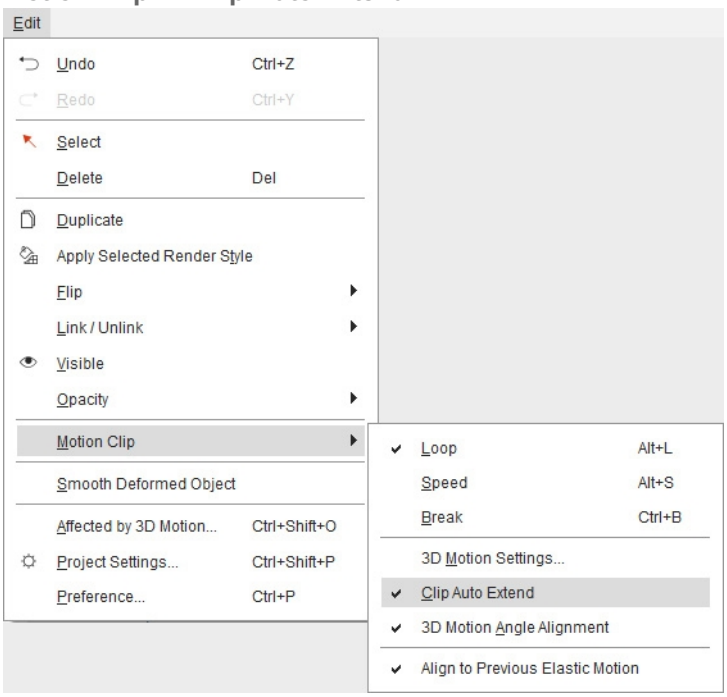
When you are familiar with the usage of setting one 3D motion layer key in a certain time frame, you can go to another time frame to set more keys, which can produce so-called key-frame motions. The transition between two keys will be auto-generated.

1. Set a pose in a time frame.

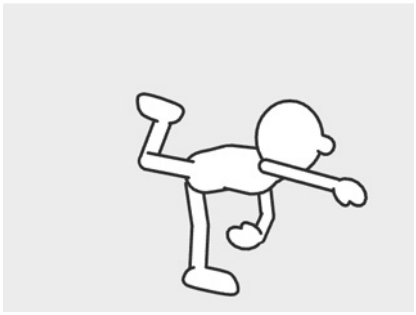




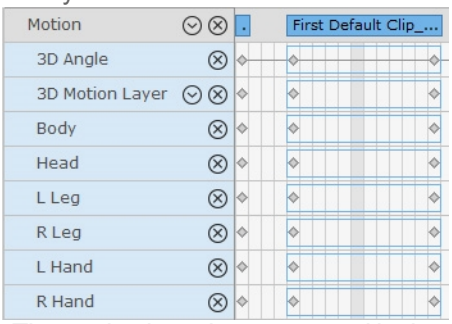
2. In order to auto-generate transitions between two manually set motion keys, you need to make sure the **Edit** >> **Motion Clip** >> **Clip Auto Extend** is activated.



3. Go to another time frames and set another 3D motion layer key.



Setting another motion layer key.



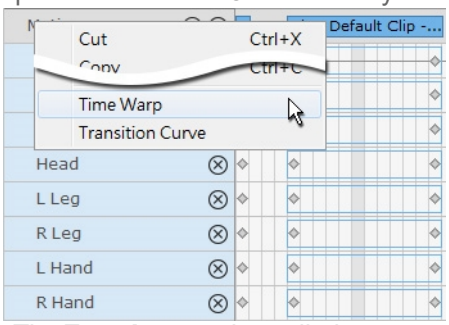
The motion layer key generated in the tracks. (Transition is auto-generated as well)

4. The in-between animation is automatically generated.



Key-frame animation is auto-generated.

5. You are able to right-click on the motion clip in the **Motion** track and select a transition curve to vary the transition speed between two 3D motion keys.



The **Ease In** curve is applied.

Note:

Please do remember that key-frame motions shall **NEVER** be created by mix-using the 2D and 3D keys because the results can be unexpected. You must use the 2D-2D or 3D-3D keys to build up key-frame motions.

Layering Motion Keys to Existing Motions

Pro & Pipeline

Once you apply a 3D motion clip to a G2 character, you may want to fine tune the offset (position) for each bone. This can be done via the **Edit Motion Layer** feature. The pose with the edited bones will be kept as a key in the **3D Motion Layer** track, and its effect will remain throughout the clip unless another key is set. The transition between the two motion layer keys will then auto-generate.

Making an Absolute Motion Layer Key

An absolute motion layer key is for setting a 3D motion layer key that takes charge in the angle of a specific bone, and ignores the effects of the underlying motion.

In **CrazyTalk Animator**, setting absolute keys can be done with a combination of 1. Removing Motions of Body Parts and 2. Producing a Custom Pose by the **3D Motion Key Editor**.

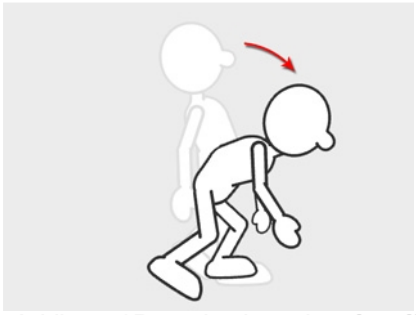
Making a Relative 3D Motion Layer Key

If you want to set a relative 3D motion key, also known as a relative key, so that the effect of the key blends into the underlying motion, then follow the steps below:

1. Select a character that already has an applied motion.



2. Click the **3D Motion Key Editor** button.
3. Move to the specific time where you want to overlay the offset key in the clip.
4. Select and adjust the body parts you wish to edit with the or tools. The key will automatically be added into the **3D Motion Layer** track and be blended into the motion in the **Motion** track.



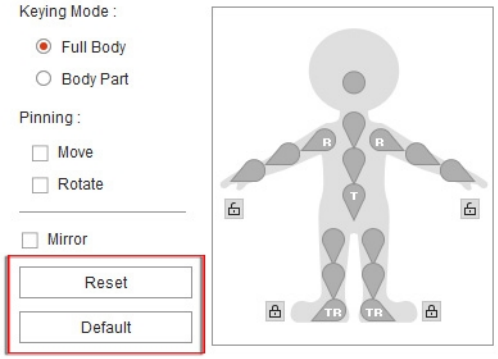
Adding a 3D motion layer key for offsetting bones.



The 3D motion layer keys affect the motion clip.

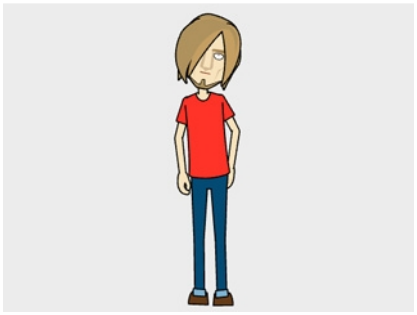
Pro & Pipeline

In the **3D Motion Key Editor**, there are two buttons besides the dummy pane. They can be used for retrieving poses, but they have different results for individual purposes.



What is the Default Pose in CrazyTalk Animator?

Our definition of a **Default Pose** in **CrazyTalk Animator** indicates the default personality reflecting the nature of the character. You can see it as the **Default Pose** when first loading the character.

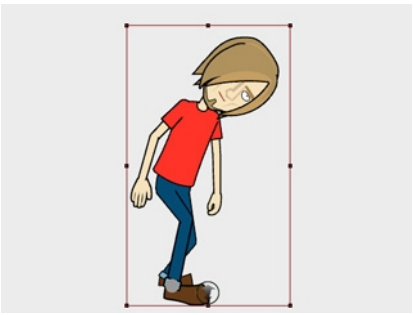


The **Default Pose** of the embedded G2 male - Saul.

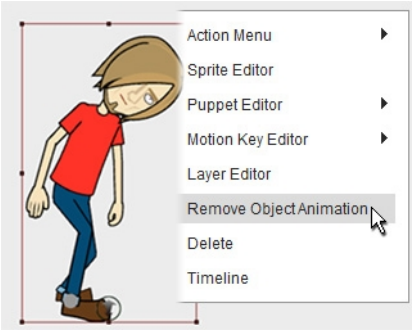
Setting Default Keys (Reset Pose Key)

When you use the **3D Motion Key Editor** to modify the pose of the character, you may find it hard to initialize the character to its original pose. By clicking the **Default** button, you can add a motion layer key that rectifies all the offsets and has the character stand straight in the default pose. In addition to that, if you ever right-clicked on the character and select **Remove Animation**, then the character will stay in the current pose. Use the **Default** feature so that you can have the character stand back to the default pose again.

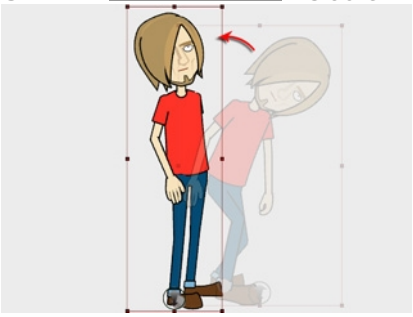
1. Select a character with a motion or any pose.



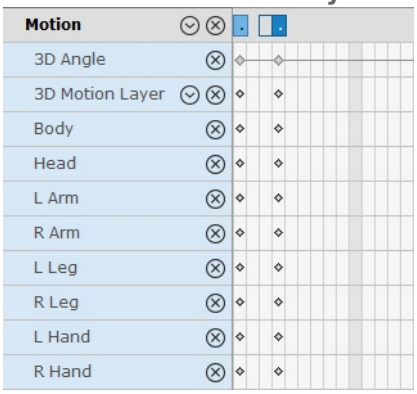
2. Right-click on the character. Then select **Remove Animation** from the right-click menu.



3. The character will keep the current pose. You need to spend a lot of time to modify the bones to make the character act a pose similar to the default one.
4. Click the Default **Default** button in the **3D Motion Key Editor** panel to save the time for modification.



5. You can click this button at any time frame to retrieve the default pose. A motion layer key will be automatically added into the **3D Motion layer** track and its sub-tracks.



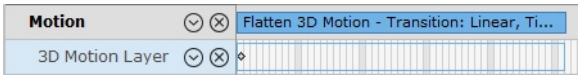
Resetting Motion Layer Keys

This feature is designed especially for the **3D Motion Layer** track. Press the button to add a pose key to counteract the **3D Motion Layer** effect of the previous key.

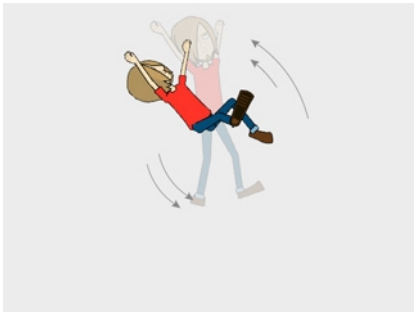
When you are modifying the pose via the **3D Motion Key Editor** and are not satisfied with the results, then you may also click this button to neutralize the data in the key and start all over again.

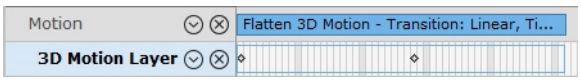
1. Select a character that already has an applied motion.





2. Go to the desired frame, set one **Motion Layer** key to tune the bone offsets for the **Perform** motion.

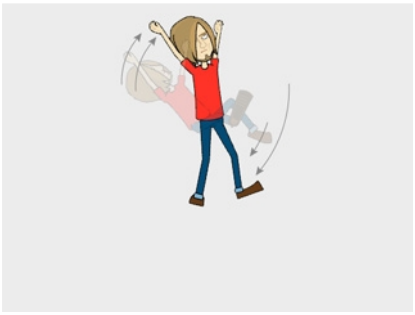




3. The transition will auto-generate and the motion clip will be modified with the layer key afterward.



4. If you are not satisfied with the result then you may want to reset all the offsets:
   - Delete this newly added key and add a new key again.
   - Click the Reset **Reset** button in the **3D Motion Key Editor** panel and start editing again.

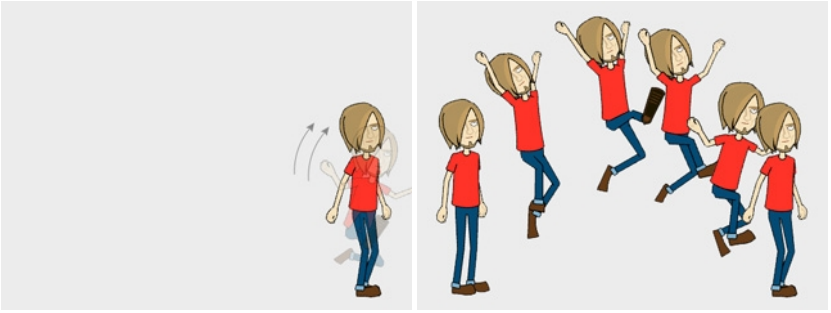


The **Reset** button actually adds a motion layer key that gives the priority back to the underlying motion clip.

5. After a new key is added, the motion after the key will be influenced.



6. Go to the end of the motion and click the Reset **Reset** button again to retrieve the pose in the motion back.



Locking Bones

Pro & Pipeline

When you are moving a specific body part with the dummy pane, you may find that the chain-reaction happens to other body parts. This is because these body parts are connected to each other with virtual bones.

Although you can not break the bones, you may lock some body parts from the dummy pane so that when you are moving or rotating another body part, this locked one will try not to be moved or rotated.

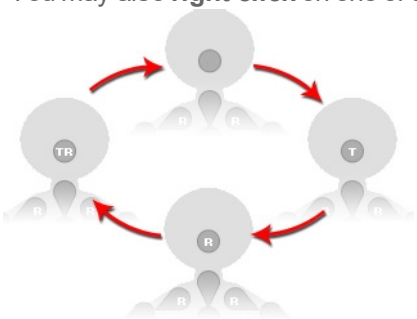
Lock Move

If you use the **Pinning** >> **Move**, then the corresponding body part will be pinned to where it is. So that when you move another body part, it still remains.

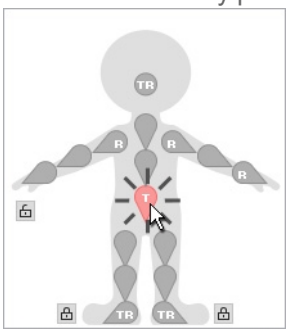
1. Apply a character with a start pose. You may need the left hand and foot to be pinned when you move another body part.



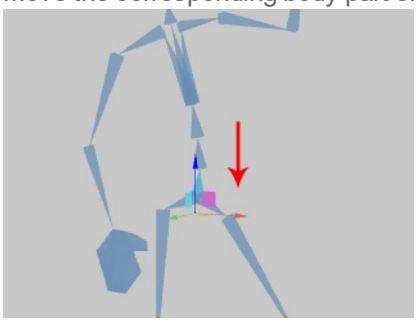
2. In the dummy pane, select the left hand and foot body parts and activate the **Pinning** >> **Move** box.
   You may also **right click** on one of the body parts to quickly switch its status.



3. Select another body part.



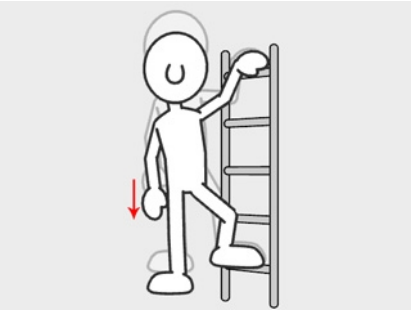
4. Move the corresponding body part of the body part.



Note:

The colors of the gizmo represents the three axes: **R** = **X**; **G** = **Y**; **B** = **Z**.

5. The locked left hand and foot will stay where it is.



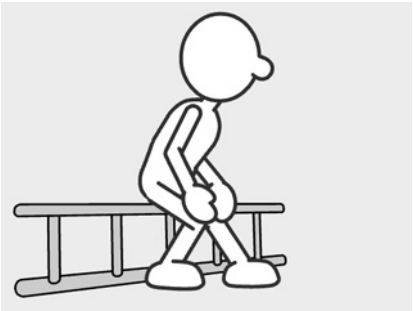


This is what you see if the moves of the hand and foot are not locked.

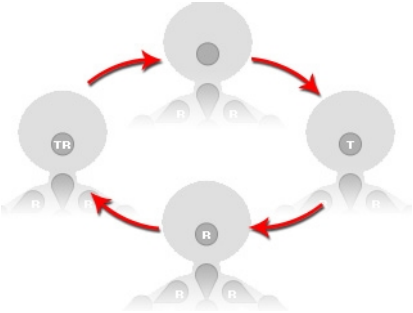
Lock Rotate

When an body part is moved, and you do not want another specific body part to rotate itself, then you can use the **Pinning** >> **Rotate** feature.

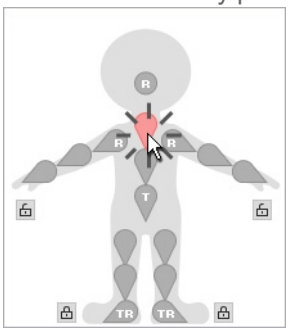
1. Apply a character with a start pose.



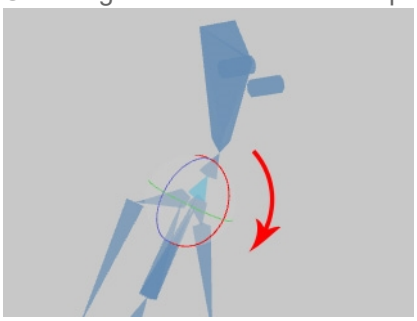
2. In the dummy pane, select the head body part and activate the **Pinning** >> **Rotate** box.
   You may also right click on one of the body parts to quickly switch its status.



3. Select another body part.



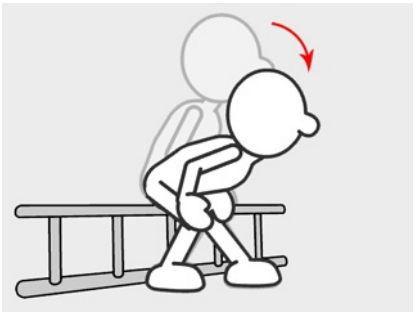
4. Use the gizmo to rotate the corresponding body part of the body part.

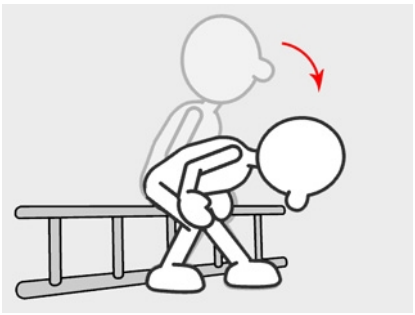


Note:

The colors of the gizmo represents the three axes: **R** = **X**; **G** = **Y**; **B** = **Z**.

5. The head tries to keep at the original angle.





This is what you see if the rotation of the head is not locked.

Note:

- Please note that if you select any body part that is T, R, or TR, then you can still move, rotate or even puppet it because your control has higher priority than the pins.

Fine Tuning the Motions with IK, FK

Pro & Pipeline

This section covers how to fine tune the actor with **IK** (Inverse Kinematics) and **FK** (Forward Kinematics).

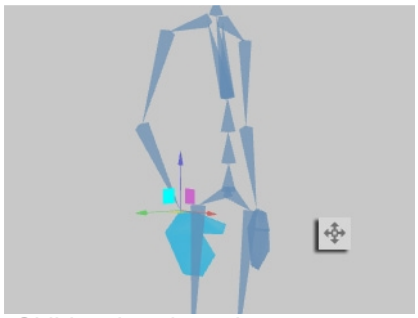
What is IK/FK
How to Use IK
How to Use FK

Pro & Pipeline

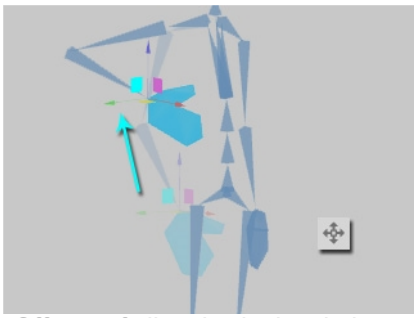
What is IK

IK, **Inverse Kinematics**, refers to a process utilized in computer graphic animation. In this process, the parameters of each articulation, in a jointed flexible object (a kinematic chain), will be automatically calculated to achieve a desired pose, especially when the end point moves.

Basically speaking, IK is how the child node, as it moves, affects all the parents' position and orientation values.



Child node selected

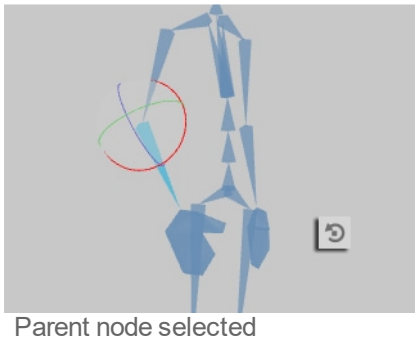


Offsets of all nodes in the chain gets affected

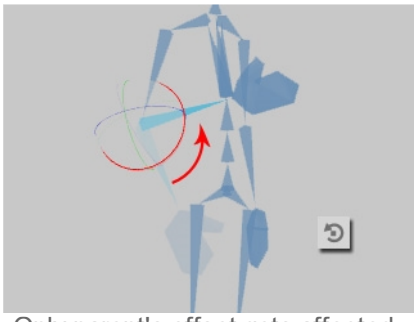
What is FK

FK, **Forward Kinematics**, is how the positions of particular parts of a model at a specified time are calculated from the position and orientation, together with any information on them of an articulated model.

To sum up, FK refers to the effect on the child nodes as the parent moves or rotates.



Parent node selected

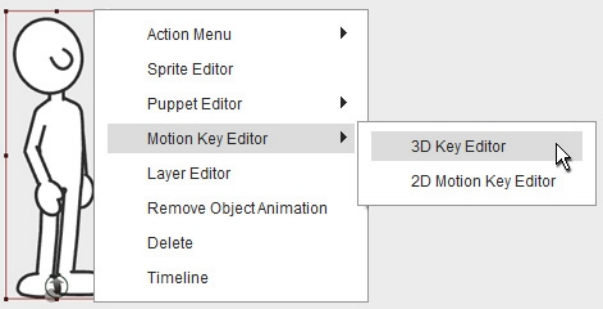


Only parent's offset gets affected

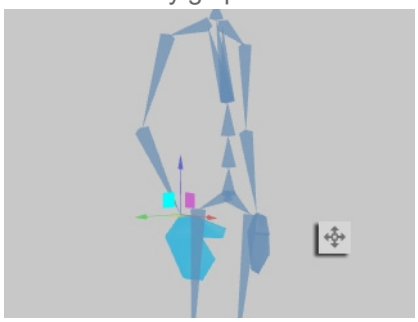
Pro & Pipeline

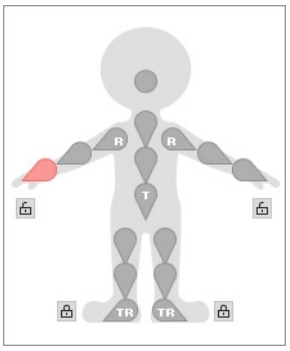
Before you utilize IK to animate your actor, be sure that you have opened the **3D Motion Key Editor**.

1. Double click on the target actor.
2. Click the **3D Motion Key Editor** button. Alternatively, you may right click on the desired actor and select **Motion Menu** >> **Edit Motion**.



3. Change to the tool in the 3D Toolbar.
4. Select a body part (in this case, the right hand) by double clicking it on the dummy in the 3D view or by simply clicking it on the dummy graphic.





5. Drag the axis of the gizmo on the 3D view.

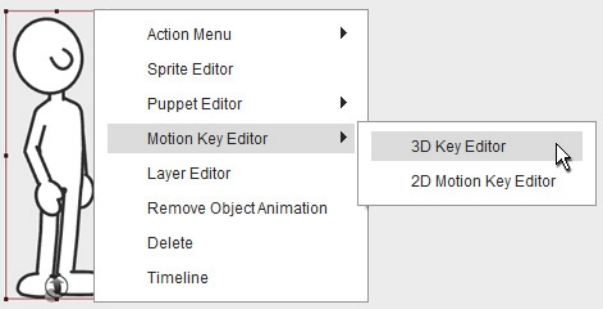




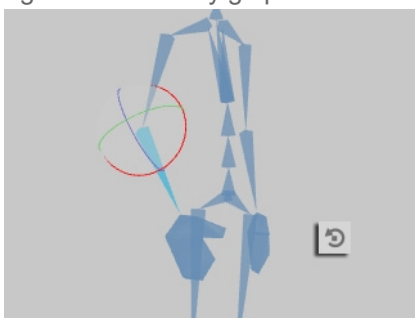
Pro & Pipeline

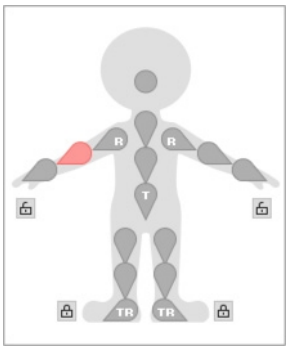
Before you utilize FK to animate your actor, be sure that you have opened the **3D Motion Key Editor**.

1. Double click on the target actor.
2. Click the **3D Motion Key Editor** button. Alternatively, you may right click on the desired actor and select **Motion Menu** >> **Edit Motion**.



3. Change to the tool in the 3D Toolbar.
4. Select a body part (in this case, the upper body) by double clicking it on the dummy in the 3D view or by simply clicking it on the dummy graphic.





5. Drag the axis of the gizmo on the 3D view.





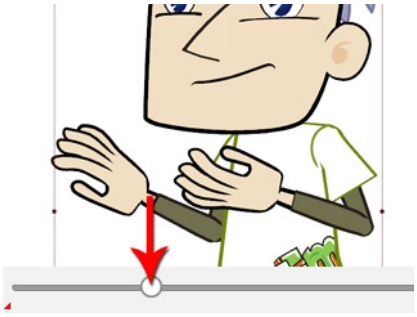
Using the Sprite Editor to Switch Hand Gestures

The body parts of a character are actually sprites with one or more elements inside. By using the **Sprite Editor**, you may switch to any elements in a body part, which all together compose the look of the character. You may also use this method to switch hand gestures during different time frames.

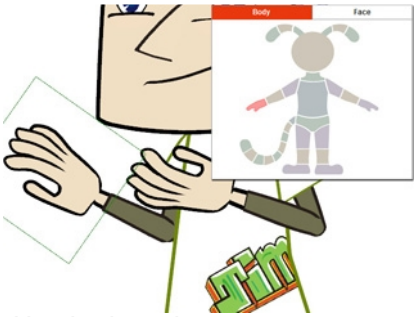
1. Select a character whose hands contains more elements inside.



2. Go to a different time frame.



3. Click the **Sprite Editor** button.
4. Pick one of the hands of the character. You may then see all the elements listed in the **Sprite Editor**.



Hand selected



Elements in the **Sprite Editor**

5. Select one of the elements which will set a **Switch** to the hand.



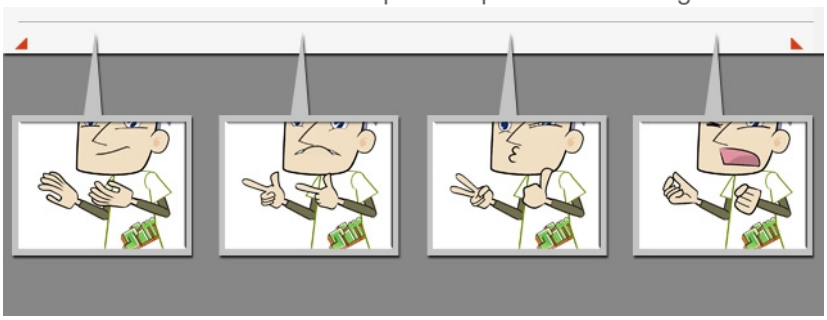
6. Select another hand and repeat Step 4.



7. Different hand gestures will then be assigned.



8. Go to different time frames and repeat the procedure to assign more hand gestures to the character.



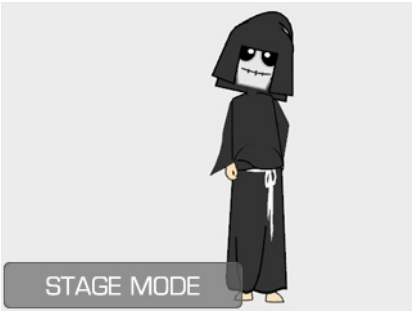
Runtime Setting up Pose-Switching Animations

Pro & Pipeline

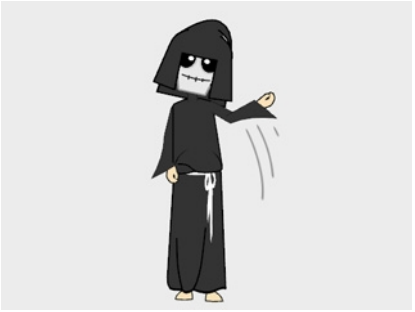
When you apply a motion to a character, the animation is auto-generated by the bone transformation and sprite switching.

By using the **Runtime Composer**, you can add poses to set sprite switch keys to certain timing for a motion without opening the **Sprite Editor**.

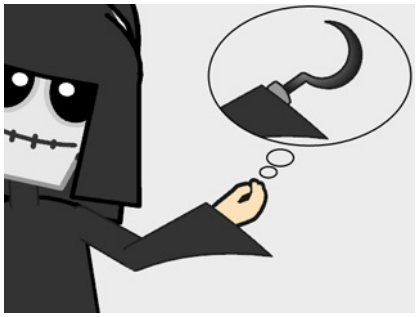
1. In **Stage Mode**, apply a character.



2. Apply a motion to the character.

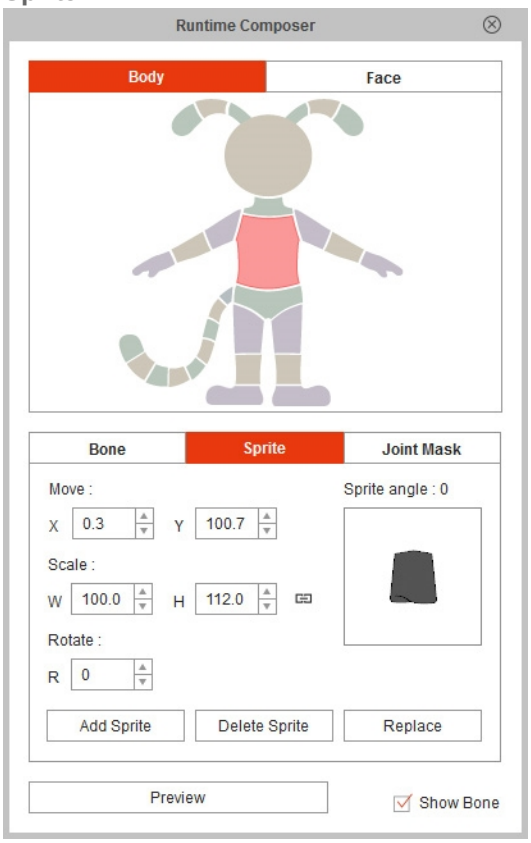


3. Go to the time frame when you want to set a pose that does not exist in the sprite.

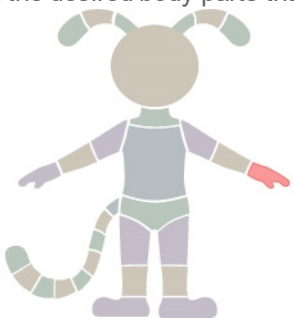


Anticipation for desired poses.

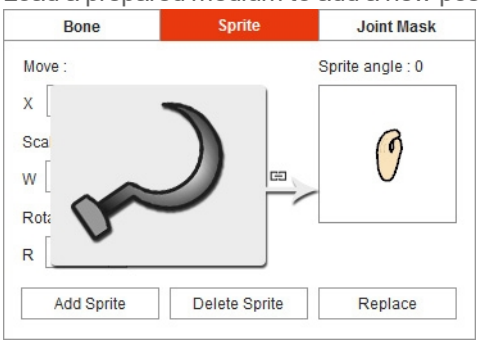
4. Make sure the character is selected and click the **Runtime Composer** button to open the panel and switch to the **Sprite** tab.



5. Pick the desired body parts that you want to initialize by clicking on the dummy.



6. For adding expected pose, click the **Add Sprite** button.
7. Load a prepared medium to add a new pose to the sprite.

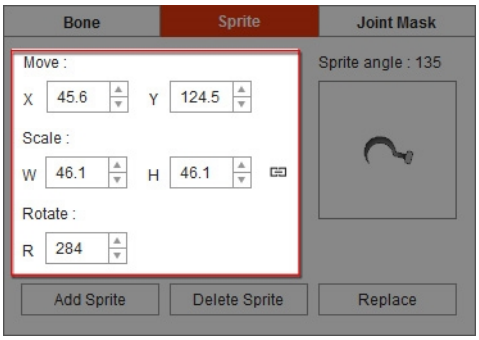


8. The original pose is then switched to the new one and a sprite-switching key is added.

The original pose is replaced by the new one.

A new sprite switching key is added.

9. If you want to have a precise value for the position and size of the new pose, then adjust the values of the **Move**, **Scale** and **Rotate**.



Note:

- Press down the **Lock/Unlock Ratio** button for resizing in current ratio.

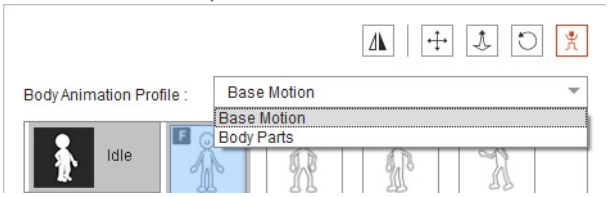
Using the Body Puppet Editor Panel

CrazyTalk Animator introduces revolutionary, real-time puppeteering controls that empower you to command character body movements.

Body Puppet control - Basic Concept

The basic concepts and recommended steps for Body Puppeteering controls follow below:

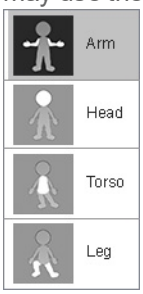
1. Choose a desired profile.



- **Base Motion** (Full Body Puppeteering): This includes full-body puppeteering profiles which you use to animate characters.

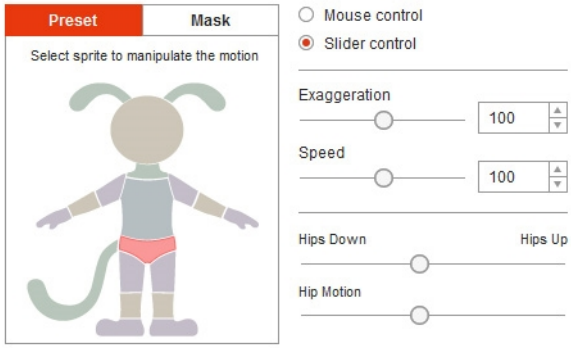


- **Body Parts** (Solo Body Part Puppeteering): This includes puppet controls for individual body parts. You may use the following profiles to partially modify an existing motion.

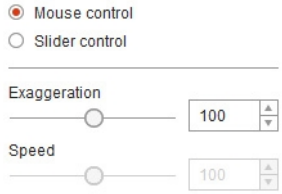


- Note:
  -  The front preset: With an "F" on the top-left of the icon.
  -  The side preset: With an "S" on the top-left of the icon.

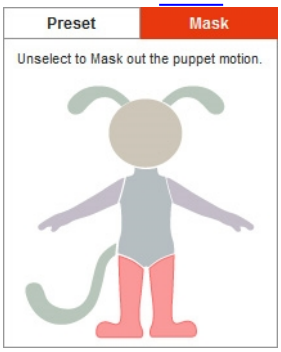
2. Select a preset from a category.
3. Switch to the **Slider Control** mode (default mode), and then switch to the **Preset** tab. Press the **Space Bar** to preview the motion pattern. You can pick a body part on the dummy pane, and proceed to drag any slider during the preview procedure in order to choose a more suitable motion style for recording.



4. Switch to the **Mouse Control** mode and press the **Space Bar** to test the manual puppeteering. Swing the mouse cursor around the puppet mark, in order to control the motion tempo with the speed of your mouse.



5. Switch to the **Mask** tab in order to activate, or deactivate, certain parts of the body during puppet motion.



6. If you are satisfied with the preview results, then press the **Ctrl + Enter** to start recording.

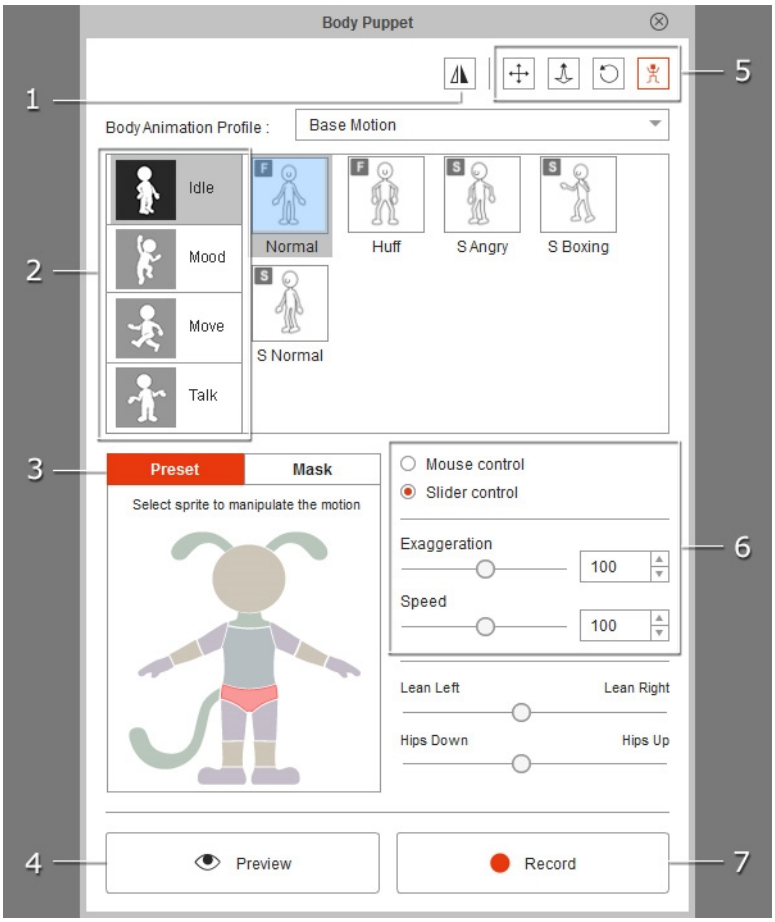
Note:

- Click the **Play** button on the play bar, in order to view your recording results.



- For more information, please refer to the sections below:
  - Introducing the Body Puppeteering Panel
  - Puppeteering - Character Transformation
  - Defining Custom Motions with the Parameter Sliders

Introducing the Body Puppeteering Panel



1. Switch to Face Puppet	Click this button to switch to the Face Puppeteering panel.
2. Flip	Click this button to horizontally flip the selected character.
3. Body Control Template Category	Select one of the template categories from the drop-down list. Please refer to the Puppeteering - Base Motion section for more information.
4. Preset and Mask Pane	**Mask** tab: Select the body part of the dummy for mask puppeteering. Only the selected part will be triggered during the previewing or recording process. **Preset** tab: Define the motion weight of the selected body parts Pro & Pipeline.
5. Preview (Space bar)	Click this button and then press the **Space bar** to preview the motions triggered by your input device (Mouse by default).
6. Puppeteering Modes	Press the **Move**, **Zoom** and **Rotate** buttons to puppeteering the transformation motion of the selected character. Press the **Actor** button to puppeteer the body movements of the selected character.
7. Triggering Methods	Switch tabs to define a triggering methods for character motions. Please refer to the Slider Control and Mouse Control section for more information.
8. Record (Ctrl + Enter)	Click this button and then press **Space bar** to start recording a motion clip. When you move your mouse during recording, the results will be captured as a clip and stored into the **Motion** track.

Puppet to Clip - Basic Concepts

The clips generated by the puppeteering methods follow specific rules; including overriding/blending concepts and full body/masking recording concepts. All recorded clips data are stored in the **Timeline**.

Puppeteering to Create a New Motion Clip without Existing Motions in Place

If you use the **Body Puppet Editor** panel to produce and record the body motion for a character from scratch, then the result is stored into the **Motion** main track in a clip form.

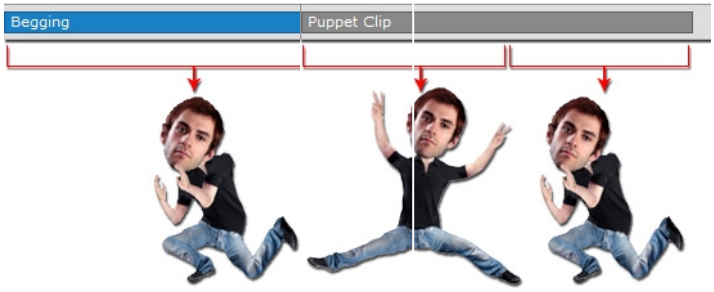


Please refer to the Puppeteering - Base Motion section for more information.

Overlapping Puppet Motion to an Existing Motion Clip

Start from the Same Frame

If you produce a new puppeteering clip from the same starting frame as the previous clip, then the new motion will blend into the previous motion. Therefore, only one blended clip (with two different motion types) will be left in the track.



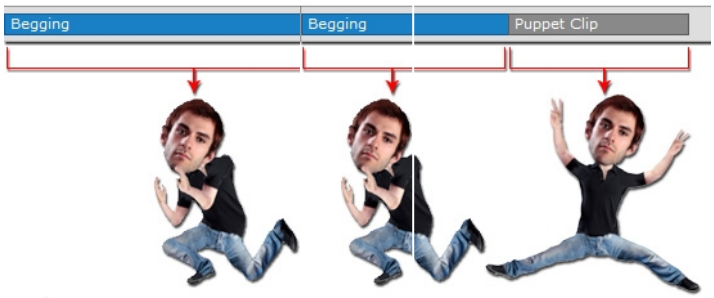
Only one clip in the track.

Puppet and record from the same start frame.

(Blend into the previous clip)

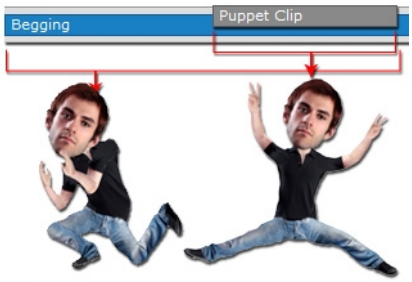
Start from the Middle of the Previous Clip

If you puppet and record a new clip from the middle frame of the previous clip, then you will produce two clips in the track. You may drag to move both clips, or do further editing to them.



Only one clip in the track.

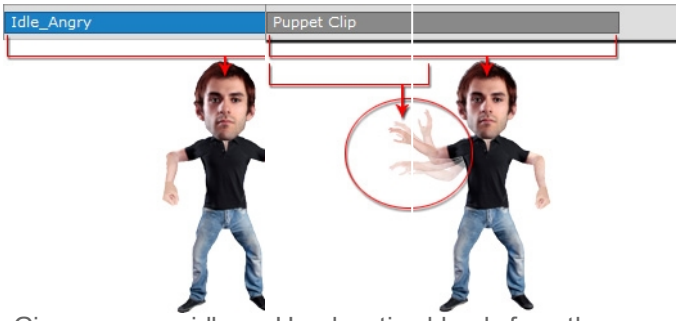
New clip added from the middle of the previous clip.



The previous clip is overlapped instead of being truncated by the new clip.

Puppeteering with Body Mask or Puppeteering Using Body Part Profiles

In the previous section, the clips are all produced by the Puppeteering - Base Motion (full-body-puppeteering) method. If you use the Puppeteering - Body Parts or Masking Puppeteering methods, then you may blend the new body part motions into the previous clips in order to fine tune.



Given an angry idle clip.

Hand motion blends from the same start frame.



Recording hand motion from the middle of the previous clip.

(Hand motion blends with previous clip, and forms a new clip)

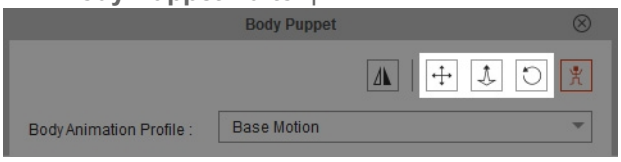
Puppeteering - Character Transformation

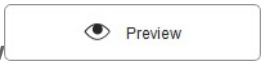
In addition to the Creating a Path Animation method, you may also use the **Body Puppet Editor** panel to create a character's transformation path.

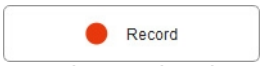
1. Select a character.



2. Go to a specific time frame where you wish to start to puppet the character's transformation data.
3. Click the **Puppet Editor** button to show the puppet panel. If it brings up the **Face Puppet Editor** panel, then click the **Switch to Body Puppet** button.
The **Body Puppet Editor** panel will now show.



4. Press the **Move** button down.
5. Press the **Space Bar** to start previewing. (Or click the **Preview** 

button and press the **Space bar**)
6. Press **Ctrl + Enter** to start recording, or click the 

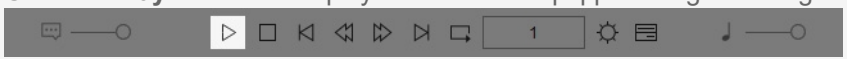
Record button and press the **Space bar** to start recording the motion during puppeteering. The motion can be triggered with the same mouse manners as you did in the preview mode.



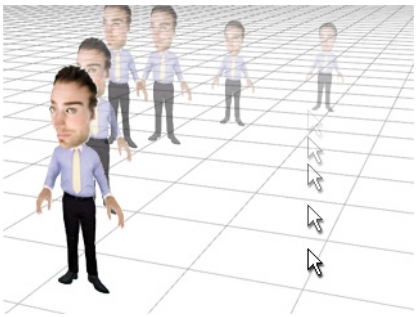
7. Press **Space bar,** or **ESC** key, to stop recording.

Note:

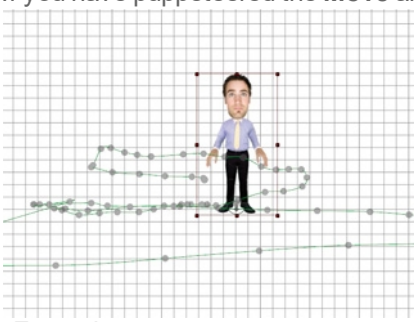
- Click the **Play** button on the play bar to view the puppeteering recording results.



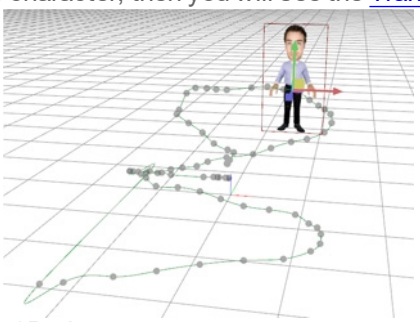
8. Go to the time frame in Step 2. Repeat the steps to puppet and record with the **Zoom** or **Rotate** buttons pressed.
   The illustration below shows the **Zooming** results.



9. If you have puppeteered the **Move** and **Zoom** data of the character, then you will see the Transform Path.



Front view

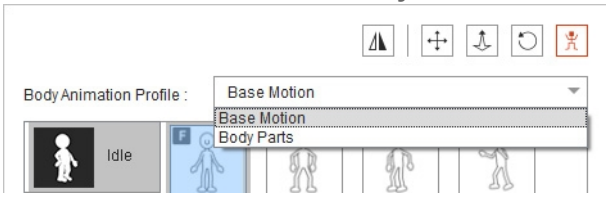


3D view

Puppeteering - Base Motion

You may have the character act some preset full-body motions from the library. This saves a lot of time when you need the character to do common motions found in daily life.

1. Select **Base Motion** from the **Body Animation Profile** drop-down list.



2. Select the **Idle**, **Mood**, **Move** and **Talk** icon.



3. Pick any one motion template from the category list.



4. Press the **Space Bar** to start previewing. (Or click the **Preview** 

button and press the **Space bar**)
5. The character will then perform the built-in motion of the template when you move your mouse in a circle.
   - A clockwise circle motion will cause the character to move forwards.



   - A counterclockwise circle motion will cause the character to move backwards.



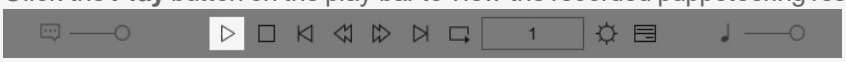
   - The faster the mouse moves, the faster the character moves.
6. Press the **Space bar** again to stop previewing.

7. Press **Ctrl + Enter** to start recording, or click the 

Record button and press the **Space bar** to start recording the motion during puppeteering. The motion can be triggered with the same mouse manners as you did in the preview mode.
8. Press the **Space bar** or **ESC** key to stop recording.
9. Once the recording stops, a clip containing all the recorded motions will be stored as a single clip in the **Motion Track** of the character.

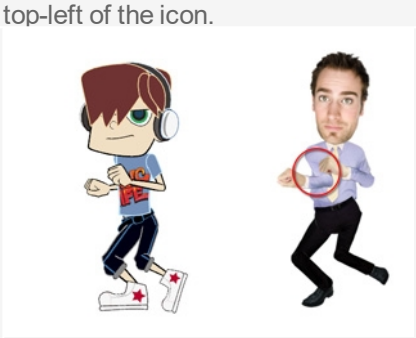
Note:

- Click the **Play** button on the play bar to view the recorded puppeteering results.



- Use the front preset for front characters, and the side preset for side characters. Mix and matching presets may sometimes cause unexpected layer issues.
-  The Front preset: Represented with an "F" on the top-left of the icon.
-  The Side preset: Represented with an "S" on the top-left of the icon.

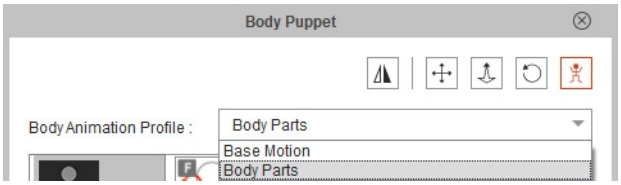




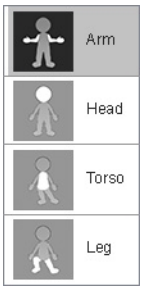
Puppeteering - Body Parts

The **Solo Body Part Puppeteering** method helps you puppeteer specific body parts by mixing and creating a lot more motions than what the **Base Motion** category provides.

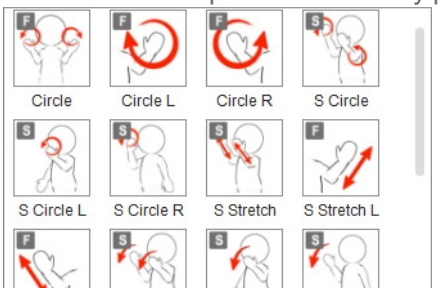
1. Select a character.
2. Go to a specific time frame where you want to start puppeteering the character's body movements.
3. When the **Body Puppet Editor** panel displays, select **Body Parts** from the **Body Animation Profile** drop-down list.



4. Select the **Arm**, **Head**, **Torso** or **Leg** icons.

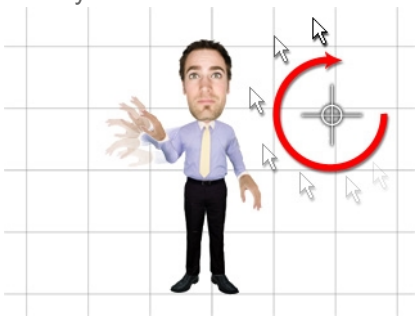


5. Pick a motion template from the body part category list.

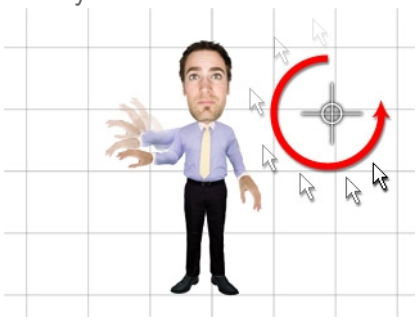


6. Press the **Space Bar** to start previewing. (Or click the **Preview** 

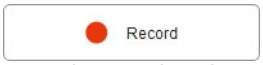
button and press the **Space bar**)
7. The character will perform the built-in motion template when you move your mouse in a circle.
   - Move your mouse in a clockwise motion for the character to move forward.



- Move your mouse in a counterclockwise motion for the character to move backwards.



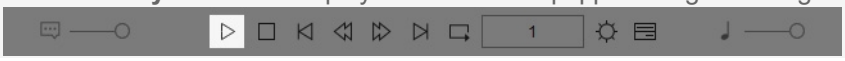
- The speed of the motion is determined by the speed of the mouse motion.

8. Press the **Space bar** again to stop previewing.
9. Press **Ctrl + Enter** to start recording, or click the 

Record button and press the **Space bar** to start recording the motion during puppeteering. The motion can be triggered with the same mouse motions as the preview mode.
10. Press the **Space bar** or **ESC** key to stop recording.

Note:

- Click the **Play** button on the play bar to view the puppeteering recording results.



11. Go to the time frame in Step 2. Repeat the steps to puppet and record by selecting individual body parts and motion presets.



12. Once the recording stops, a clip containing all the recorded motions will be stored as a single clip in the **Motion Track** of the character.

Slider Control and Mouse Control

There are two methods to triggering motions within the **Body Puppet Editor Panel**, **Slider Control** and **Mouse Control**.

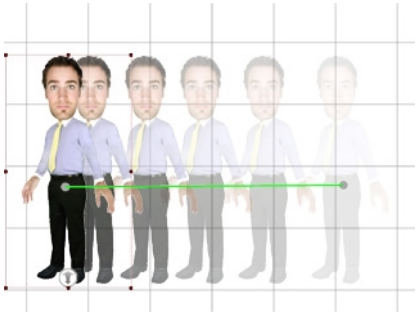
Slider Control Mode

If you choose the **Slider Control** radio button, then you can constantly change the character's motion weights and speed values during **Previewing** or **Recording**. The character's motions react instantly to the values.

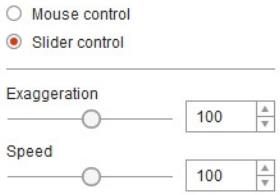
The main purpose for the **Slider Control Mode**:

- Previewing Motion
- Fine-tuning motion parameters and finding desired motion patterns.
- Please note that recording during slider puppeteering is allowed.

1. Given a motionless character that moves from left to right, along a path, as below:



2. In the **Body Puppet Editor** panel, select the **Walk** preset from the **Base Motion** category.
3. Choose the **Slider Control** radio button.



4. Start to preview (**hotkey: Space bar**) or record (**hotkey: Ctrl + Enter**).
5. The character starts to perform the preset motion again and again. You may drag the **Exaggeration** or **Speed** sliders to affect the motion in real-time.
    - The **Speed** value decides the speed of the looping motion.

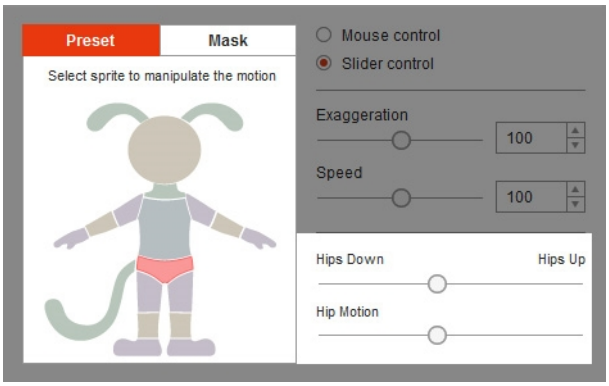


Looping once for a lower **Speed** value.



Looping several times for a higher **Speed** value.

6. Switch to the **Preset** tab. Picking a body part on the dummy pane will cause the relevant sliders to appear.
Pro & Pipeline



7. Start to preview or record. The character will keep repeating the motion.



Initial walking motion

8. Drag the sliders during previewing or recording to change the motion weight of the body parts.



Lean forward



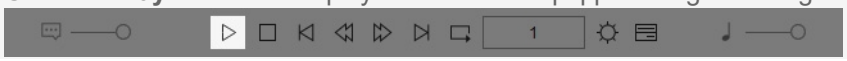
Head raise



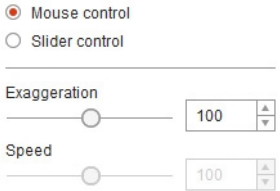
Hip Low + Long Stride

Note:

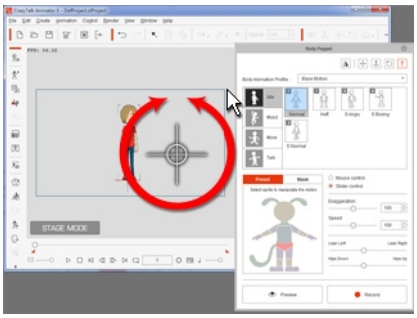
- Click the **Play** button on the play bar to view the puppeteering recording results.



Mouse Control Mode



- The mouse movements trigger the motion of the character. Move the mouse cursor around the axis mark on the screen to perform a body puppet motion.



- The circular direction triggers the motion forwards or backwards.



Swing clockwise



Swing counterclockwise

- You do not always need to make a full circle around the mark in order to produce a complete motion. You can move back and forth in a simple arc movement to puppet the character to a partial preset motion.

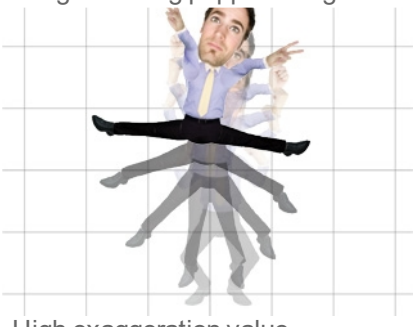
If you select the **Jump** preset from the **Base Motion** category, then the general result is as below:



- The **Exaggeration** value must be set before **Previewing** or **Recording**.
- Changing the **Exaggeration** value may affect the motion weights during puppeteering.



Low exaggeration value



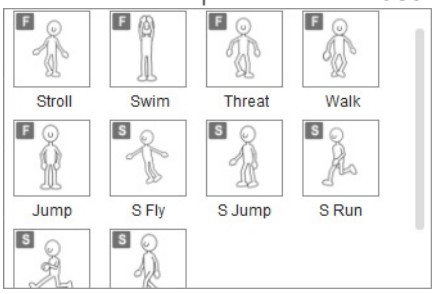
High exaggeration value

Masking Puppeteering and Multi-Layer Recording

Masking Puppeteering means to puppet individual body parts by masking out unwanted body parts on the dummy, when you are using **Full Body Puppet tool**. You can extract specific body parts motion from the base motion presets.

Masking Puppeteering

1. Select one of the presets in the **Base Motion**.



2. Switched to the **Mask** tab.

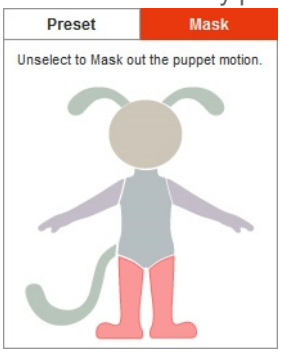


3. Press the **Space Bar** to start previewing. (Or click the **Preview** 

button and press the **Space bar**)



4. Deactivate the body parts of the dummy in order to mask out the motions from these body parts.

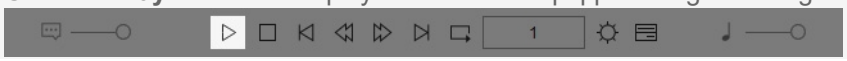


5. Use the standard method to preview or record the character's motion. Only the selected body parts will be puppeteered.



Note:

- Click the **Play** button on the play bar to view the puppeteering recording results.



Masking with a Start Pose

Although the presets in the four categories only relate to conversation, idle, mood, and move motions; you can always start with a custom pose and mask out presets from any of the four categories in order to produce newly customized motions.

1. Select a character.



2. Set a pose (sitting pose for example) by using one of the templates in the **Content Manager** or the **Motion Key Editor**.



3. Using the **Masking Recording** method described above, puppeteer specific body parts without affecting the pose.



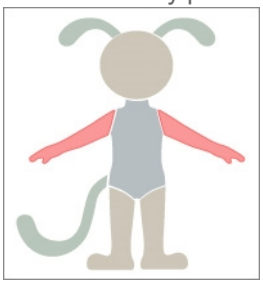
Multi-Layer Recording

Multi-layer Recording is about recording the character motions, layer by layer. It is helpful when you need to do the mix-recording. This way, the character can generate thousands of motion combinations from the limited number of templates. This method applies to both **Full Body Puppeteering** and **Solo Body Part Puppeteering**.

1. Follow the **Masking Puppeteering** procedure described earlier on this page, and record a motion of a specific body part.



2. Go to the time frame when the previous motion starts. Select another motion preset.
3. Pick other body parts on the dummy.



4. Puppeteer and record the motions of the un-masked body parts.



5. Repeat to record motions of individual body parts (layer by layer). This way you may generate a whole new motion with your own puppeteering.



Note:

- If you do not select other body parts in Step 4, then the motions recorded in Step 1 will be overridden.
- Click the **Play** button on the play bar to view the puppeteering recording results.

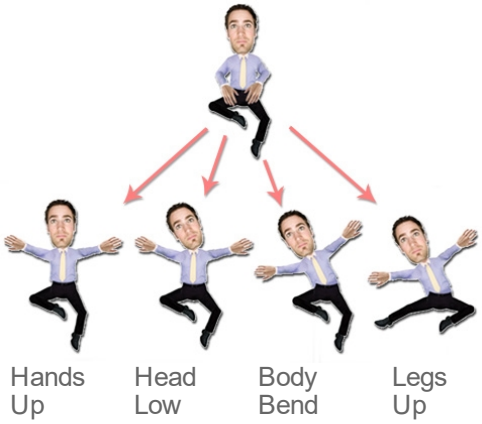


Defining Custom Motions with the Parameter Sliders

Pro & Pipeline

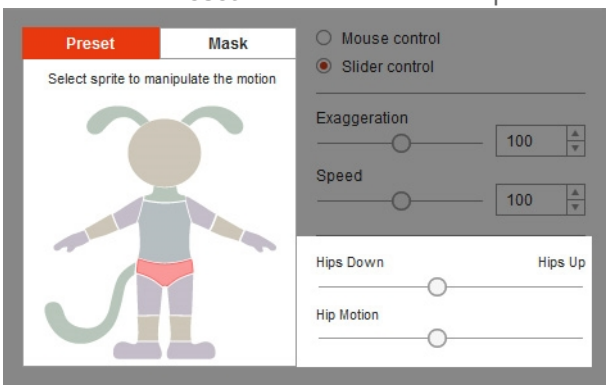
Each category preset has adjustable parameters. These parameters decide the motion weights of specific body parts. With these parameters, even a single motion preset can create various motion styles.
*Please note that this feature is for the **Pipeline** and **Pro** versions only.

Motion of Original Preset

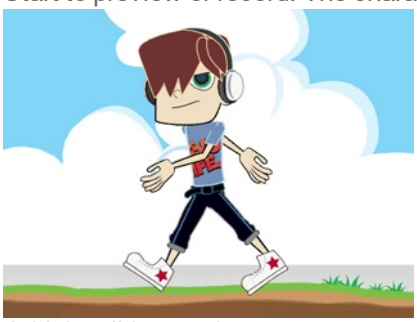


Defining Custom Motions

1. Select a character.
2. Select a category and pick a preset.
3. Switch to the **Preset** tab. You will then see parameters sliders provided for this preset.

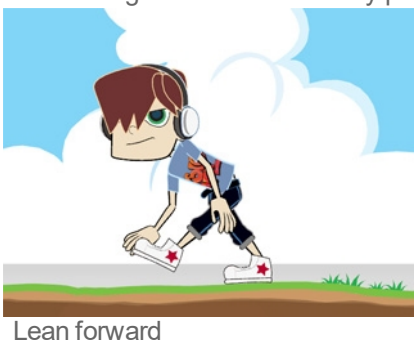


4. Start to preview or record. The character will keep repeating the motion.



Initial walking motion

5. Pick the body parts on the dummy pane, and then drag the sliders during previewing or recording, to change the motion weights of individual body parts.


Lean forward


Head raise


Hip Low + Long Stride

Note:

- The parameters are different from preset to preset.
- Please note that if you are using the **Mouse Control** mode, then the parameters in the preset tab will all be disabled. You must adjust the values before previewing or recording.

Using the 2D Motion Key Editor

CrazyTalk Animator integrates various key-editing panels into one single **2D Motion Key Editor**. You may utilize it to add/modify transform keys to all the limbs on a character.

The **2D Motion Key Editor** has two main functions:

- Producing key-by-key animations.
- Modifying existing motion keys.

Please refer to the sections below for more information:

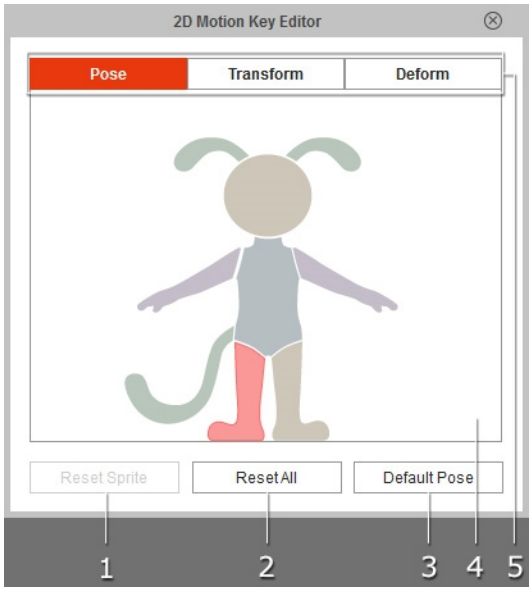
- Introducing the 2D Motion Key Editor
- Using Pose Mode - FK and IK
- Using Body Transform - Transform any Body Parts
- Using Face Mode - Facial Features
- Default Pose and Absolute Key
- Deforming Body Parts to Dramatize 2D Motions

Invoking the 2D Motion Key Editor

The body Key editor facilitates setting or key modifying in **Motion** related tracks, (the child tracks under the **Motion** clip track) by using a more intuitive and interactive interface. To invoke the **2D Motion Key Editor**, you may:

- Click the **2D Motion Key Editor** button.
- Double-click on the desired key in the **T** sub tracks, under the **Motion** track, to edit the existing key.
- Double-click anywhere in the **T** sub tracks, under the **Motion** track, to initiate a new key.

User Interface



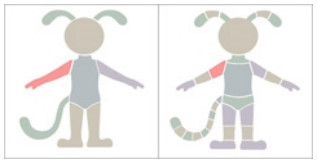
1. Reset Sprite Click this button to reset a transform key for the selected body part.

- Because the transform keys from the **Pose** and **Body** modes are stored in the same tracks, you will need to switch to **Body** mode and then click this button if you want to reset transform keys made from the **Pose** mode.

2. Reset All Click this button to reset the transform keys for all body parts under the current mode.

3. Default Pose Click this button to reset the transform keys to all body parts. It is helpful when you want the character to return to the default pose.

4. Dummy Pane



In the **Pose** and the **Body** mode, you may select specific limbs or body parts for moving, scaling and rotating.



In the **Face** mode, you may select specific face features to be moved, scaled and rotated. This feature is for **Sprite-based faces** only.

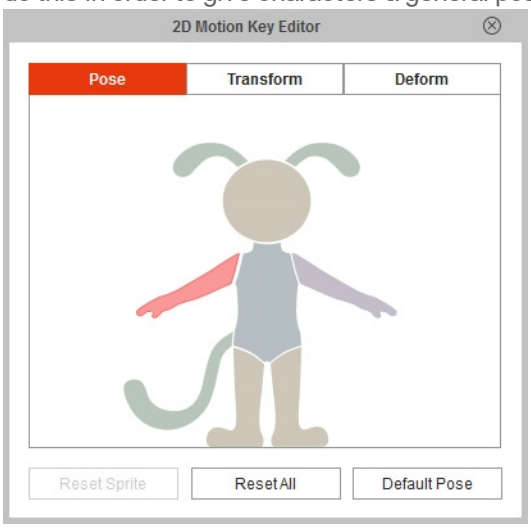


In the **Deform** mode, you can select specific limbs or body parts to deform for a more dramatic motion effect.

5. Modes Click these three buttons to switch to different modes for moving, scaling and rotating selected body parts or facial features.

Using Pose Mode - FK and IK

In the **Pose** mode, you may adjust the limbs with **FK** (Forward Kinematics) and **IK** (Inverse Kinematics) methods. You can do this in order to give characters a general pose, or you can slightly modify individual body parts in **Body** mode.



Using FK and IK

1. Select a character and click the **2D Motion Key Editor** button.



2. Pick a **Hand**. You will see two concentric circles for use with the **FK** method.



- Drag the outer circle to rotate the hand, and the geared body, in an opposite direction.



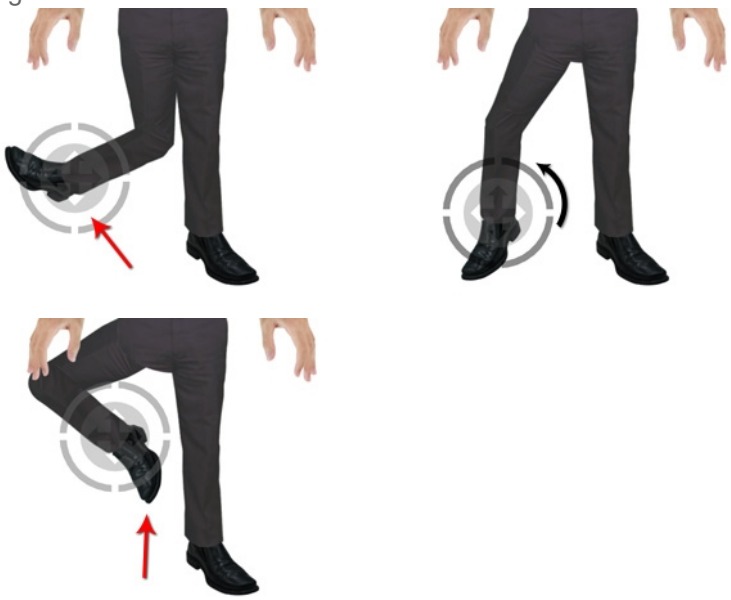
- Drag the inner circle to rotate the hand, and the geared body, in the same direction.



3. Pick a **Leg**. Drag the cross arrow inside the circle in order to use the **IK** method to relocate the feet.



- If you want the joints of the legs to be in a correctly angled, then you need to drag the outer circle to form the angle first.



4. Pick the **Body**. Drag the cross arrow to move the pelvis of the character. This is easy when wanting the character bend his/her knees.



In **Pose** mode, you can only set the pose to characters. If you need to adjust detailed body parts, then switch to **Body** mode in order to fine-tune each body part with exact values.

Enlarge to Create Visual Space Sensations

Although characters in **CrazyTalk Animator** are flat (2D view), you can always change body sizes to create a visual space sensation.

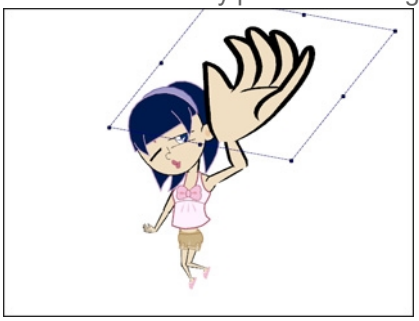
1. Select a character and open the **2D Motion Key Editor**.



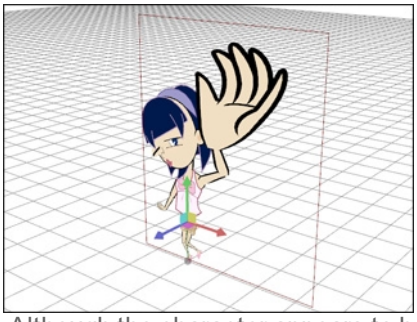
2. Set a pose.



3. Pick individual body parts and change the size of each one.



4. Click the **3D View** button to view this character.



Although the character appears to have a visual space sensation, it is still actually flat.

Stretching Animation

1. Set the character's pose in the **Pose** mode.



2. When the **2D Motion Key Editor** appears, switch to **Body** mode.
3. The dummy pane will change to a detailed one.



4. Click one of the body parts, on the dummy pane, or click the part directly on the character. A transform handle box will appear around the body part.



5. Un-proportionally scale the selected body part.



Please note that the child node (the shoe in this case) will also be affected.

6. Modify the child node in the same manner, to get the best results.



Transform Tool

If you need to set a transform key with an exact value, then select the body part and adjust the parameters on the **Property Tool Bar**.



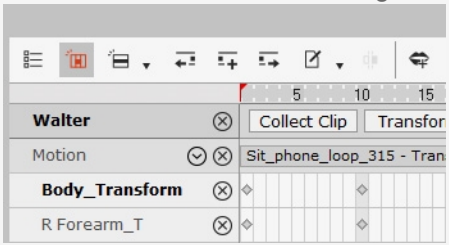
- **X**, **Y**: Enter these values to decide the location of the body part.
- **W**, **H**: Enter these values to decide the **Width** and the **Height** of the body part.
- **Lock/Unlock Ratio**: Click this button to toggle the **Keep Aspect Ratio** on/off.
- **R**: Enter a value to determine the orientation of the body part.
- **Mirror**: Activate this box and choose **Forward** or **Reverse** from the drop-down list to simultaneously adjust symmetric limbs.
  - Choose **Forward** to cause both limbs to transform in the same direction or orientation.



  - Choose **Reverse** to cause both limbs to transform in opposite directions or orientations.



- Note:
  - Transforming body parts will set transform keys in the **Body_Transform** track under the **Motion** main track and **T** sub tracks that belong to that particular body part.



Detaching Animation

In addition to editing the size, you may also move the body parts away in order to create a detaching animation.

1. Select a character and open the **2D Motion Key Editor** panel.



2. Go to a desired time frame where a body part starts to detach from the character and set a pose.



3. Go to another time frame and move the body part away (You may optionally resize the body part).





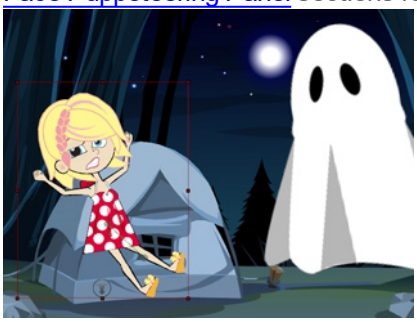
Note:

- If your character's head is sprite-based, then you can switch to **Face** mode to change the body dummy pane to the face dummy pane. Please refer to the Using Face Mode - Facial Features section for more information.

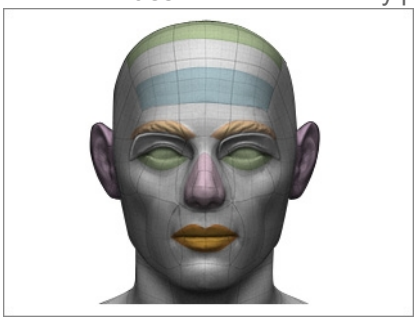
Using Face Mode - Facial Features

If you are using a sprite-based face, then you may use the **Face** mode for a more dramatic face effect. You can do this by moving, scaling or rotating the facial features. Please note that this function only applies to **Sprite-based faces.**

1. Select a character whose expression is already set. Please refer to the Using the Face Key Editor and Using the Face Puppeteering Panel sections for more information.



2. Switch to **Face** mode. The dummy pane will change to the face feature mode.



3. Pick on the face dummy or directly click on the facial feature to select it.



4. Move, scale or rotate the facial feature.



Transform Tool

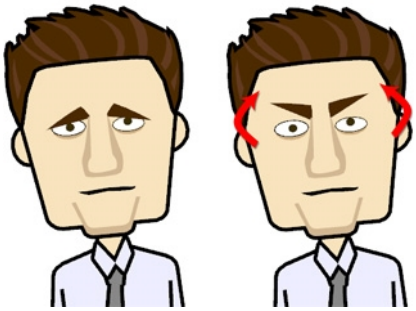
If you need to set a transform key with an exact value, then select the facial feature and adjust the parameters on the **Property Tool Bar**.



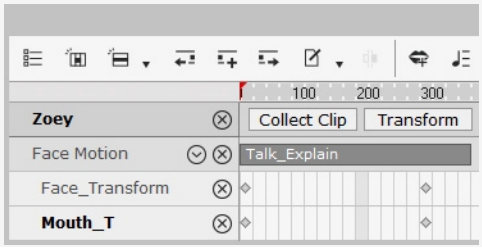
- **X**, **Y**: Enter these values to decide the location of the facial feature.
- **W**, **H**: Enter these values to decide the **Width** and the **Height** of the facial feature.
- **Lock/Unlock Ratio**: Click this button to toggle the **Keep Aspect Ratio** on/off.
- **R**: Enter a value to determine the orientation of a facial feature.
- **Mirror**: Activate this box and choose **Forward** or **Reverse** from the drop-down list to simultaneously adjust symmetric features.
  - Choose **Forward** to have both features (the eyes in this example) transform in the same direction or orientation.



  - Choose **Reverse** to have both features (the eyebrows in this example) transform in opposite directions or orientations.



- Note:
  - Transforming facial features will set the transform keys in the **Face_Transform** track under the **Face Motion** main track and **T** sub tracks that belong to the respective features on the **Timeline**.



Default Pose and Absolute Key

Inside the **2D Motion Key Editor** panel, you may use the **Default Pose** and **Absolute Key** to set transform keys to all body parts and facial features.

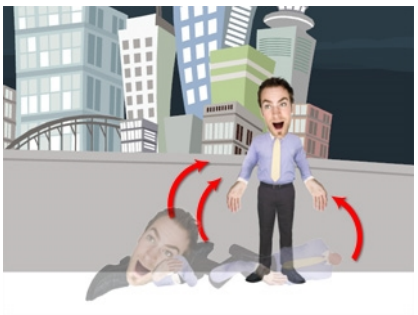
The **Default Pose** helps you reset the transform values for all body parts and facial features instead of resetting them manually. The **Absolute Key** sets transform keys according to the current status of the body parts and facial features. This forces a transition effect that starts from the present time frame.

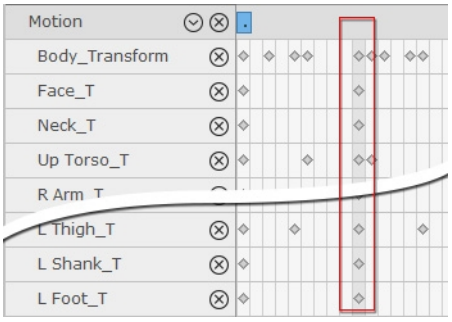
Default Pose

1. Given a character whose body has been transformed many times. It is sometimes hard to reset everything manually.



2. To do this, go to another time frame and click the Default Pose **Default Pose** button in the **2D Motion Key Editor** Panel. All body parts will then return to their initial status.





Absolute Key

You may then use the **Absolute Key** feature to help you set a key to retain the current transform data. This helps so that the current pose is not destroyed by the auto transition feature when the pose is between two body motion keys.

1. Select a character, go to forward frame and set an ending pose.
2. The transition effect will auto-generate as shown below:



3. If you change the ending pose as shown in the illustration, then the transition animation will be auto produced as shown in the right image.



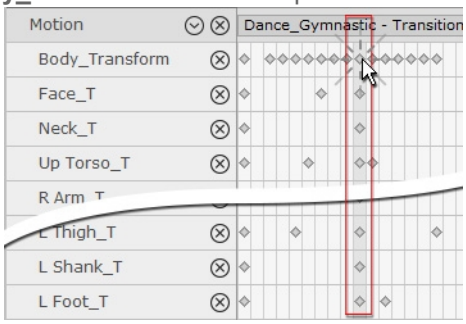
Set new pose



Motion results

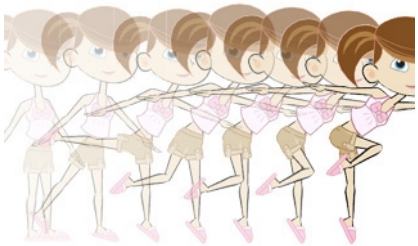
4. If you wish to keep the middle pose in Step 2, then you must click the **Add Key** button on the **Timeline** or double-click on the frame of the **Body_Transform** track in Step 2 to retain the pose.





The desired pose

5. Modify the ending pose key. The result should be as below:

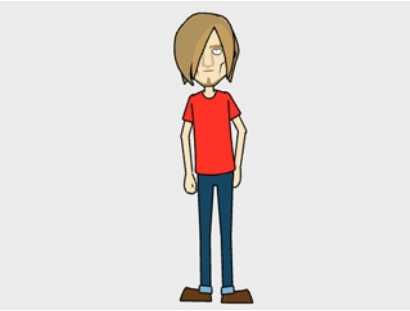


Deforming Body Parts to Dramatize 2D Motions

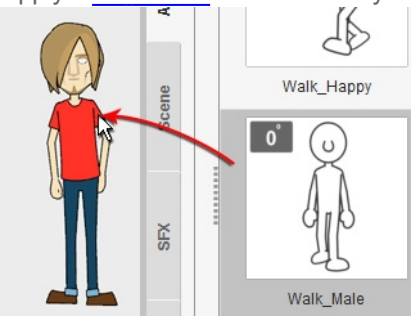
In addition to do the body part transforming to exaggerate your character's motions, you can also collaborate with the **Free Form Deformation** (**FFD**) feature to make the motion even more dramatic.

*Please note that the distortions to the facial features are not supported.

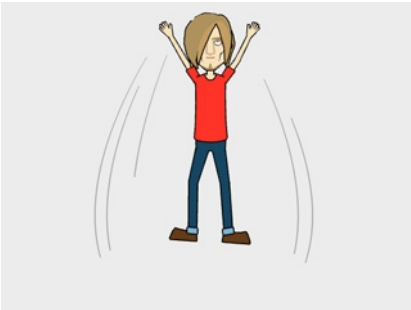
1. Apply a G1 or G2 character.



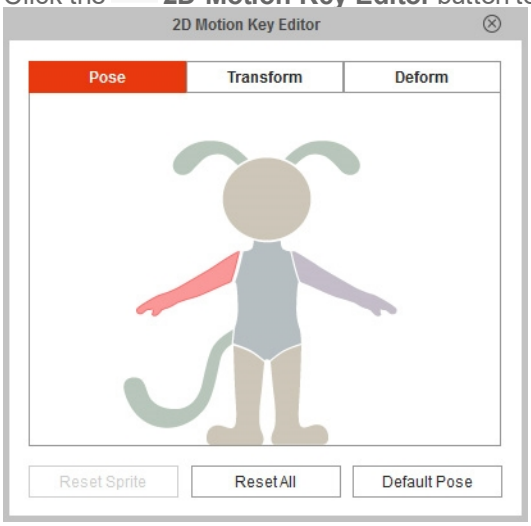
2. Apply a 2D motion from the library.



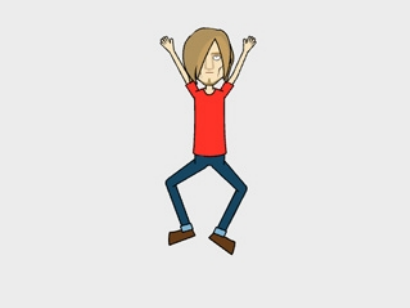
3. The character will start to perform the applied 2D motion.



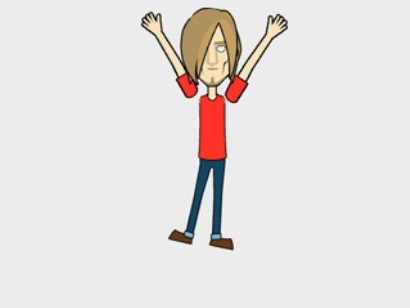
4. Click the **2D Motion Key Editor** button to open the panel.



5. Go to the time frame when you want to set another motion layer key (in this case, the frame the character jumps high).



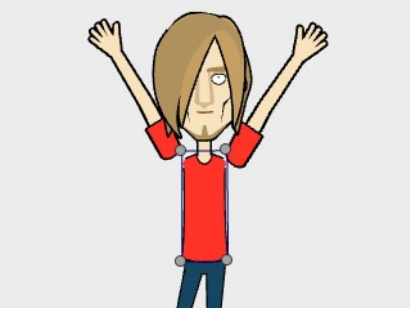
6. Switch to the **Body** tab and adjust the transformation of a body part.



Note:

Please refer to the Using Body Transform - Transform any Body Parts section for more information.

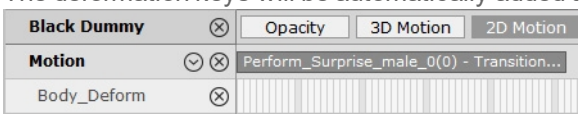
7. Switch to the **Deform** tab. Select the body part you want to adjust.



8. On the working area, drag the four control points to distort the body parts.



9. The deformation keys will be automatically added to the timeline of the character.



10. Play back to view the tweening results caused by the **Motion Layer** and **Deform** keys.



Utilizing the Action Menu for Body Motion

CrazyTalk Animator provides a feature for you to embed motions to a character. Simply use the right-click menu to command the character to act the motion. The character can then be saved together with all the action commands.

Using the Action Menu for Motions

1. Select a character containing an action menu with body motions.



2. Click the **Action Menu** button.



3. Select any command except the **Action Menu Editor**.



4. The character will then start to perform the motion command.



See Also:

- Applying an Action Menu from the Library
- Defining a Custom Action Menu
- Collecting Expressions or Motion Clips

Setting Custom Default Pose with Action Menu

When you apply a G2 character, you may notice that the character stands in a certain pose, which is so-called Default Pose. However, you may consider them mild and want to define custom default pose for your characters.



The characters with given default poses.



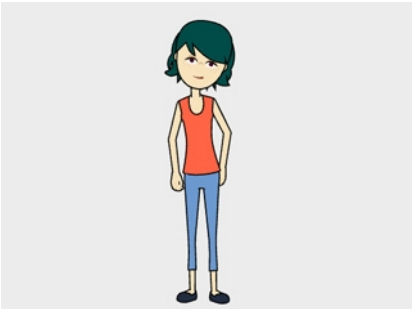
Customized default poses reveal the personalities of each character.

You are allowed to customize the default pose by using the **Action Menu**. The benefit to create a custom default pose are:

- Set an appropriate pose that matches or strengthen the character's personality.
- Sharing a character with custom default pose with your co-workers for group working in creating animations.

Step 1: Creating Custom Motion Pro & Pipeline

1. Apply a G2 character (the default pose is baked within it).



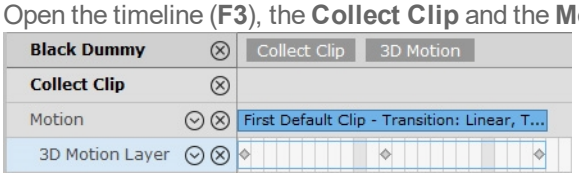
2. Have the character act a certain motion.



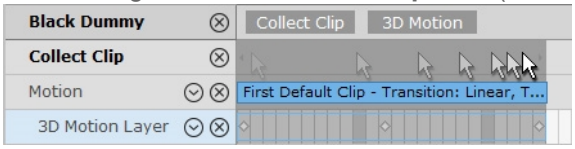
Methods:

- Applying a motion from the library.
- Use the **3D Motion Key Editor** to manually generate key-frame pose or animation.

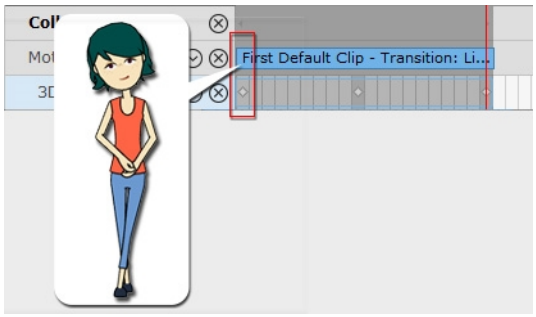
3. Open the timeline (**F3**), the **Collect Clip** and the **Motion** track of the character.



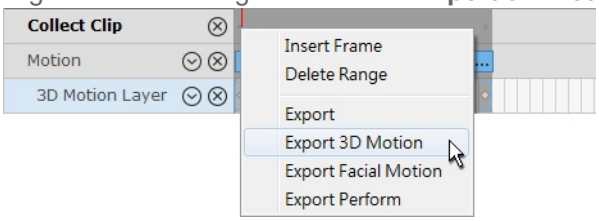
4. Make a range within the **Collect Clip** track (one-frame range is allowed).



Note:
Please make sure that the first frame of the motion in the range contains a desired pose that is suitable for the character.

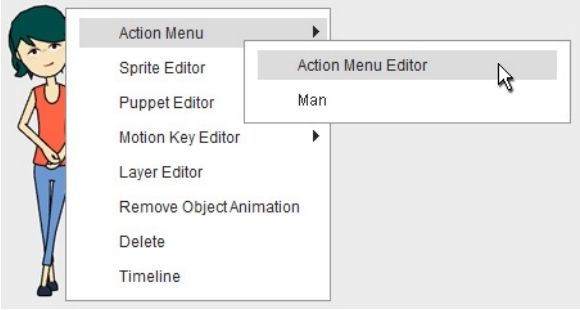


5. Right click in the range and execute **Export 3D Motion** command. Save the range as a new 3D motion file.

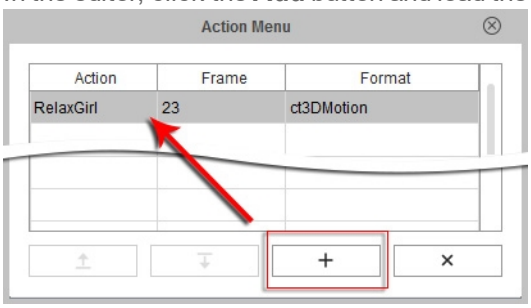


Step 2: Loading Motion Clip to Action Menu

1. Right click on the character and select **Action Menu** >> **Action Menu Editor**.



2. In the editor, click the **Add** button and load the motion file created in the previous steps.



The pose in the first frame of the motion will turn to be the default pose of the character.

Note:

You may click the **Default** button in the **3D Motion Key Editor** to preview the new default pose of the character.

3. Add the character to the custom library. Each time the character is applied, it strikes a default pose (you may also see the pose is used as the thumbnail of the character file).



Applying an Action Menu from the Library

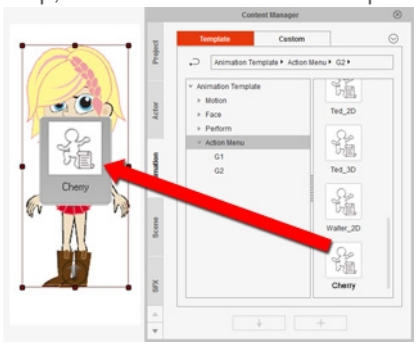
The easiest way to embed an action menu to a character is through the **Content Manager**. You may apply, command and then re-apply another template to have the character command various expressions, or motions, with a couple of mouse clicks.

Applying an Action Menu

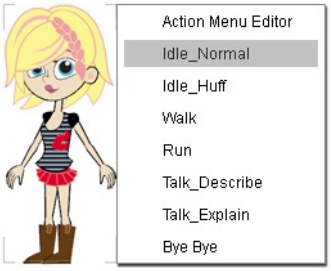
1. Select a character in the **Stage Mode**.
2. Click the **Action Menu** button. You will only see the **Action Menu Editor**, in the working area.



3. Go to the **Action Menu** content folder in the **Animation** tab of the **Content Manager**. Double click, or drag and drop, a desired action menu template from the library.



4. Click the **Action Menu** button.
5. You will see all the commands compacted in the template. Pick one command and the actor will start performing accordingly.

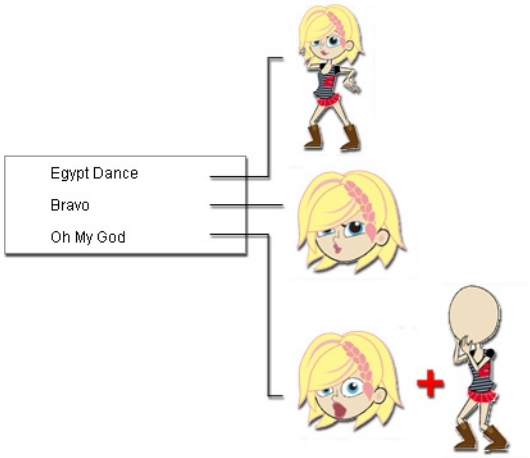


Defining a Custom Action Menu

Instead of applying action menus from the **Content Manager**, you can also define your own custom action menus.

What can be Stored in an Action Menu?

An action menu can contain commands for **Body Motions**, **Facial Expressions** and even **Perform** files (A perform file consists of expressions and motions).



Add Commands into Action Menu

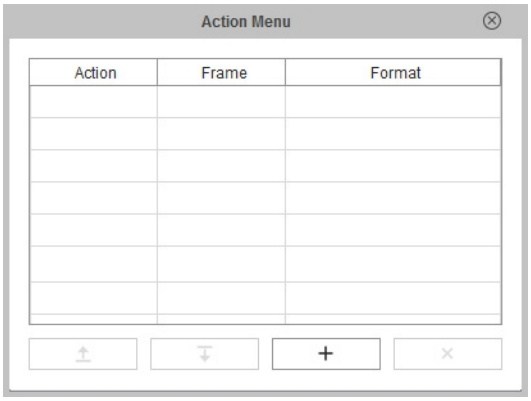
1. Select a character in the **Stage Mode**.



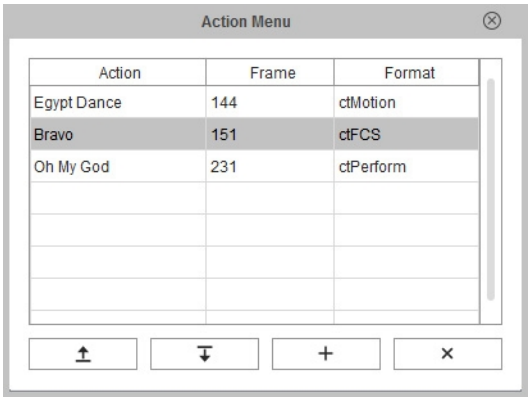
2. Click the **Action Menu** button on the left-side tool bar. Alternatively, you may right-click on the character and select the **Action Menu** on the right-click menu.
3. You will see **Action Menu Editor** in the working area. Click it.



4. Click the **Add Motion** button in the **Action Menu** panel. It is empty by default.



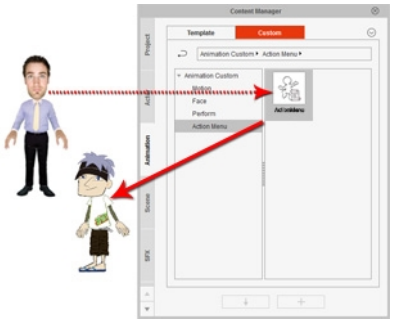
5. Browse to the template folder of **CrazyTalk Animator**.
   The path of the template folder is:
   XP: C:\Documents and Settings\All Users\Documents\Reallusion\Template\CrazyTalk Animator2 Template\
   Win 7: C:\Users\Public\Documents\Reallusion\Template\CrazyTalk Animator2 Template\
6. Load any template file from the **Face**, **Motion** or **Perform** folder. The formats supported are ***.ctFcs**, ***.ctMotion**, ***.ct3DMotion** and ***.ctPerform**.



7. Optionally repeat Step 2 to 5 until all the desired motions or facial expressions are added into the menu as a command.



8. Save this custom **Action Menu** into the **Custom Library** for re-use on any other characters.



Note:

- If you have created expressions, motions or perform files by Collecting Expressions or Motion Clips, then you are also allowed to load and convert them into new commands.

Pro & Pipeline

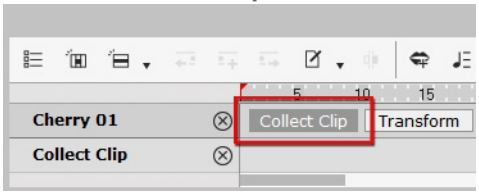
Collecting Clips for a Character

In addition to using the templates from the **Content Manager**, you are also allowed to make custom clips, to apply to any character, or define the clip as one of the commands in the action menu.
*Please note that this feature is for the **Pipeline** and **Pro** versions only.

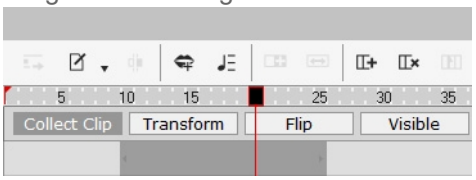
1. Select a character that already has expressions and motions.



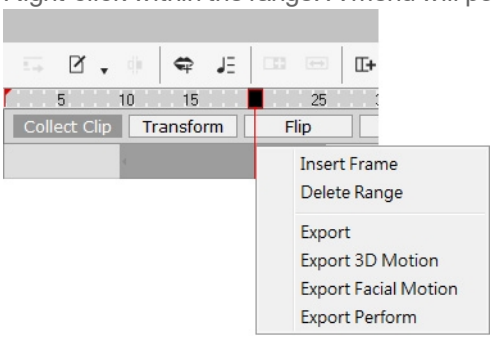
2. Click the **Show Timeline** button (Hotkey: F3).
3. Press the **Collect Clip** button down to show its track.



4. Drag to make a range to collect the current motions or expressions into a clip.



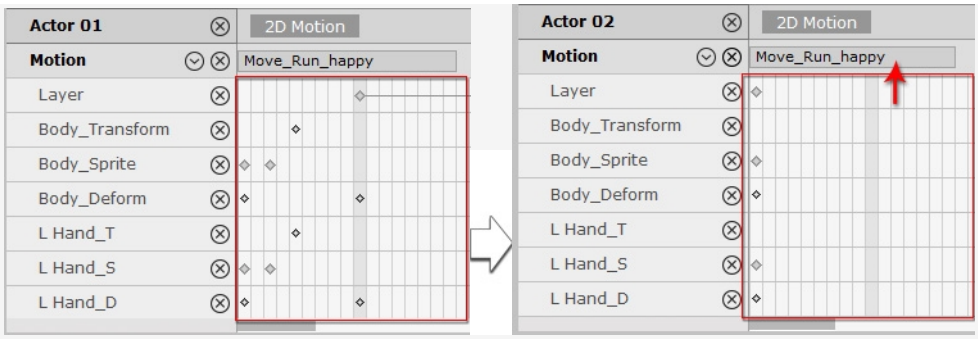
5. Right-click within the range. A menu will pop up.



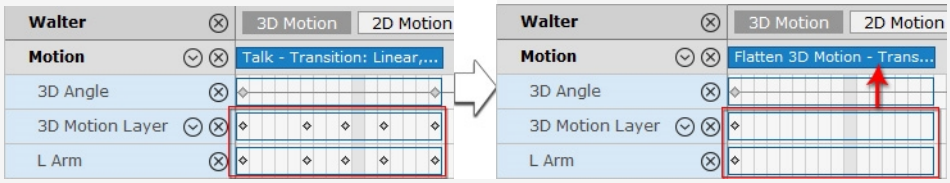
- **Export**: Merge and export all the keys and clips in the **Sub-tracks** (under the **Motion** main track) within the range as a *.ctMotion file.
- **Export 3D Motion**: Merge and export all the keys and clips in the **Motion** track and **Sub-tracks** (under the **3D Motion Layer** track) within the range as a *.ct3DMotion file.
- **Export Facial Motion**: Merge and export all the keys and clips in the **Face Motion** track and **Sub-tracks** (under the **Face Motion** main track) within the range as a *.ctFCS file.
- **Export Perform**: Merge and export all the keys and clips in the **Motion**, **Face Motion** track and **Sub-tracks** (under the **Motion** and **Face Motion** tracks) within the range as a *.ctPerform file.

Note:

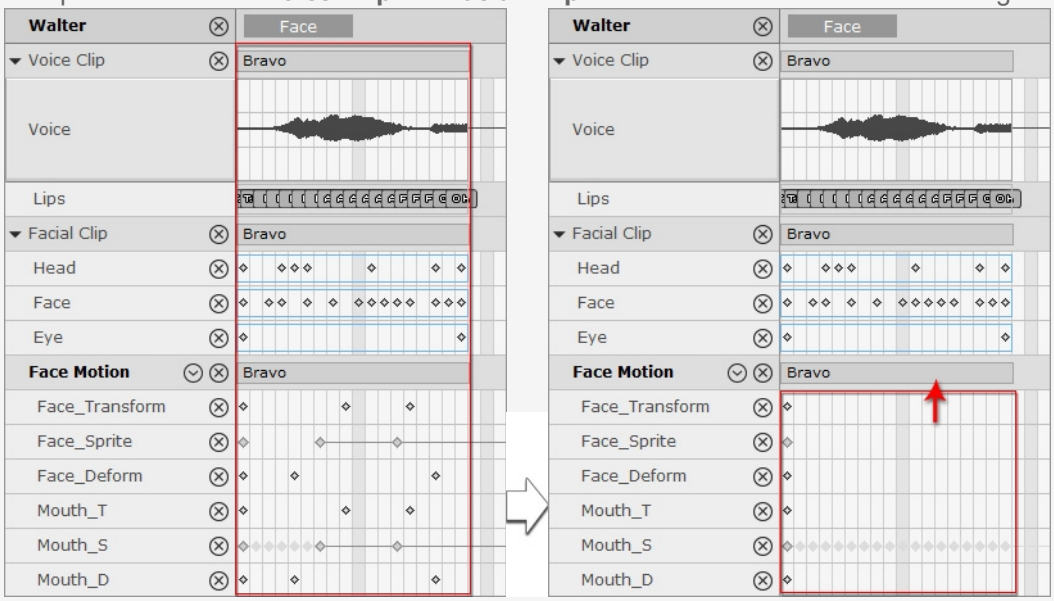
- After you once again import the exported 2D motion clip (*.ctMotion), you will find that all the keys have been flattened into a single clip.



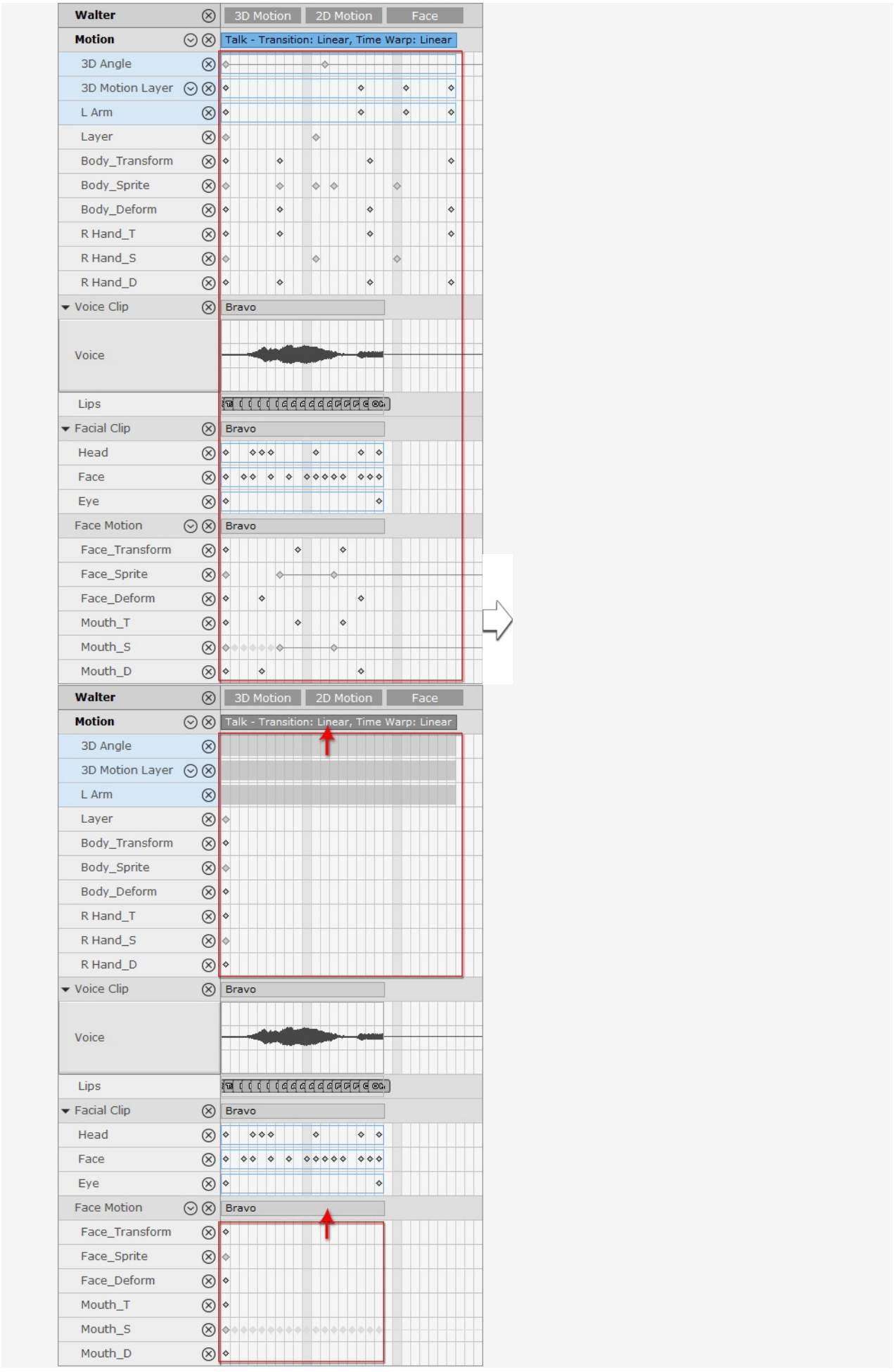
- After you once again import the exported 3D motion clip (*.ct3DMotion), you will find that all the keys (Angle keys excluded) have been flattened into a single clip.



- After you once again import the exported facial motion clip (*.ctFCS), you will find that all the keys except for those in the **Voice Clip** and **Facial Clip** tracks have been flattened into a single clip.



- After you once again import the exported Perform clip (*.ctPerform), you will find that all the keys except for those in the **Voice Clip** and **Facial Clip** tracks have been flattened into a single clip under the **Motion** and **Face Motion** main tracks respectively.


Walter
3D Motion
2D Motion
Face
Motion
Talk - Transition: Linear, Time Warp: Linear
3D Angle
3D Motion Layer
L Arm
Layer
Body_Transform
Body_Sprite
Body_Deform
R Hand_T
R Hand_S
R Hand_D
Voice Clip
Bravo
Voice
Lips
Facial Clip
Bravo
Head
Face
Eye
Face Motion
Bravo
Face_Transform
Face_Sprite
Face_Deform
Mouth_T
Mouth_S
Mouth_D
Walter
3D Motion
2D Motion
Face
Motion
Talk - Transition: Linear, Time Warp: Linear
3D Angle
3D Motion Layer
L Arm
Layer
Body_Transform
Body_Sprite
Body_Deform
R Hand_T
R Hand_S
R Hand_D
Voice Clip
Bravo
Voice
Lips
Facial Clip
Bravo
Head
Face
Eye
Face Motion
Bravo
Face_Transform
Face_Sprite
Face_Deform
Mouth_T
Mouth_S
Mouth_D

- You may use the custom clip files with the following methods:
  - Drag and drop the file onto a target character.
  - Defining Custom Action Menu

Collecting Clips for Props

If you create a prop (containing single or multiple sprites) with animations, and you want to export the animation, then follow the steps below:

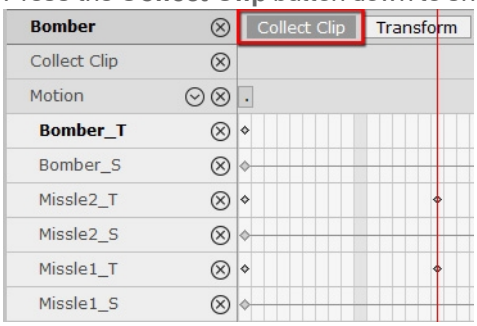
Note:

Collecting Clip only collect the data from the **Transform**, **Deform**, **Sprite Switch** and **Opacity** track, the data in the **Transform** track will not be collected.

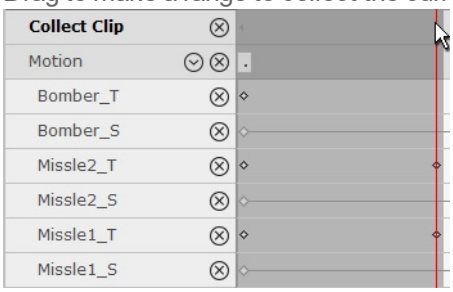
1. Select a prop (Multiple sprites) with **Sprite Transform** or **Sprite Switch** animations.



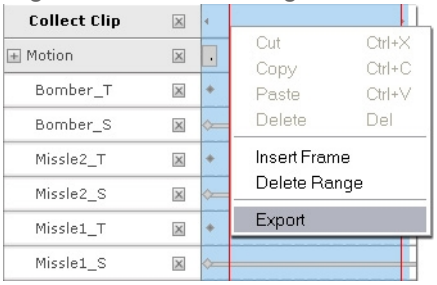
2. Click the **Show Timeline** button (Hotkey: F3).
3. Press the **Collect Clip** button down to show its track.



4. Drag to make a range to collect the current animations into a clip.



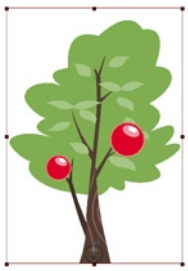
5. Right click within the range and select **Export**. Save it as an animation file (*.ctAnim)



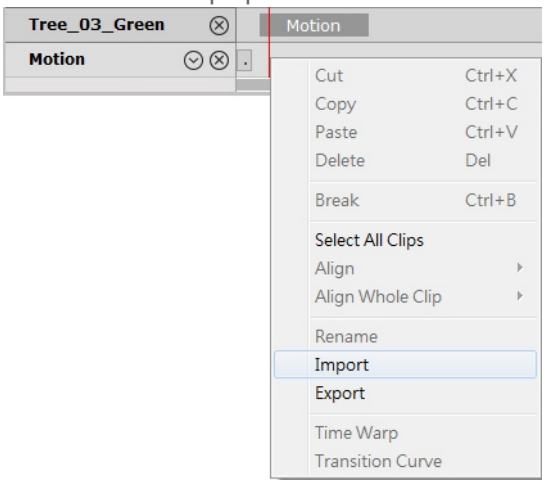
Applying Animations to Props

If you have exported the animation of a prop, then you may apply this animation to any other props.

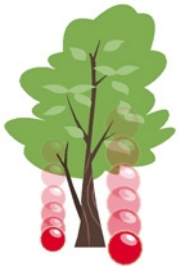
1. Select a new prop.



2. Right-click on where you want the motion to start in the prop's **Motion** track, and select **Import** to load the animation into the new prop.



3. The new prop will then start the animation.

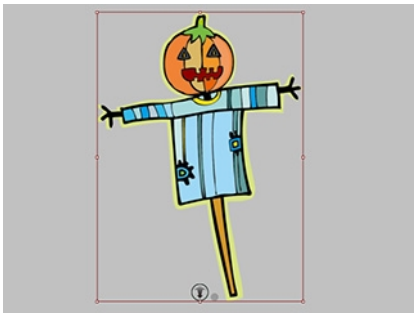


Using the Motion Key Editor for Free Bone Characters (New for v3)

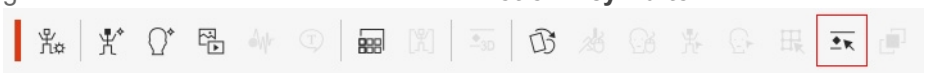
The **Motion Key Editor** is used for creating motions for **G3** and **Free Bone** characters with the method named **Key Frame Motion**.

To fully understand **Key Frame Motion**, you will need to remove all the motion clips in the **Motion** main track. Then create your own key by the **Motion Key Editor** for the actor. Please follow the steps below to generate a **Key Frame Motion**.

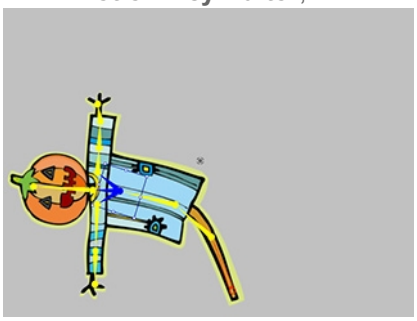
1. Select a **G3** free bone character.



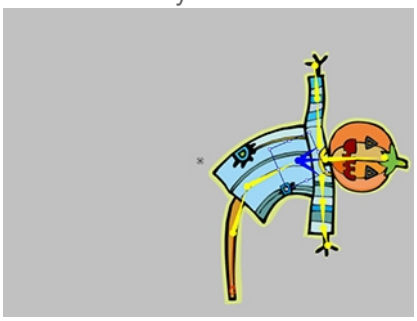
2. go to the desired time frame and click the **Motion Key Editor** button in the Toolbar.



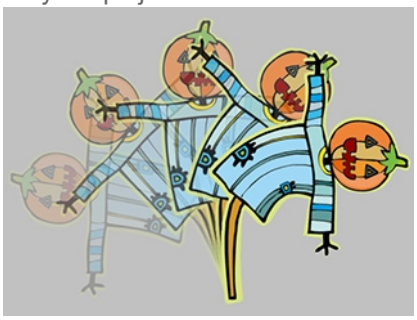
3. In the **Motion Key Editor**, select a bone to set a motion key with **IK** or **FK** methods.



4. Go to another time frame.
5. Add another key with **IK** or **FK** methods.

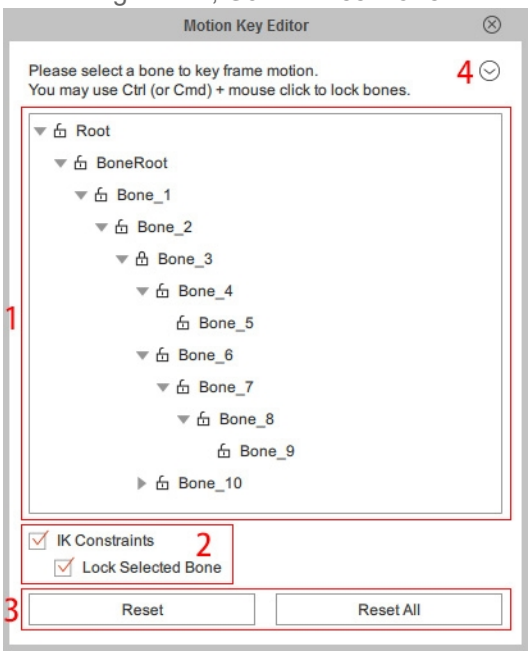


6. Play the project to see the results. The transition effect will automatically be generated between these two keys.



Introduction of the Motion Key Editor (New for v3)

In the Stage mode, **G3** and **Free Bone** characters' motion can be created by using the **Motion Key Editor**.



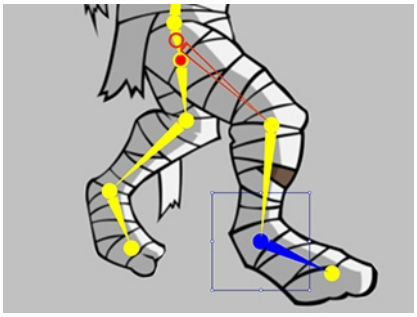
	Name	Description
1	**Bone Tree View**	You can see the structure of the bones and the locking status for each bone of the free bone character.
2	**IK / FK Switch**	Use the boxes to switch between **IK** or **FK** methods. You can also freely determine the root bone for the **IK** chain.
3	**Reset Methods**	These two buttons are used to reset the transformation of the bones in the current layer where the selected bone is, or of every layer.
4	**Menu of the Motion Key Editor**	Click this button to show the menu for the **Motion Key Editor**. 

- **Parallel**: Align all bones to the left side of the list view.
- **List Expand**: To expand the entire tree view.
- **List Collapse**: To collapse the entire tree view.

IK / FK Switch

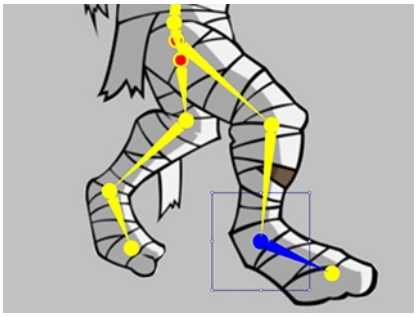
IK / FK Switch

The **IK Constraints** box is used to determine if you wish to use the **IK** method or the **FK** methods. Activate it if you want to set a motion key with the **IK** method.



IK Constraints: **Activated**

IK and **FK** method can be utilized

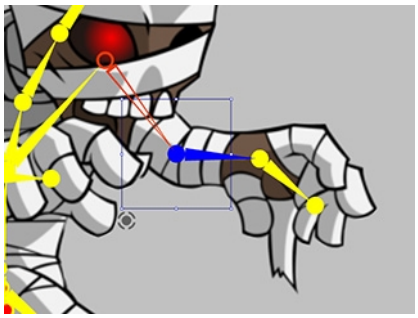


IK Constraints: **Deactivated**

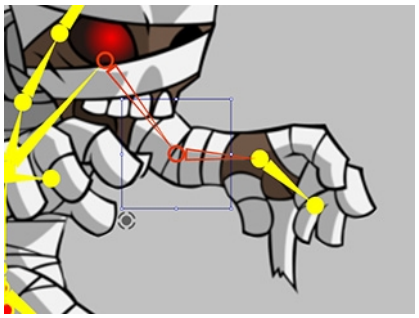
Only **FK** method can be utilized

Customizing Root Bone of IK Chain

If you select a bone and then activate the **Lock Selected Bone**, then the bone will turn to be the new root of an IK chain. It can be rotated by you but it cannot be influenced by its any child bones.



Lock Selected Bone: OFF

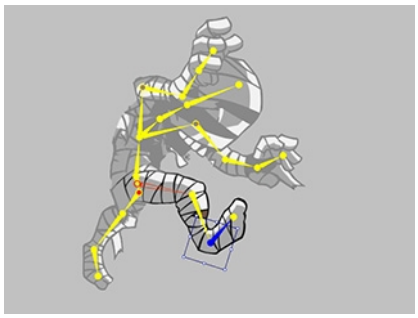


Lock Selected Bone: ON

Reset Methods

Resetting Bones in a Layer

The **Reset** button can be used to reset the transformation of each bone of a layer in which any one of the bones is selected.



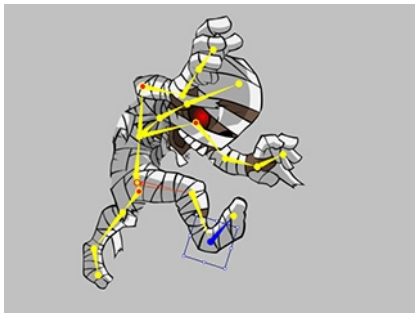
Reset is clicked



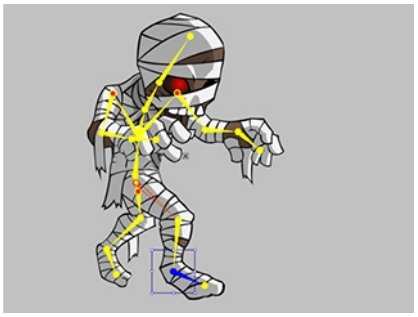
Reset is clicked

Resetting All Bones

The **Reset All** button is used to reset the transformation of every bone of the character.



Reset is clicked



Reset All is selected

Setting Layer Keys for Characters

After you apply motions to character, the layer order will be determined by auto-calculating the bone structure of the character. However, the layer order is not always fixed throughout the whole project. You may set layer keys in different time frames by moving the body parts up or down.

1. Select a character whose leg swings. With the initial layer order; the right leg will always be behind the left leg.

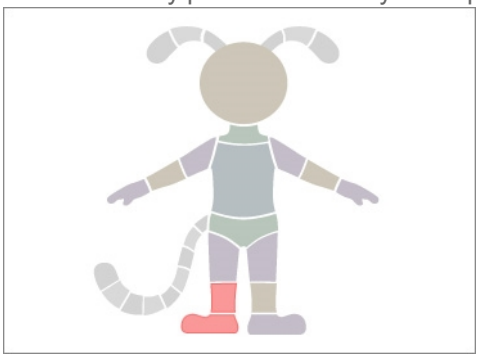




2. Go to the time frame before the character crossed legs.
3. Open the **Layer Editor** by clicking the **Layer Editor** button.



4. Select the body part of the dummy in the panel (you may hold the **Ctrl** key for selecting multiple body parts).



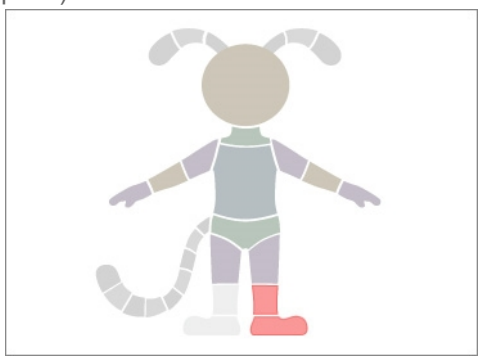
5. Click the **Send to Front** button.

Note:

- **Send to Front**: Send selected body parts one layer above target ones.
- **Send to Back**: Send selected body parts one layer below target ones.

- **Move to Top**: Send selected body parts to the top layer.
- **Move to Bottom**: Send selected body parts to the bottom layer.

6. Click on the target body part above which you want to move (you may hold the **Ctrl** key to select multiple target body parts).





7. Go to another time frame where you need the layer order to be reset.
8. Click the **Release Key** button to remove the effect of the key. The initial layer order will now be retrieved.

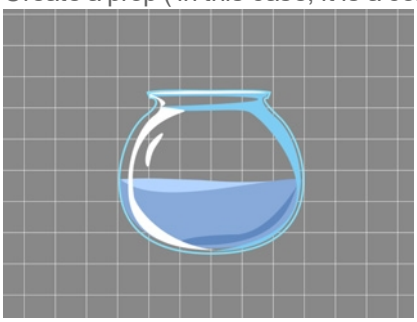


9. Play the project to see the result.

Using Prop Key Editor (New for v3)

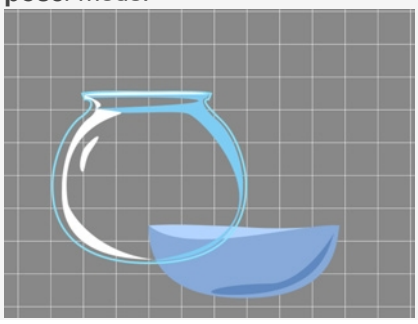
In addition to applying **Elastic Motion Templates**, you are allowed to create custom elastic motions with **CrazyTalk Animator**.

1. Create a prop (in this case, it is a compound prop with fish bowl and water).

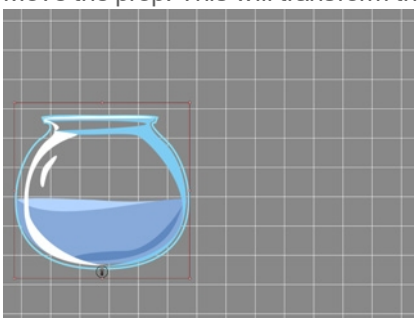


Note:

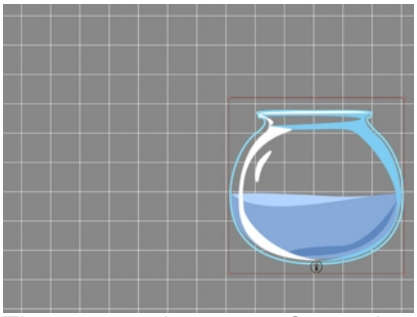
This prop is deliberately designed for this section. It has two components and it was composed inside the **Composer** mode.



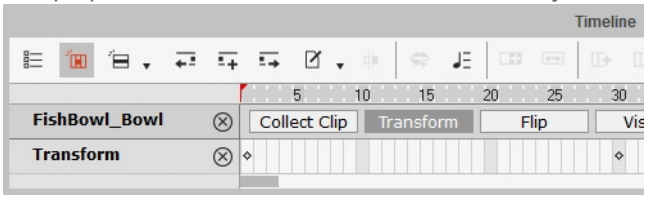
2. Go to a time frame.
3. Move the prop. This will transform the entire composed prop.



4. Go to another time frame and move the prop again.



The prop now has a transform animation. The keys are set to the **Transform** track of the prop.

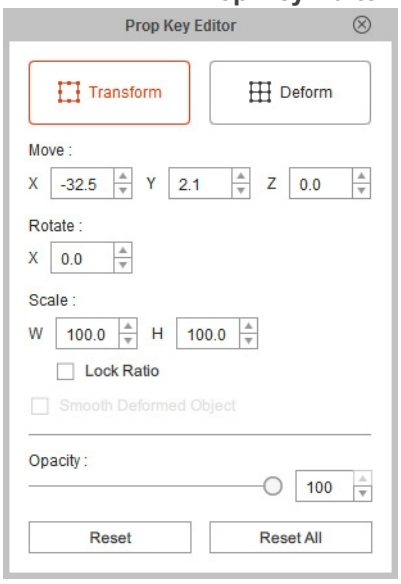


5. Go to the time frame when the animation starts.

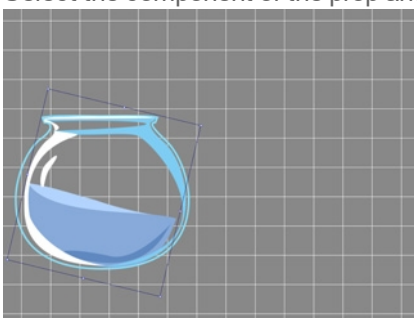
6. Click the **Prop Key Editor** button on the Toolbar.



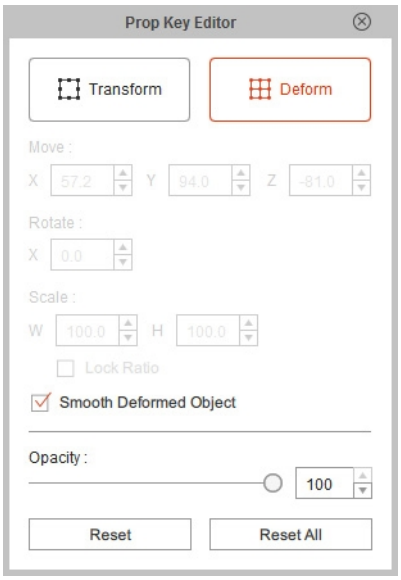
You will see the **Prop Key Editor** display on the screen.



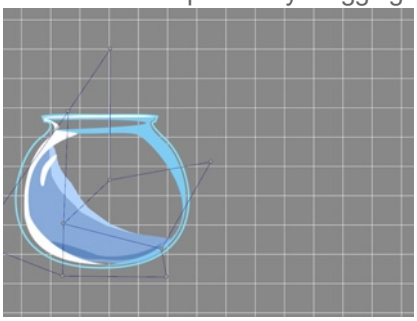
7. Press down the **Transform** button to enter the transforming mode.
8. Select the component of the prop and transform it (in this case, the water).



9. .Press down the **Deform** button to enter the deforming mode.

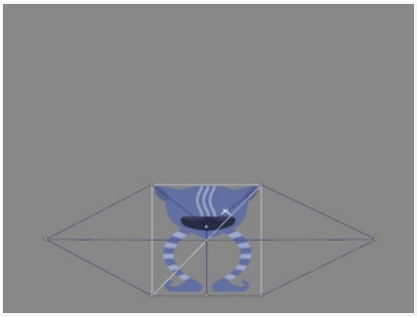


10. Deform the component by dragging the 9 control points of the deforming box.

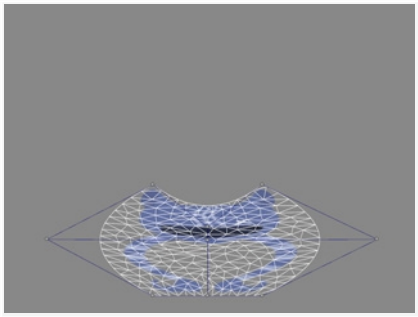


Note:

In order to see the **Deform** effect working on another prop, you must select the prop, open the **Prop Key Editor**, switch to the **Deform** mode and activate the **Smooth Deformed Object** box in order to subdivide the prop.

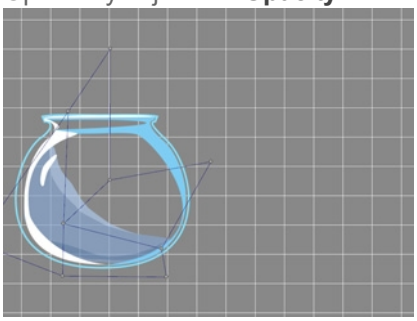


Smooth Deformed Object is **OFF**

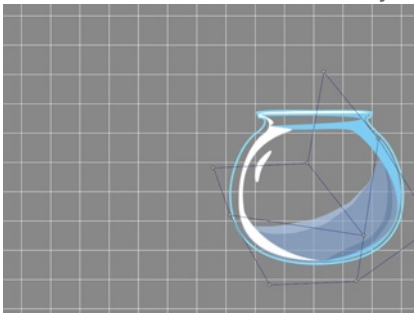


Smooth Deformed Object is **ON**

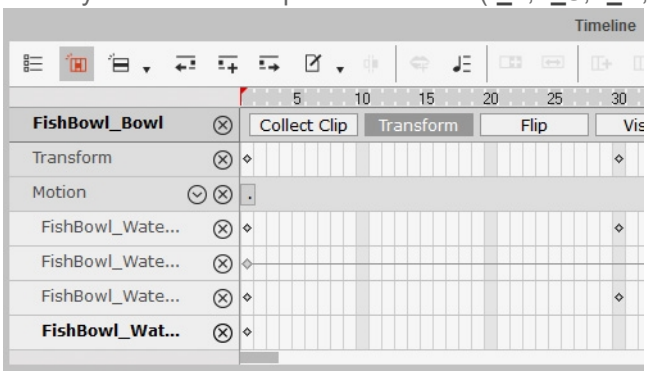
11. Optionally adjust the **Opacity** value of the component.



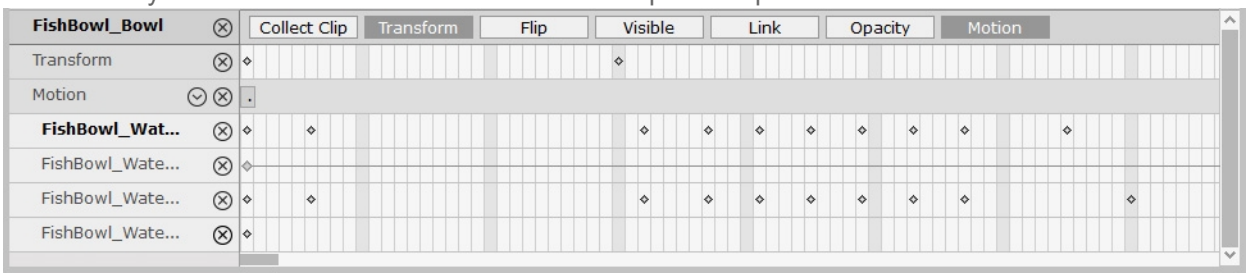
12. Go to the other time frame and adjust the **Transform**, **Deform** and **Opacity** in the same manner.



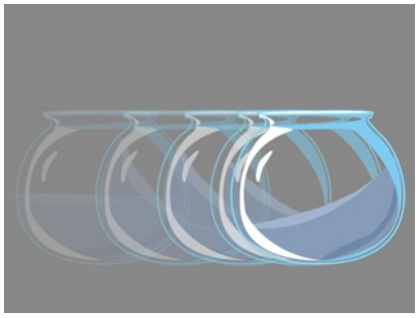
13. The keys are set to the sprite-level tracks (***_T**, ***_S**, ***_D**, ***_O**).



14. Add more keys in order to fine-tune the animation of the sprite component.



15. Play back to view the animation. Fine-tune with the **Prop Key Editor** if necessary.



Applying Elastic Motions to Props (New for v3)

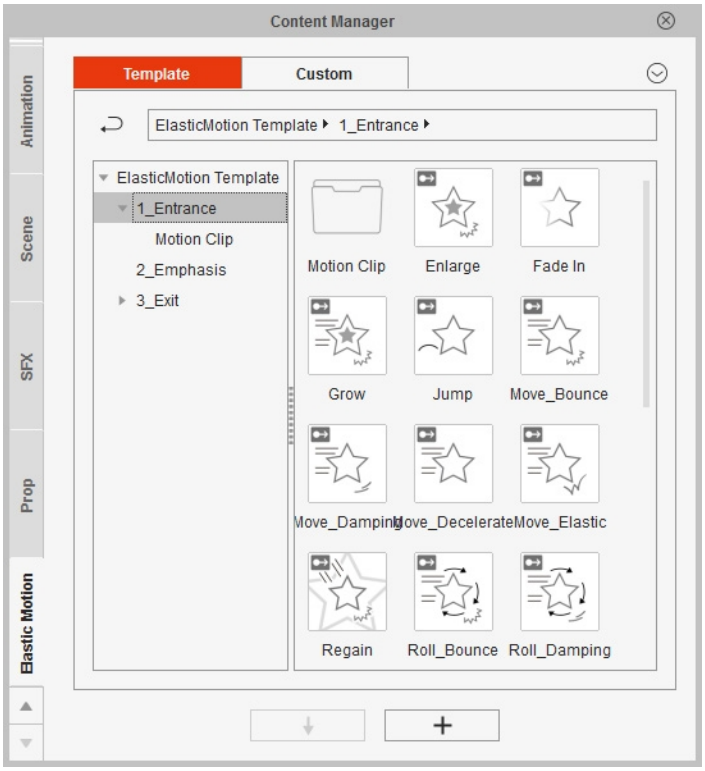
Usually, you create prop animations by mean of the key-frame-animation method. Instead of that, **CrazyTalk Animator** provides libraries in which well pre-made **Elastic Motion** templates are ready for applying. Most common animations can be found in the libraries and you just need to apply them to create lively animations for props.

Applying Elastic Motions to Props

1. Apply a prop.



2. Switch the Content Manager to the **Elastic Motion** >> **Template** tab >> **ElasticMotion Template** >> **1_ Entrance**.



3. Drag and drop one of the desired templates onto the prop to create an entrance animation.



The prop will then instantly perform the entrance animation of the template.



4. Switch to the **2_Emphasis** library and apply another template to the prop.



You will see the prop performing animation where it is.



5. Switch to the **3_Exit** library and apply another template to the prop.



The prop will then move out with the animation of the template.

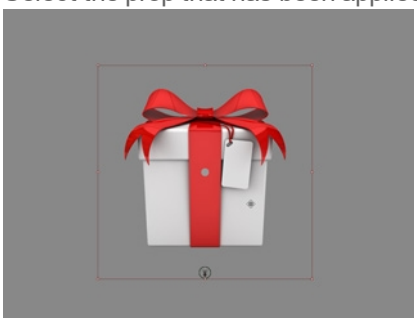


6. The prop's animation is thus created without spending a lot of time setting keys.

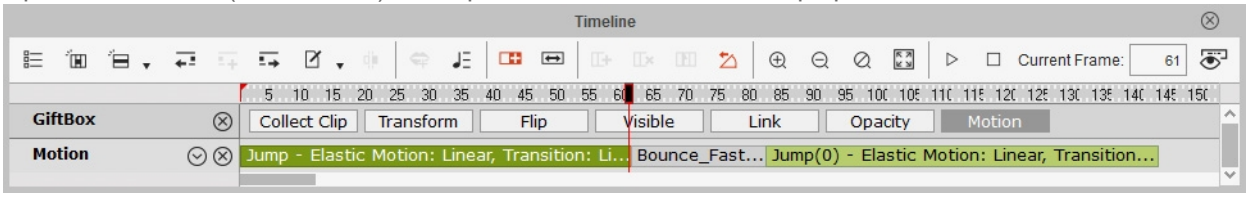
Adjusting Applied Elastic Motions

If you wish to adjust the applied elastic motions, then please follow the steps below:

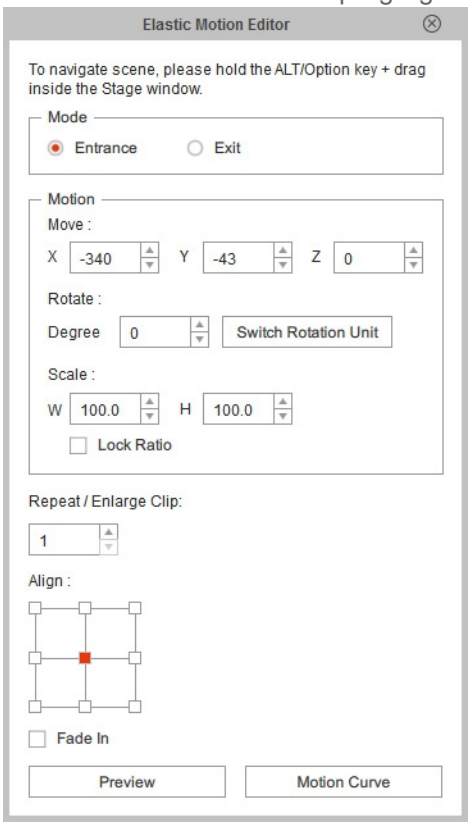
1. Select the prop that has been applied with elastic motions.



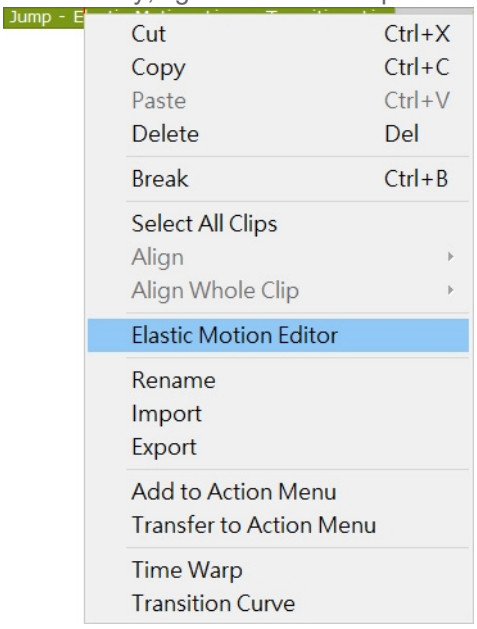
2. Open the **Timeline** (Shortcut: **F3**) and expand the **Motion** track of the prop.



3. Double-click on the motion clip highlighted in **Green** to open the **Elastic Motion Editor**.



Alternatively, right-click on the clip and select the **Elastic Motion Editor** item from the Pop-up menu.



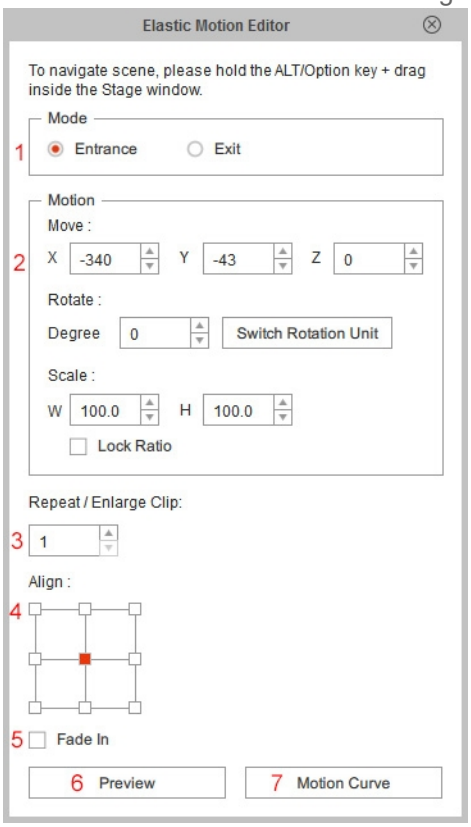
4. Adjust the settings in the editor to fine-tune the elastic motion.

Note:

If you wish to edit the applied elastic motion, then please refer to the **Introduction of Elastic Motion Panel** section for more information.

Introduction of Elastic Motion Panel (New for v3)

The Elastic Motion can be edited through the **Elastic Motion Editor** as shown below:

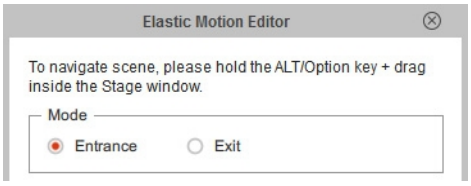


	Name	Description
1	**Mode** Pipeline Only	These two radio buttons switch the current clip to an entrance or exit animation.
2	**Motion**	You can adjust the **RTS** settings of the status of the prop at the start or at the end time.
3	**Repeat / Enlarge Clip**	Modify the number of this field to repeat and enlarge the current motion clip.
4	**Align**	Use this control to set the center position of the prop for rotating and scaling.
5	**Fade In / Fade Out**	Activate or deactivate this box in order to make the entering or exiting prop gradually become semi-transparent and vice versa.
6	**Preview**	Click this button to preview the elastic motion result of the selected animation clip.
7	**Motion Curve**	Click this button to switch to the **Motion Curve** panel for adjusting the transition method from the start point (blue bounding box) to the end point (black bounding box).

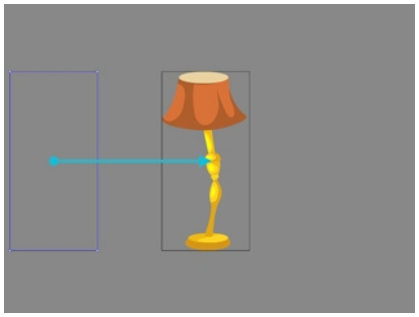
Entrance or Exit

The **Entrance** and **Exit** mode for a elastic motion clip is exchangeable. You can identify if a clip is entrance or exit one by two methods:

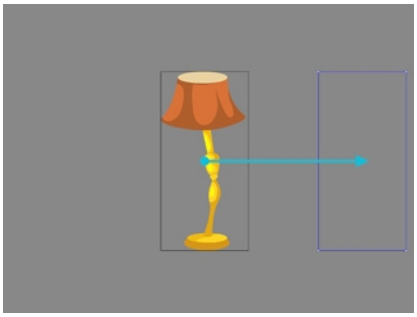
- Radio button in the **Elastic Motion Editor**: You can identify the clip by the chosen radio button. Pipeline Only



- **Arrow Direction** in the working area: When the blue arrow starts from a blue box, the clip is an **Entrance** clip; while when the clip is an **Exit** clip, the blue arrow points to the blue bounding box.



Blue arrow starting from a blue bounding box: **Entrance Clip**



Blue arrow pointing to a blue bounding box: **Exit Clip**

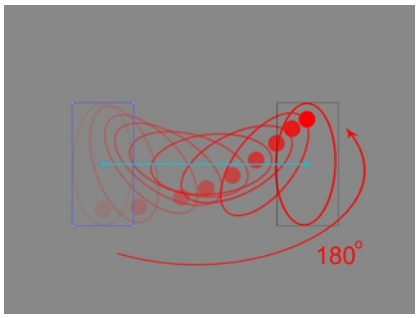
Note:

The settings in the **Motion** group in the **Elastic Motion Editor** is used to adjust the status of the **Blue Bounding Box**. The black box can not be adjusted.

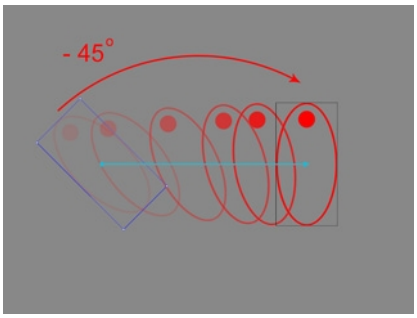
Rotation

The settings in the **Motion** group is used for modifying the blue bounding box. However, the **Rotation** in the settings is the most different from the traditional use of angle setting. You can click on the Switch Rotation Unit button to change the method for setting the angle of the blue bounding box.

- **Degree**: The **Degrees** determine the rotating degrees of the prop when the animation ends; the value range is from **-9999** to **9999** degrees. A negative value rotates the prop clockwise while a positive value turns it counterclockwise.

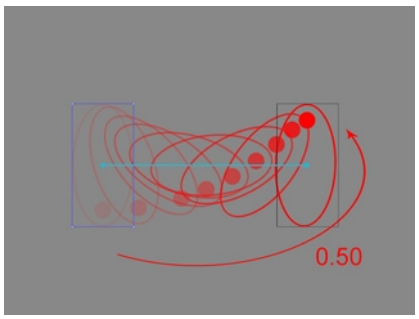


Degree = **180**

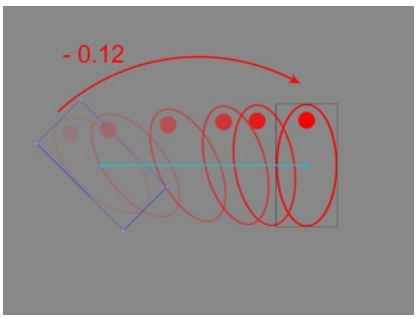


Degree = **-45**

- **Turns**: The **Turns** determines the rotating times for the prop; the value range is from **-27.77** to **27.77**. It allows two digits after the floating point. A negative value rotates the prop clockwise while a positive value turns it counterclockwise



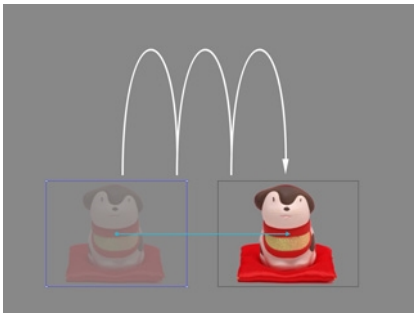
Turns = **0.50**



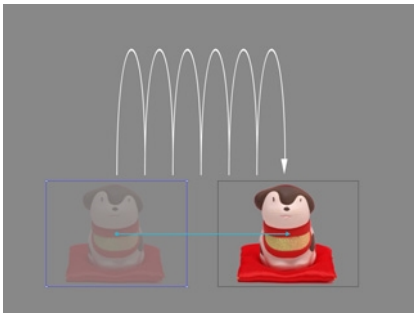
Turns = **-0.12**

Repeat / Enlarge Clip

This setting will extend the length of the animation clip by means of repeating the clip itself. It is different from the looping method because the looping method will always start from the position in the first frame of the clip, while the **Repeat / Enlarge Clip** ensures the props position from the last round when the animation stops.



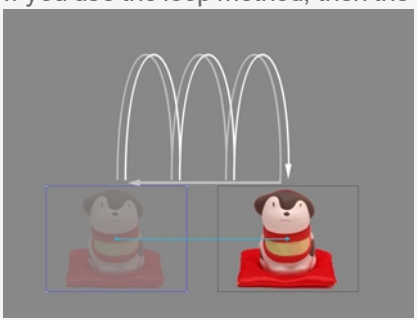
Repeat / Enlarge = 1



Repeat / Enlarge = 2

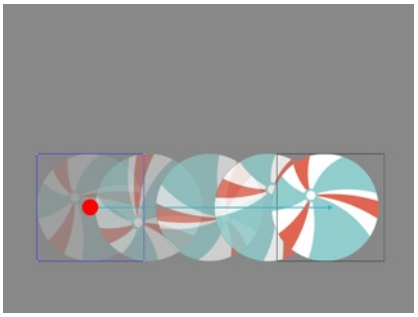
Note:

If you use the loop method, then the animation will always return to the start point after a animation round finishes.

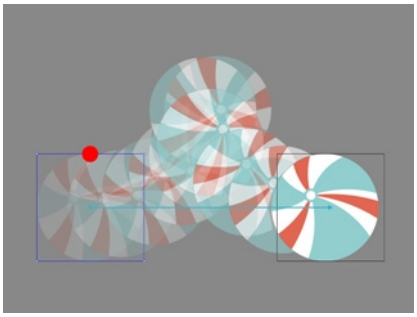


Align

The align feature is used to determine the center for rotating (described in the previous section).



Align = Center



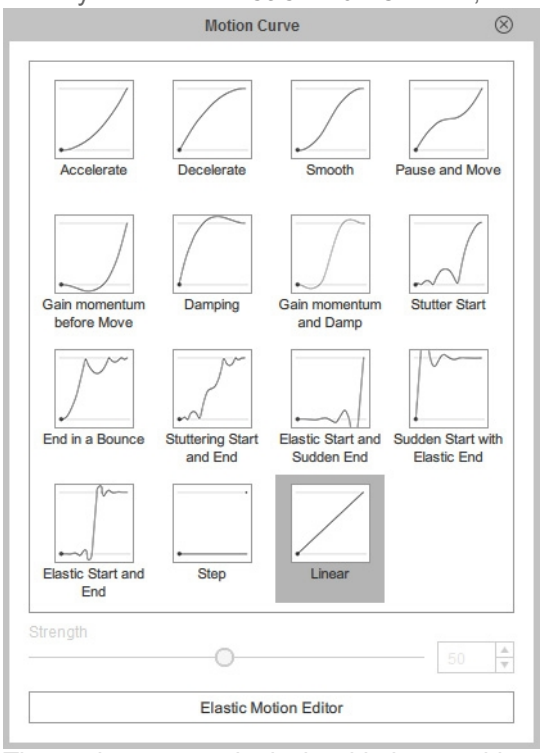
Align = Top

Note:

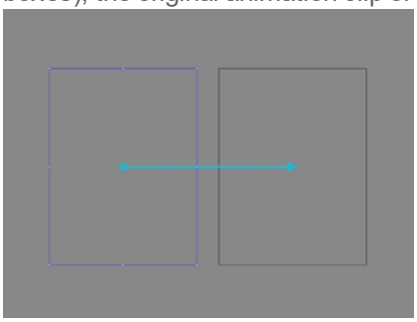
This feature does not affect the true pivot of the prop. It is only used as a rotating base.

Motion Curve

When you click the **Motion Curve** button, the **Elastic Motion Editor** will switch to the **Motion Curve Editor** mode.



The motion curve only deals with the transition method between the start and end point (the blue and black bounding boxes), the original animation clip of the prop is not influenced.



Creating Elastic Motions (New for v3)

Pipeline Only

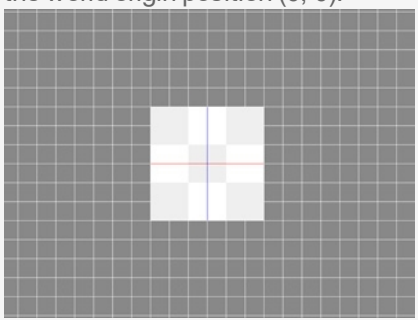
In addition to applying **Elastic Motion Template**, you are allowed to create custom elastic motions with **CrazyTalk Animator**.

1. Create a neutral prop.



Note:

Make sure that the prop's pivot is in the center of it. You can switch to the **Composer** mode to move the sprite to the world origin position (0, 0).



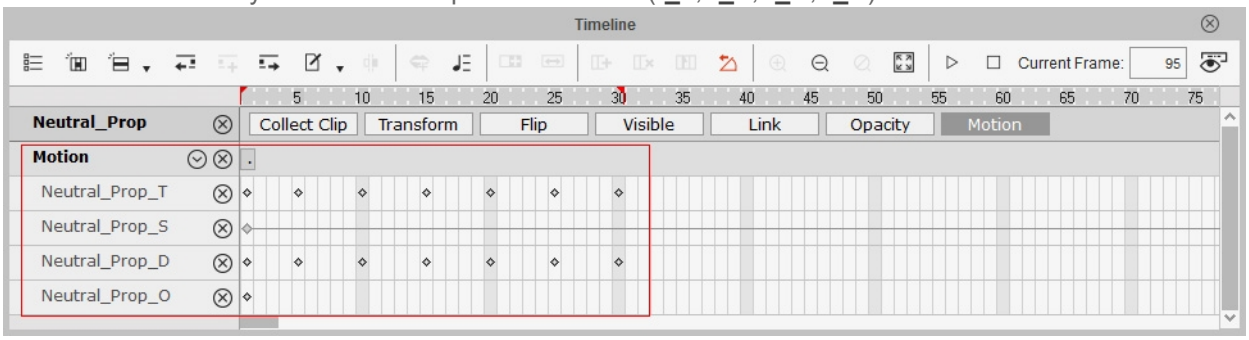
2. Click the **Prop Key Editor** button on the Toolbar.



3. Set **Transform and Deform keys** (sprite-level) in different time frames to generate key-frame animation of the prop (in this case, a jump and distortion animation).

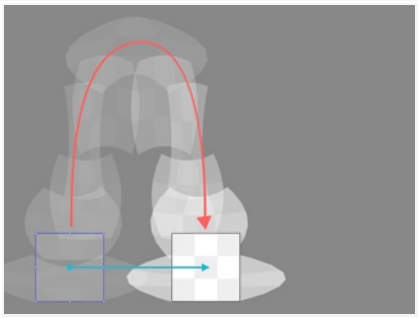


Make sure that the keys are set to the sprite-level tracks (***_T**, ***_S**, ***_D**, ***_O**).

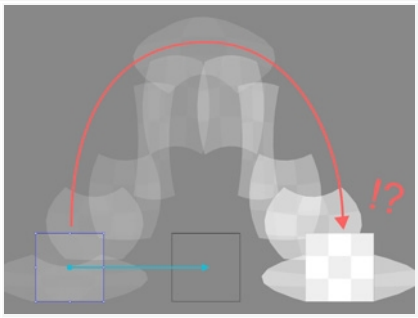


Note:

Make sure the sprite starts and ends the animation at the same position to ensure that the prop correctly falls within the start and end points (blue and black bounding box) when the animation is converted into an **Elastic Motion**.

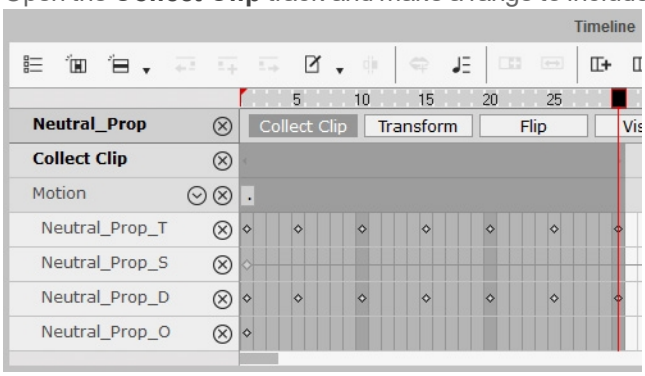


The animation starts and ends at the same position

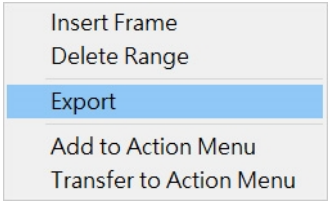


The end position offsets when the animation ends

4. Open the **Collect Clip** track and make a range to include this data.

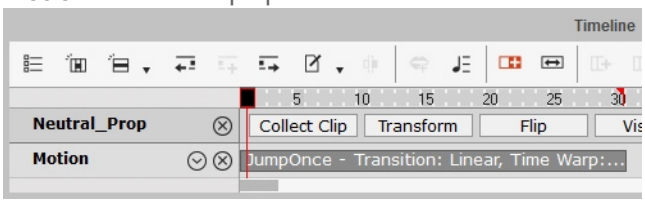


5. Right-click on the **Collect Clip** track in the range, select the **Export** item in the menu.

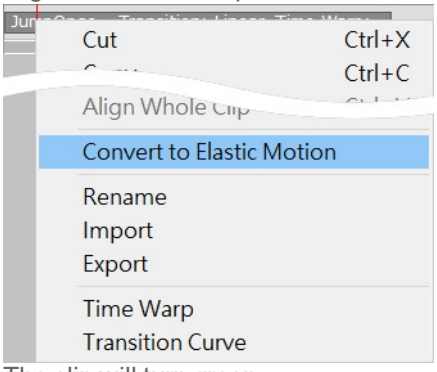


This step saves the data as a prop animation file (in ***.ctAnim** format).

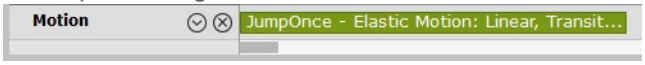
6. Drag and drop the animation onto a prop (it is suggested to use this prop), you will see an animation clip on the **Motion** track of the prop.



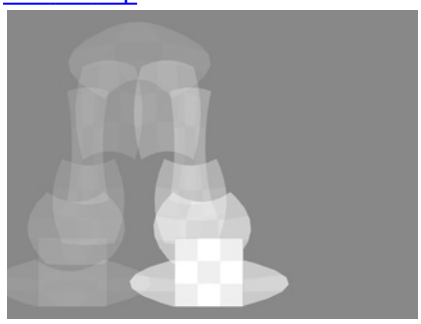
7. Right-click on the clip and select the **Convert to Elastic Motion** item in the menu.



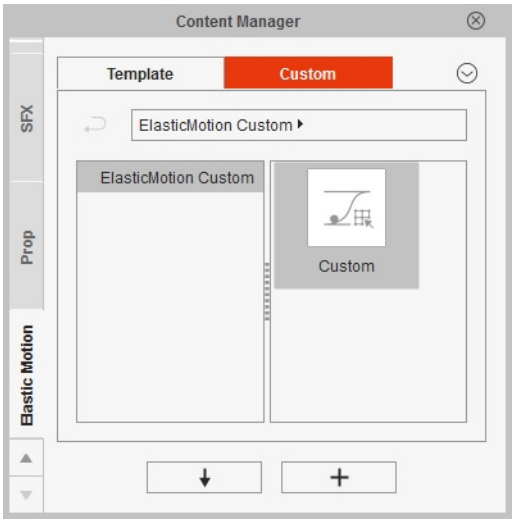
The clip will turn green.



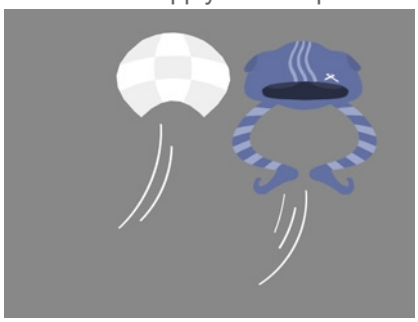
8. Edit the clip with the **Elastic Motion Editor**.



9. Make sure that the clip on the track is selected.
10. Open the **Content Manager** and switch to the **Elastic Motion** library.
11. Click on the **Add** button to add the selected clip into an **Elastic Motion** template (***.ctElastic**).

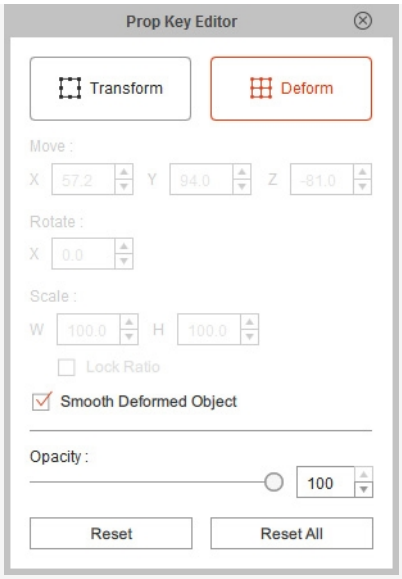


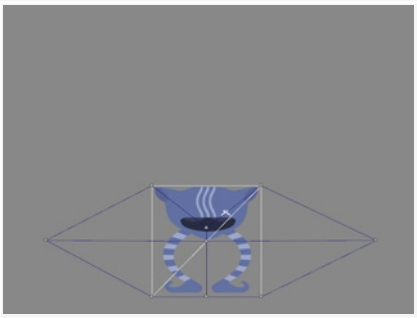
12. You can then apply this template to any other props.



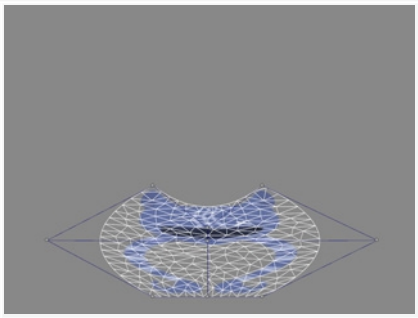
Note:

In order to see the **Deform** effect working on another prop, you must select the prop, open the **Prop Key Editor**, switch to the **Deform** mode and activate the **Smooth Deformed Object** box in order to subdivide the prop.





Smooth Deformed Object is **OFF**



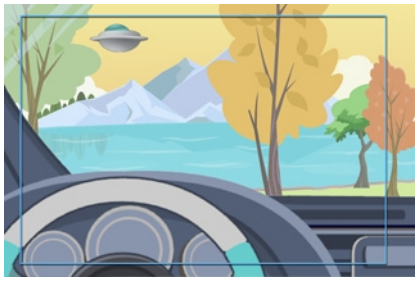
Smooth Deformed Object is **ON**

Using Live Camera

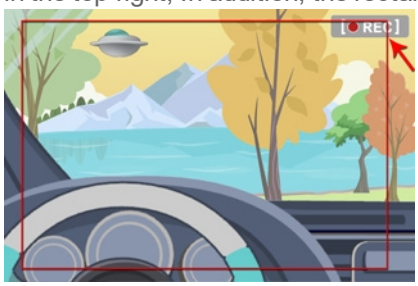
Most of the time you pan, zoom and rotate the **Preview Camera** to build a scene, and to add and edit characters and props without setting any keys to the camera. However, if you need to produce a story with camera movements for dramatic tension, then you can use the **Live Camera**.

Switching Camera

1. Build a scene.



2. Click on the **Camera Record Mode** button.
3. The working area will then switch to the **Live Camera** view. You can figure out the source of the view via the icon in the top-right, In addition, the rectangle **Safe Area** outline will change from blue to red.

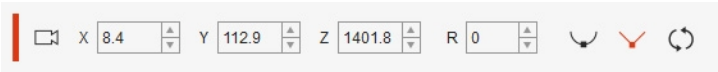


4. Click the **Camera Record Mode** button again to switch back to the **Preview Camera** view.

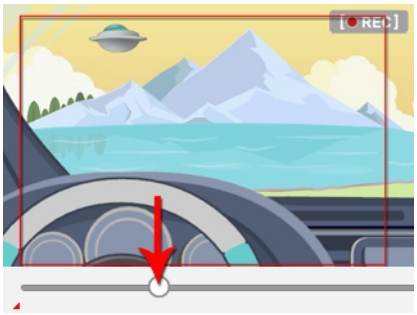
Using Live Camera

In the **Live Camera** mode you can pan, zoom and rotate the camera to auto-set a transform key to the animation camera.

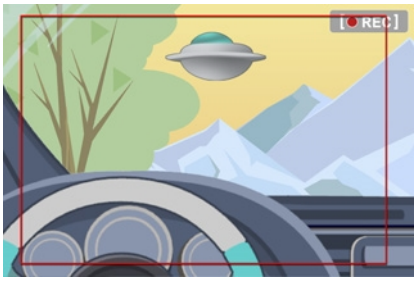
1. When you are in **Live Camera** mode, click the **Zoom**, **Move** or **Rotate** buttons to show the parameters on the **Property Tool Bar**.



2. Go to another time frame.



3. Enter values in the number fields of the tool bar to auto-set a key to the camera.



- You may use hotkeys to quickly set values instead of typing.
  - **Zoom**: Alt + Both mouse buttons (or Alt + Rolling the mouse wheel - can not be undo)
  - **Move**: Alt + Left mouse button
  - **Rotate**: Alt + Right mouse button
  - **Curve**: Camera moves at a slow-fast-slow pace to smooth its movement.
  - **Linear**: Camera moves at a constant speed.
- Click the Default Key **Reset Key** button to set a neutral key to the camera.

4. Repeat the steps until you complete the camera movements in the story.

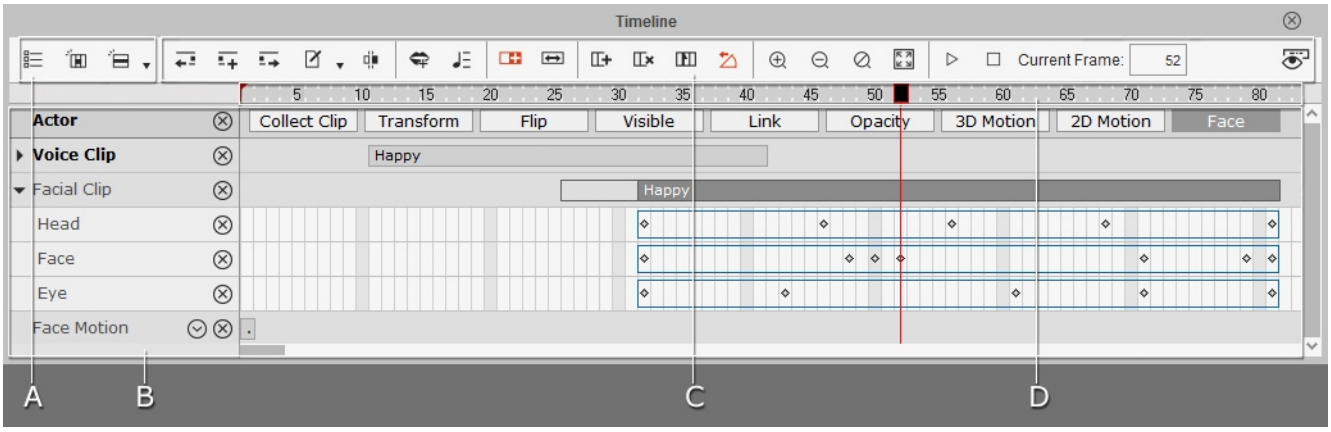
Note:

- You can determine the size of the **Safe Area** by setting the **Frame Size** or **Output Size** in the **Export Settings** panel.
- If you want to further edit other items inside of your project, then return to the **Preview Camera** to prevent from accidentally setting keys to the **Live Camera**.

Introducing the Timeline

Click the **Timeline** button on the play bar to open the **Timeline Editor**.

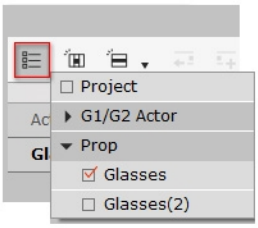
The **Timeline Editor** is where you edit animation keys and clips for actors, props, cameras, image layers, sounds, music, etc.



A. Track Selector



1 Track list

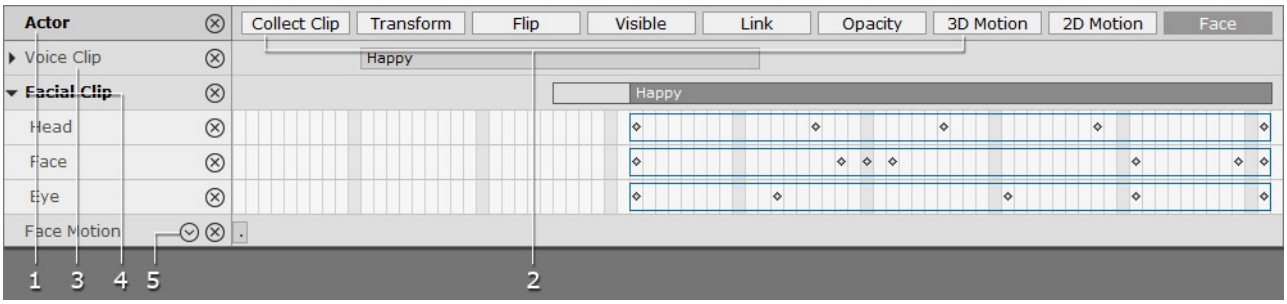


Click the **Track** drop-down list and select the items, in order to show/hide them and their master track buttons.

2 Object-related Track

When you pick an item on the 3D viewer with this button down, the **Timeline** will only display the tracks of the picked item.

B. Motion Tracks



1 Item Name and Main Track Buttons

This track shows an item's name and its master track buttons.

Click on the name to select the item.

2 Track Buttons

Click these buttons to show/hide the master tracks of the picked item.

Button Status:

- Face - Show all of its main tracks.
- Face - Hide all of its main tracks.

Track Button that contains multiple master tracks:

- **Face** - **Voice Clip**, **Facial Clip** and **Face Motion** master tracks.

3 Main Track Name and Data

This track shows the name and its data.

Click on the name to select the item.

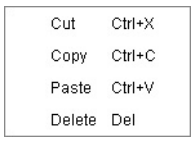
Double click on the name to select all the data in the track.

Click the **Cross** icon beside the track name to hide the track.

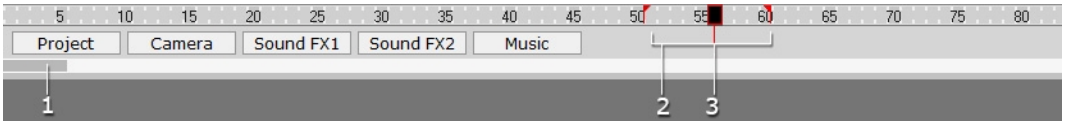
4	Display Sub-Tracks	Click this arrow button to show all sub-tracks.
5	Sub-Tracks Drop-down List	Click this drop-down list in order to show/hide sub-tracks.

C. Toolbar



1	Next, Previous (Tab, Shift + Tab)	This feature is for the **Pipeline** and **Pro** versions only. Click these two buttons to snap the play head back to the previous, next keys or start-frame clip. The key or clip will be automatically selected.
2	Add Key	This feature is for the **Pipeline** and **Pro** versions only. The **Add Key** button only works for the **Camera**, **Transform**, **Flip**, **Opacity** tracks, the **Head**, **Face**, **Eye** and all **T** and **D** sub-tracks under the **Face** and **Motion** main tracks. Double-click on the timeline cell area to add a key, or press this button. Keys can also be automatically added when users alter any key information in the **Modify Panel**.
3	Edit Function	Click this button to show the clip editing drop-down list.  • **Cut**: Select the **Cut** command, or use hotkey Ctrl + X to cut the target key, or clip, in the clipboard. (**Pipeline** and **Pro** only) • **Copy** and **Paste**: Select the **Copy** and **Paste** commands, or use hotkey Ctrl + C on selected keys or clips to copy, and Ctrl + V to paste to the target frame (single or multiple keys) (**Pipeline** and **Pro** only) • **Delete**: Select the **Delete** command or press **Delete** button to delete highlighted keys or clips.
4	Break	This feature is for the **Pipeline** and **Pro** versions only. **Break** works for **Clip** type data in all tracks/groups. Click the **Break** button, or use hotkey Ctrl + B to split the selected clip at a current frame into two new clips.
5	Audio Editing Tools	Click the **Lips Editor** button to show a panel to add or modify lip-synched keys on the **Lips** track. Click the **Sound Modify** button to show a panel to modify the clips under the **Sound Fx** and **Music** items.
6	Loop and Speed	This feature is for the **Pipeline** and **Pro** versions only. The **Loop** and **Speed** buttons work to **Clip** data in all tracks/groups except for clips in the **Sound Fx** and **Music** items. Press the **Loop** button **DOWN** and drag the clip's right edge rightward to repeat the clip. Press the **Speed** button **DOWN** and drag the clip's right edge rightward/leftward to decelerate/accelerate the speed.
7	Project Editing Tools	This feature is for the **Pipeline** and **Pro** versions only. Click the **Insert Frame** button to insert a designated number of frames into the current time frame in order to increase the length of the project. You may also use this feature to insert frames for individual object without affecting the length of the project. Click the **Delete Frame** button to delete a series of selected frames in order to decrease the length of the project. You may also use this feature to delete frames for individual objects without affecting the length of the project. Click the **Add Flag** button to add flag marks to the **Project** track. This allows you to easily hop between events.
8	3D Motion Angle Align	Click this button to align the selected motion clip data to the previous clip.
9	Zoom in/out Actual Size Fit to Window	Click the **Zoom In** button, or use hotkey Ctrl + + to increase the time (cell) unit size. Click the **Zoom Out** button, or use hotkey Ctrl + - to decrease the time (cell) unit size. Click the **Actual Size** button, or use hotkey Ctrl + / to show the time unit represented as 30 frames per second. Click the **Fit to Window** button to view all the timeline items within the timeline window space.
10	Play and Stop	Click the **Play/Pause** button, or press the space bar to play the project, click again to pause. Click the **Stop** button, or press the space bar to stop playing.
11	Current Frame	This field shows the current frame number on the timeline. You may also type-in the frame number to jump to the target frame. This allows you to go to your precise target location; this is especially convenient for animation with clear timing control.

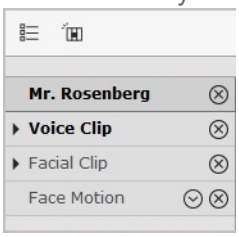
D. Time Scrub



1	Time Unit Bar	Drag the bar to move the displayable range to a desired time frame. Drag the right edge to change the size of the displayable range.
2	Play back and Export Range	Drag the two flags to decide the range for playing back or exporting.
3	Play Head	Drag to move to the desired time frame.

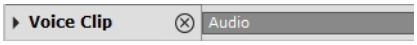
Animation Tracks for Character Heads

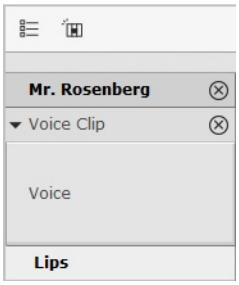
There are three **Master Tracks** that belong to a character's head. They are the **Voice Clip**, **Facial Clip** and **Face Motion** tracks. You may show them by clicking the Face **Face** button on any character.



Voice Clip

The **Voice Clip** master track stores the voice file from the **Create Script** panel. It contains two sub-tracks, **Voice** and **Lips**.
*Please note that this feature is for the **Pipeline** and **Pro** versions only.

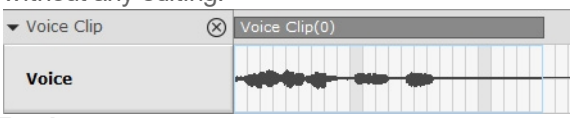




- The master track stores audio data in **Clip** form. You can **Break**, **Loop** or change the clip **Speed**.

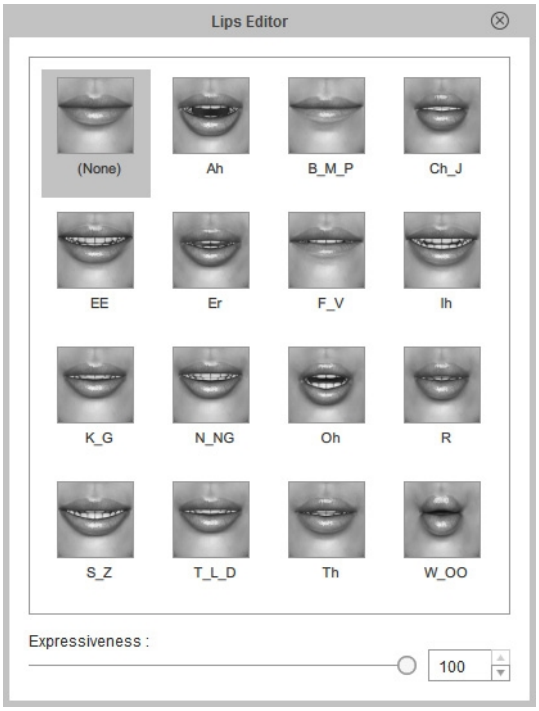
Voice Track

- This track stores audio data in **Wave** form. You may only view the wave of the voice without any editing.



Lips Track

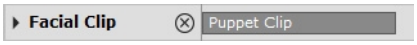
- You may manually add lip-synching keys to this track by double-clicking on the cells in this track.

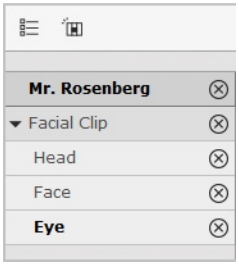


- Please note that if there is a clip in its master track (**Voice Clip**), then the lip-synching keys within the clip range will be overridden by the lip-synching keys added later on.

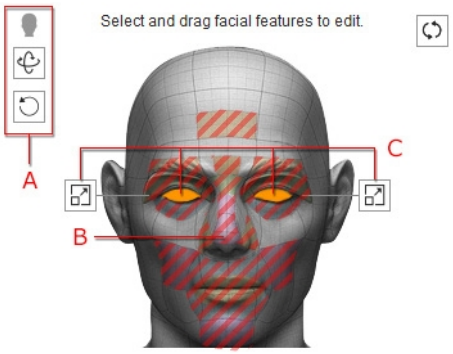
Facial Clip

The **Facial Clip** master track stores the facial expression clips from the **Puppet Editor - Face Puppet Editor** panel. It contains three sub-tracks, **Head**, **Face** and **Eye**.





- The data in these three tracks can be set through the **2D Motion Key Editor - Face Key Editor**.
- Please note that if there is a clip in its master track (**Facial Clip**), then the **Head**, **Face**, and **Eye** keys within the clip range will be overridden by facial expression keys added later on.
- Double-click the cell in these three tracks to open the **Face Key Editor**.



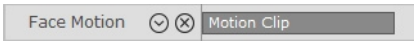
A. Head Track
- You may add head **Rotating** and **Tilting** data in this track.
- Select the **Head** controls in the pane and drag in the pane to set a **Head Key**.

B. Face Track
- This track stores the facial expression keys.
- Select the **Facial Features** on the face dummy and drag in the pane to set a **Face Key**.

C. Eye Track
- This track stores the eyes rolling and scaling keys.
- Select the **Eyes** and **Eye Scale** buttons on the face dummy, and drag in the pane to set an **Eye Key**.

Face Motion - Sprite-based Heads Only

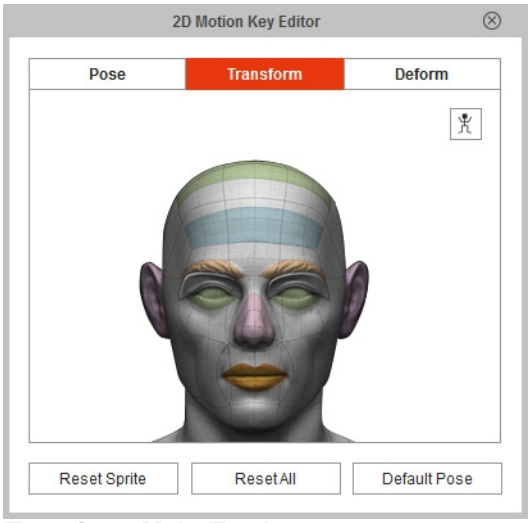
The **Face Motion** master track stores the clips grouped from its main tracks; **Face_Transform**, **Face_Sprite** and all the **T** (Transform) and **S** (Sprite) sub-tracks.



Transform Main Track and T Sub-tracks

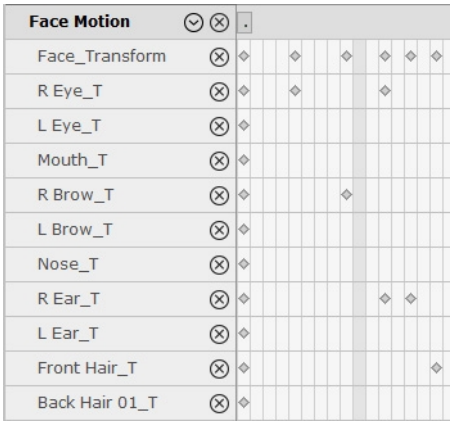


- You see all transform data of the Sprite-based facial features in these tracks.
- These keys support **Move**, **Copy**, **Paste** and **Delete** functions.
- Double-click the cell or the keys in these tracks to open the **2D Motion Key Editor - Face Mode**.



Face_Transform Main Track

- The keys in this track are only tokens, implying that there are transform keys under its **T** sub-tracks on the same time frame.
  *Please note that the **T** sub-tracks are for the Pro & Pipeline versions only.



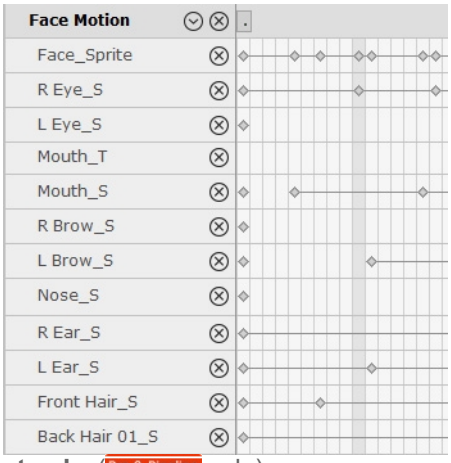
Sprite Main Track and S Sub-tracks



- You see all sprite switch data of the Sprite-based facial features in these tracks.
- These keys support **Move**, **Copy**, **Paste** and **Delete** functions.

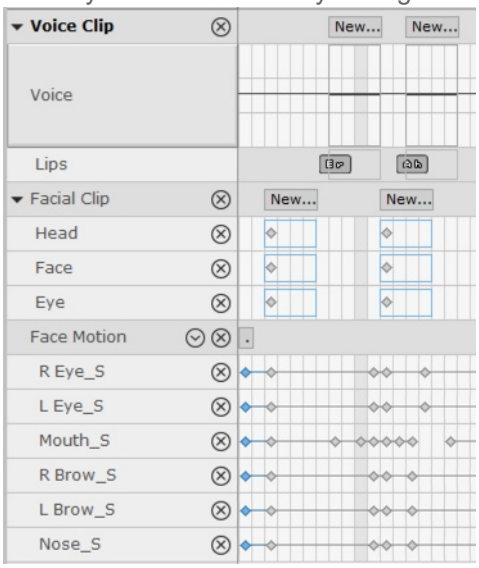
Face_Sprite Main Track

- The switches in this track are only tokens, implying that there are switches under its **S** sub-tracks on the same time frame.



S Sub-tracks (Pro & Pipeline only)

- The switches in this track are generated by manually switching elements in the **Sprite Editor**. Please note that these switches are re-editable.
- There are other types of switches, there is a mark implying that the switches are produced from the **Voice Clip**, **Lips** tracks and sub-tracks of the **Facial Clip** track. You can only edit these marks by editing the keys in the referred tracks.



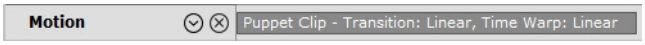
Note:

Please refer to the Clip and Key Priority section for more information.

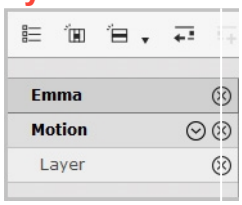
Character

The **Motion** master track stores the clips grouped from its main tracks:

- **3D Motion - 3D Angle**, **3D Motion Layer** and its sub-tracks in blue.
- **2D Motion - Layer**, **Body_Transform**, **Body_Sprite**, **Body_Deform** and all the **T** (Transform), **S** (Sprite) and **D** (Deform) sub-tracks. In addition, the clips can also be produced via the **Puppet Editor - Body Puppet Editor** panel.



Layer Main Track

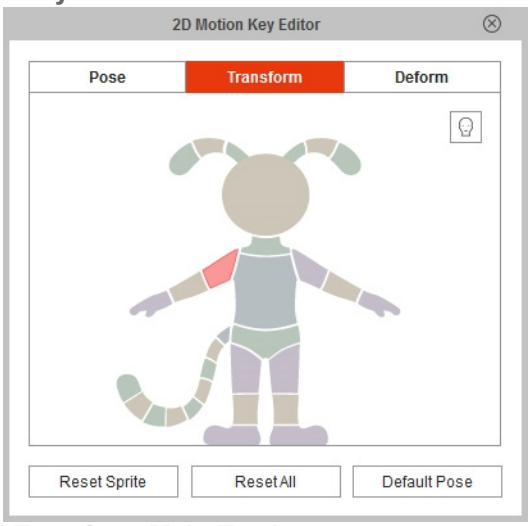


- You see all layer keys in this track.
- These keys support **Move**, **Copy**, **Paste** and **Delete** functions.
- You may set layer keys by rearranging the order of body parts in the **Layer Editor** panel.
- Please refer to the Setting Layer Keys for Characters section for more information.

Transform Main Track and T Sub-tracks

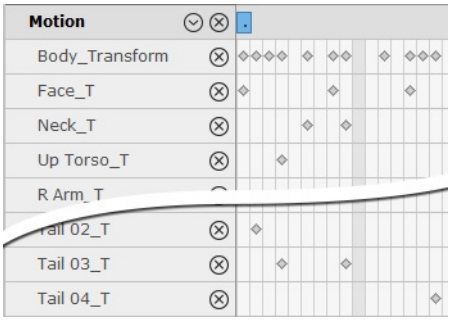


- You see all transform data of the body parts in these tracks.
- These keys support **Move**, **Copy**, **Paste** and **Delete** functions.
- Double-click the cell or the keys in these tracks to open the **2D Motion Key Editor - Body Mode**.

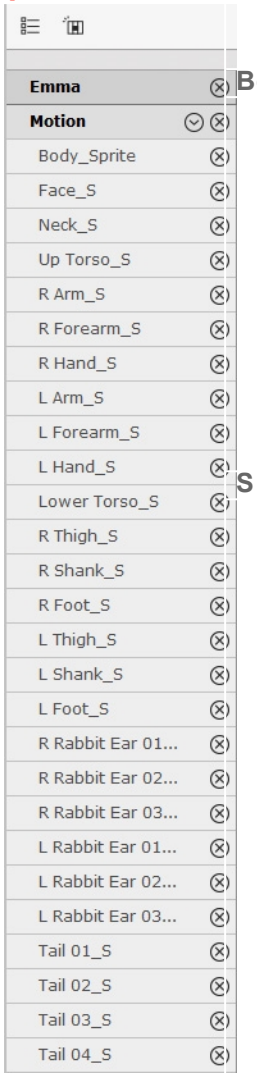


Body_Transform Main Track

- The keys in this track are only tokens, implying that there are transform keys under its **T** sub-tracks on the same time frame.
  *Please note that the **T** sub-tracks are for the Pro & Pipeline versions only.



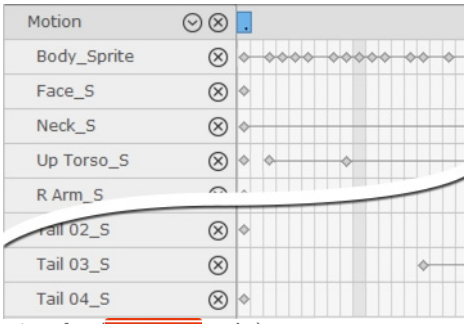
Sprite Main Track and S Sub-tracks



- You see all sprite switch data of the body parts in these tracks.
- These keys support **Move**, **Copy**, **Paste** and **Delete** functions.

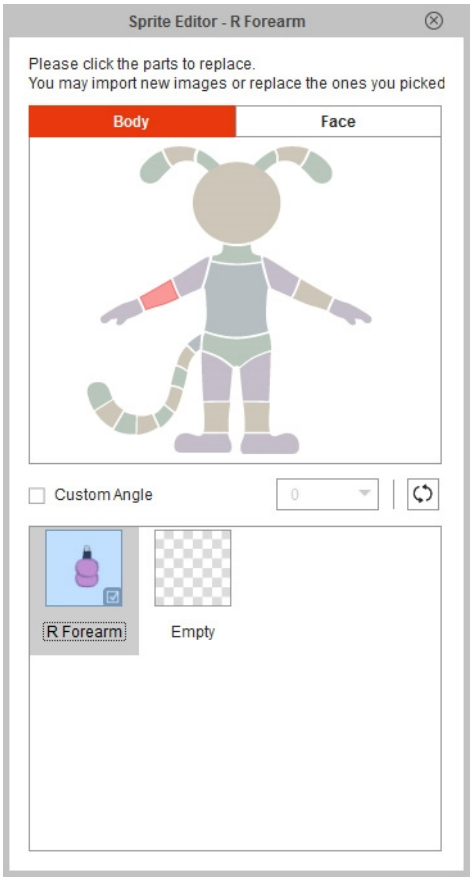
Body_Sprite Main Track

- The switches in this track are only tokens, implying that there are switches under its **S** sub-tracks on the same time frame.

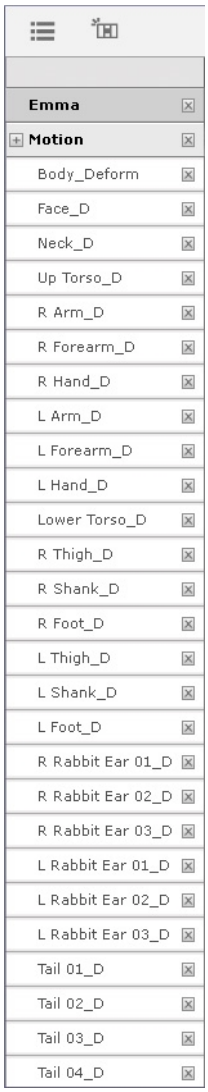


S Sub-tracks (Pro & Pipeline only)

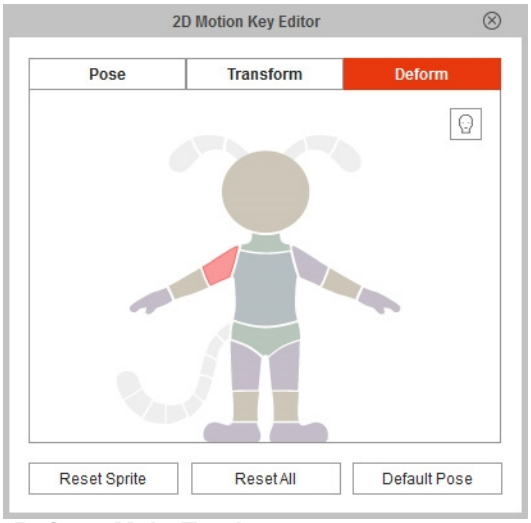
- The switches in this track are generated by manually switching elements in the **Sprite Editor**.



Deform Main Track and D Sub-tracks

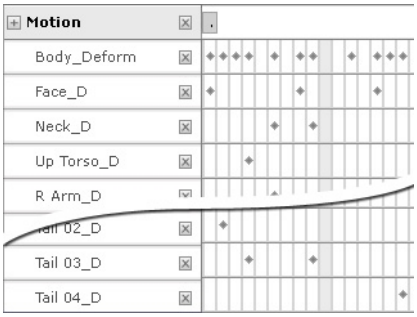


- You see all deform data of the body parts in these tracks.
- These keys support **Move**, **Copy**, **Paste** and **Delete** functions.
- Double-click the cell or the keys in these tracks to open the **2D Motion Key Editor - Deform Mode**.



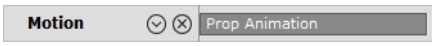
Body_Deform Main Track

- The keys in this track are only tokens, implying that there are transform keys under its **D** sub-tracks on the same time frame.
  *Please note that the **D** sub-tracks are for the Pro & Pipeline versions only.



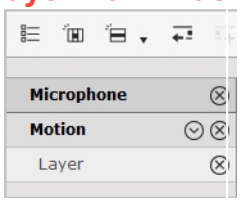
Prop

The **Motion** master track stores the clips grouped from its **Layer** main track, and its sub tracks, **T** and **S**.



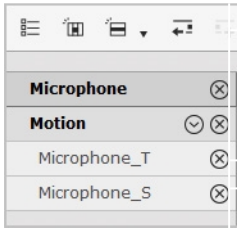
Click the "+" button to show the sprite names in a list. Activate the box to show the **Layer** track and the paired **T** and **S** tracks. The number of the paired T and S tracks are the same as the number of sprites in the prop.

Layer Main Track



- You see all layer keys in this track.
- These keys support **Move**, **Copy**, **Paste** and **Delete** functions.
- You may setting layer keys by re-arranging the order of sprites in the **Layer Editor** panel.
- Please refer to the Setting Layer Keys for Props section for more information.

T and S Tracks



T Sub-track

- Double-click the cell or the keys in these tracks to show the **Prop Key Editor** on the **Property Tool Bar** in order to transform the sprite.



S Sub-track

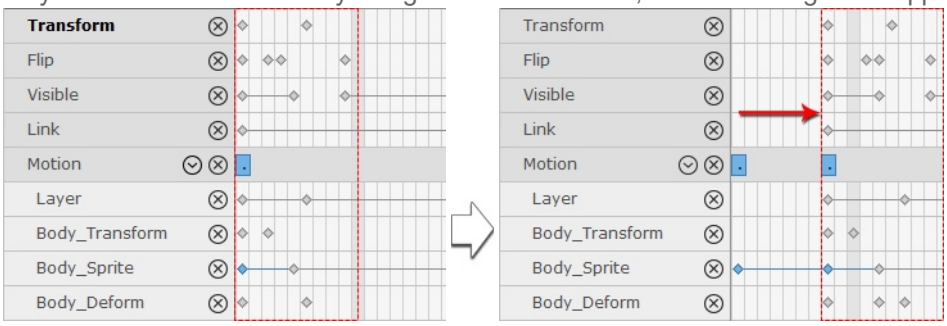
- The switches in this track are generated by manually switching elements in the **Sprite Editor**.

Inserting and Deleting Frames

CrazyTalk Animator provides features for inserting and deleting frames.
*Please note that this feature is for the **Pipeline** and **Pro** versions only.

The purpose and characteristics of these features are:

- You are allowed to add more time to the current project or trim parts of the project.
- Since even animations of a single object can consist of plenty of clips, keys and switches from various tracks, you may move them as a whole by using these two features, instead of drag and dropping them one by one.



- If you use these two features between keys and switches, then you are actually changing the transition and duration in-between.
- **Inserting Frames** and **Deleting Frames** can be applied to:
  - The whole project.
  - Individual Actors.
  - Individual Props.
- Please refer to the links below for more information.
  - Inserting Frames
  - Deleting Frames

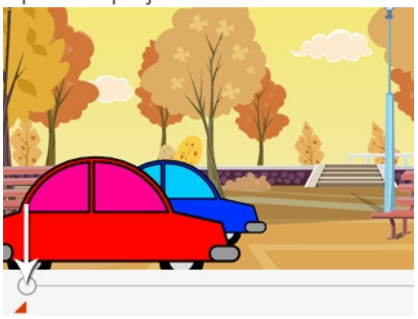
Inserting Frames

CrazyTalk Animator provides the **Insert Frames** feature so that all the keys in a project, or every key of an object, can be moved once instead of dragging keys one by one.
*Please note that this feature is for the **Pipeline** and **Pro** versions only.

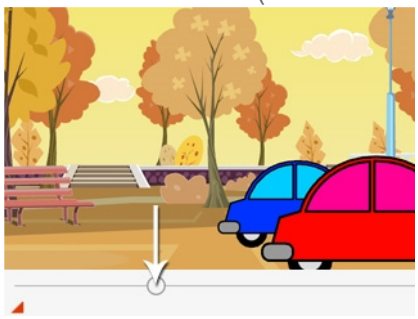
Insert Frames for the Whole Project

By using the **Insert Frames** to the project, you may add more time before the original project. Keys of every object will be affected and shifted to the later frames. This is useful if you want to add more animations ahead of the story.
* Please note that this method increases the total length of the project.

1. Open the project with animations of different objects. Start from the first frame (two cars moving for example).

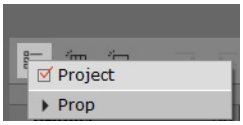


Animations start from the first frame.

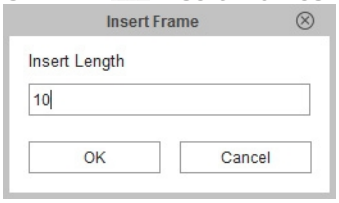


Animations stop at one middle frame.

2. Open the **Timeline** (F3).
3. Click the **Track List** button and select **Project** to show the project track.



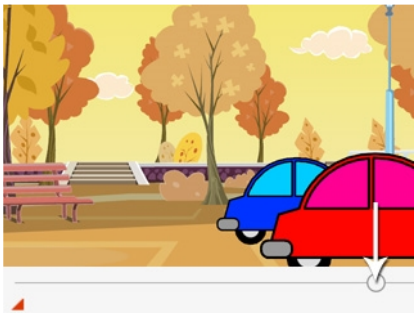
4. Press down the **Project** button. Click the first frame on the track.
5. Click the **Insert Frames** button on the tool bar. Enter a frame number before the start frame.



6. Click the **OK** button and the specified number of frames will be added before the start frame. The animations will be postponed (The cars start to move later) and the total length of the project will be increased.
7. Play the project to view the results.



The animations will be delayed.



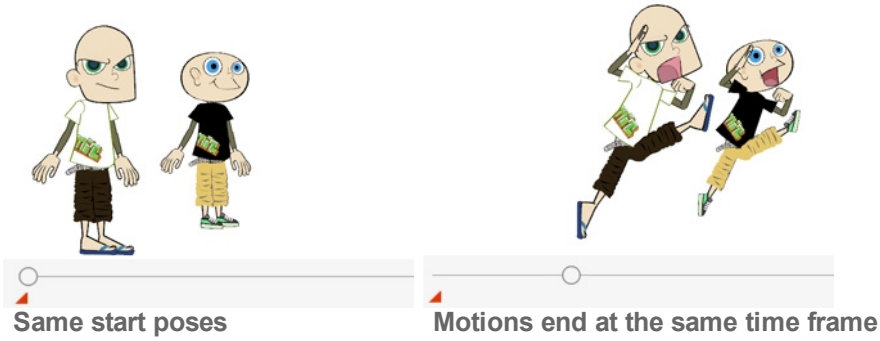
The animations will stop even later.

Insert Frames for Individual Objects

After having produced key frame animations (key by key), sometimes you need to increase the duration (transition) between two keys for individual objects. Instead of dragging the keys one by one on the timeline, **CrazyTalk Animator** provides the **Insert Frame** feature to quickly achieve this goal.

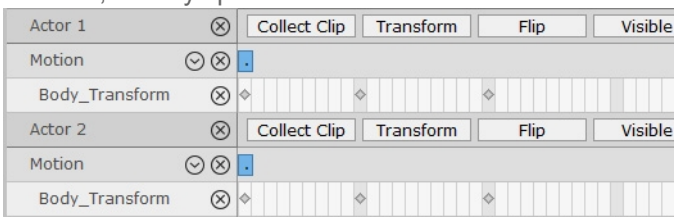
* Please note that the **Insert Frame** for individual objects only affects the position of the keys. All clip-type data, and the length of the project, will **NOT** be affected.

1. Given a project with two characters performing the same motion by body motion keys.

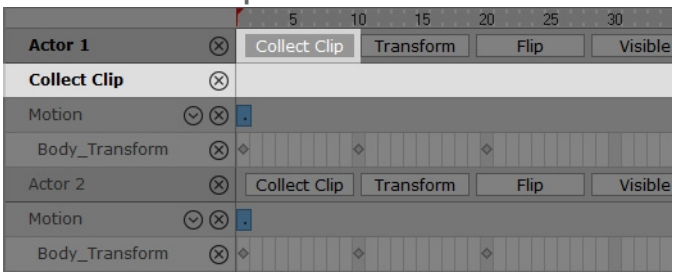


Same start poses **Motions end at the same time frame**

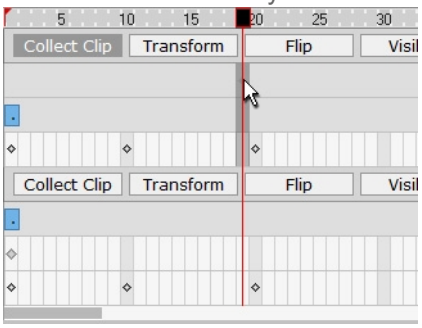
2. Open the **Timeline** (F3). Show the **Body_Transform** tracks of the two characters. Since their motions are identical, the keys positions will be at the same time frame.



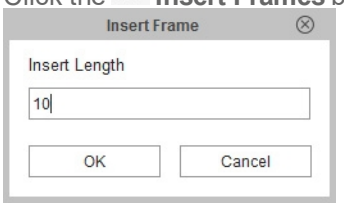
3. Click the **Collect Clip** button of one character to show the corresponding track.



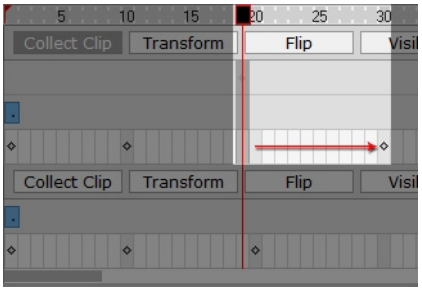
4. Click on the cell where you need to insert frames.



5. Click the **Insert Frames** button on the tool bar. Enter a frame number.



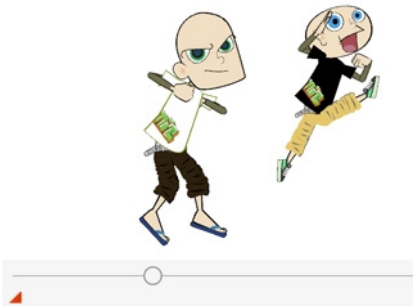
6. Click the **OK** button and the desired number of empty frames will be added.



7. The time of the two keys will be extended, as well as the transition motion in-between.



Same Start Pose



The transition duration extends

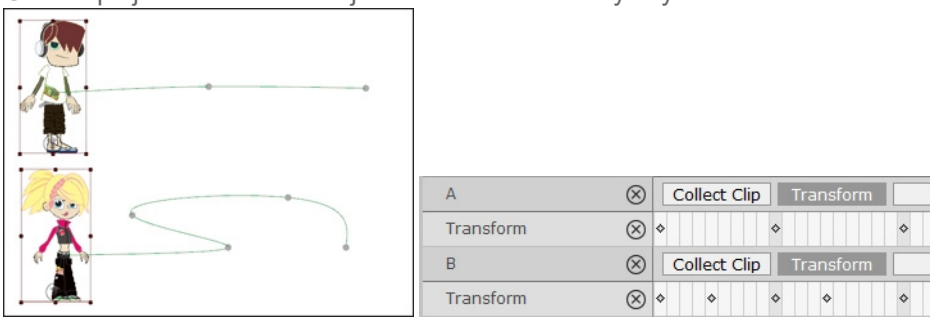
Deleting Frames

After having produced key frame animations (create animation key by key), sometimes you need to decrease the duration of the transition between two keys. In stead of dragging the keys one by one on the timeline, **CrazyTalk Animator** provides the **Delete Frame** feature to quickly achieve this goal. Please note that any data (clips, keys, switches) in the frame will all be deleted once you use the **Delete Frame** command.
*Please note that this feature is for the **Pipeline** and **Pro** versions only.

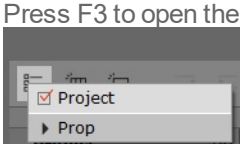
Delete Frames for the Whole Project

The **Delete Frame** feature working on the project may not only delete the specified number of frames, but also the data in the frames for all objects in the project. You may use this feature to advance all the animations in the project.

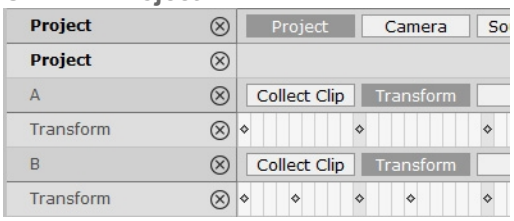
1. Given a project in which the objects are all animated by keys.



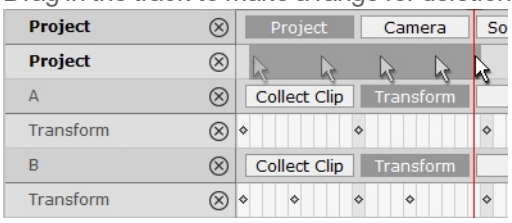
2. Press F3 to open the timeline. Click the **Track List** button and select **Project** from the menu.



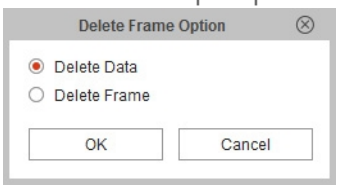
3. Click the **Project** button to show the track.



4. Drag in the track to make a range for deletion.

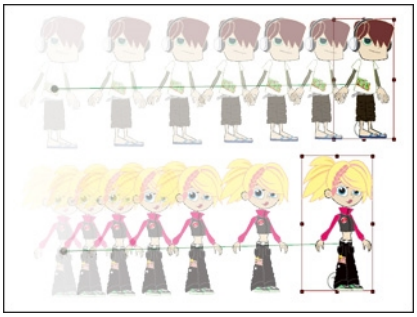


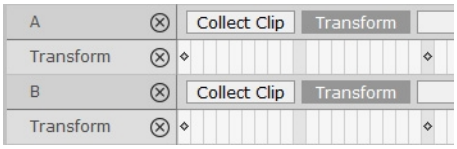
5. Click the **Delete Frame** button.
You will then be prompted to choose the deleting method.



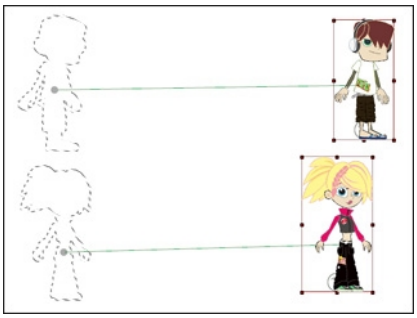
- **Delete Data**: Delete only the clips, keys and switches within this range.
- **Delete Frame**: Delete keys, switches, as well as the frames within this range to shorten the length of the project.

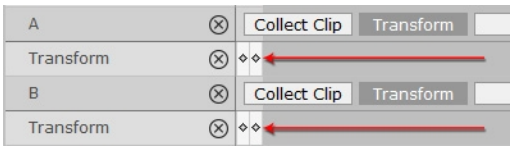
6. If you **Delete Data**, the data within the range will be removed. The previous data after the range will stay where it is.





7. If you **Delete Frame**, the data and frames within the range will be removed. The previous data after the range will be advanced.



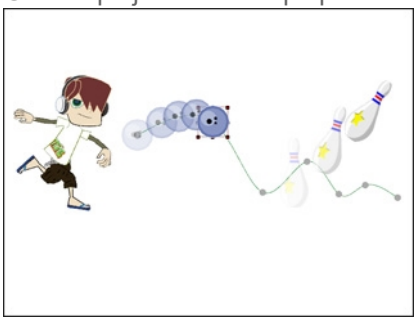


Delete Frames for Individual Object

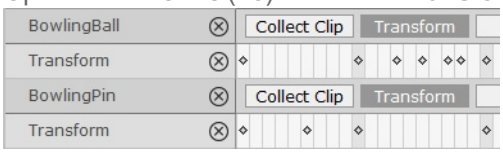
In addition to deleting the frames of an entire project, you are allowed to delete frames and/or data for a single object. This can accelerate the transition between two keys, or even simultaneously delete keys or switches in different tracks.

* Please note that the **Delete Frame** for individual objects only affects the position of the keys. All clip-type data and the length of the project will **NOT** be affected.

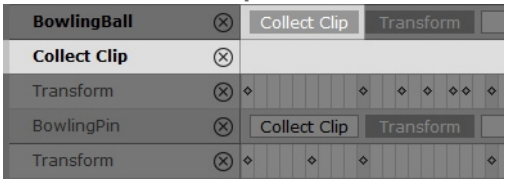
1. Given a project with two props animated by keys. The pin moves away before the ball hits it.



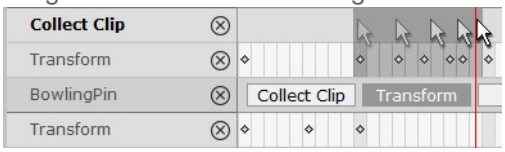
2. Open the **Timeline** (F3). Show the **Transform** tracks for the ball and the pin.



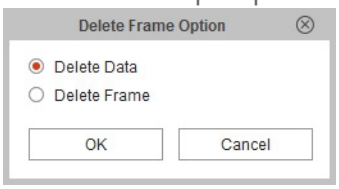
3. Click the **Collect Clip** button of the ball to show the track.



4. Drag in the track to make a range for deletion.

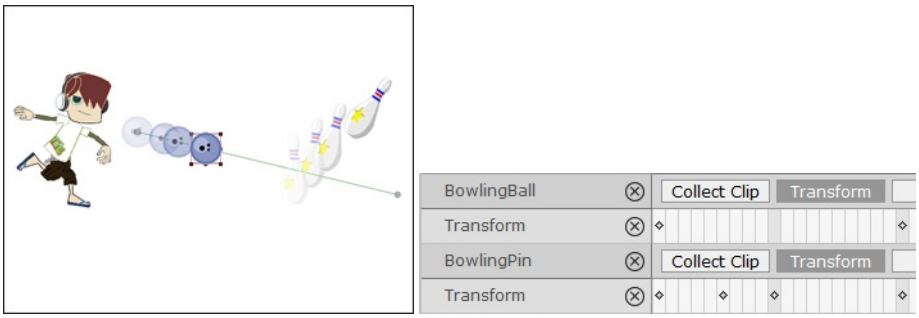


5. Click the **Delete Frame** button.
You will then be prompted to decide the deleting method.

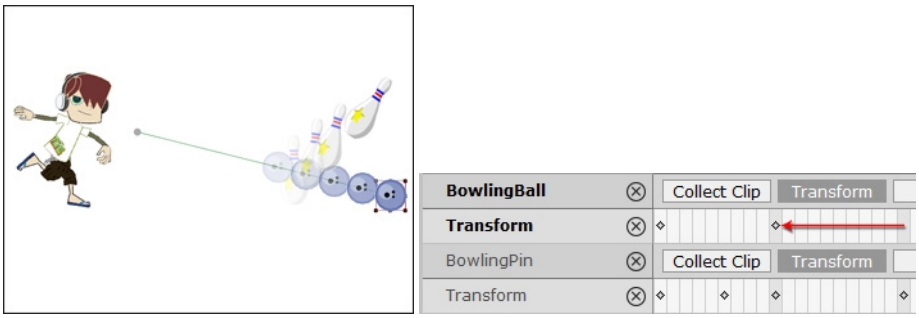


- **Delete Data**: Delete only the clips, keys and switches within this range.
- **Delete Frame**: Delete keys, switches and the frames within this range.

6. If you **Delete Data**, the data within the range will be removed. The previous data after the range will stay where it is.



7. If you **Delete Frame**, the data and frames within the range will be removed. The previous data after the range will be advanced.

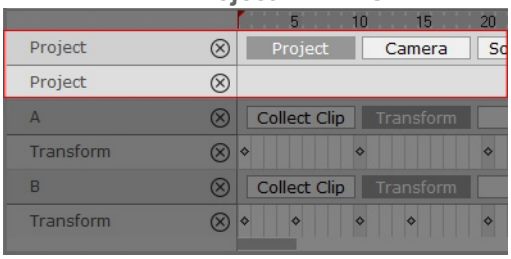


Adding Flags

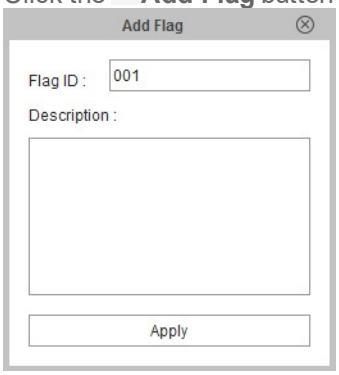
When you need to jump to specific time frames in your project, you may sometimes need to add flags in order to easily hop between events.

Adding Flags

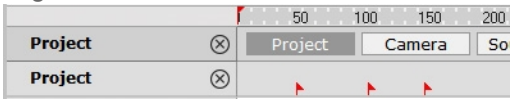
1. Open the **Timeline** (F3).
2. Click the **Track List** button and select **Project** to show the project track.
3. Press down the **Project** button. Click on the target frame in this track.



4. Click the **Add Flag** button on the tool bar.



5. Give the flag a name and put down a description for the flag. Click **Apply** to insert a new flag into this frame.
6. You may click on another time frame in this track and repeat Step 4 to 5 without closing the panel to add more flags.



Jump between Flags

There are two methods that you may use to jump between flags:

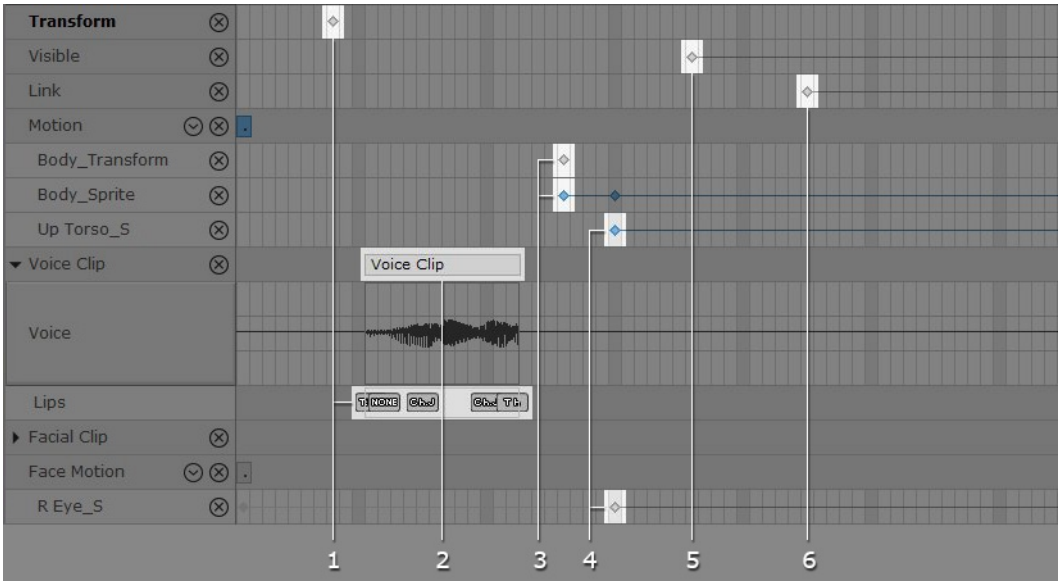
- Press the **Tab** key to jump to the next flag.
- Press **Shift + Tab** keys to jump to the previous flag.

Animation Timeline Editing

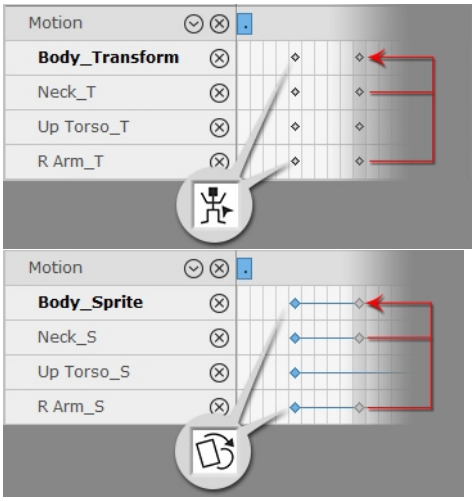
Before starting to read this page, please refer to the Introducing the Timeline section for more information about the user interface and tools.

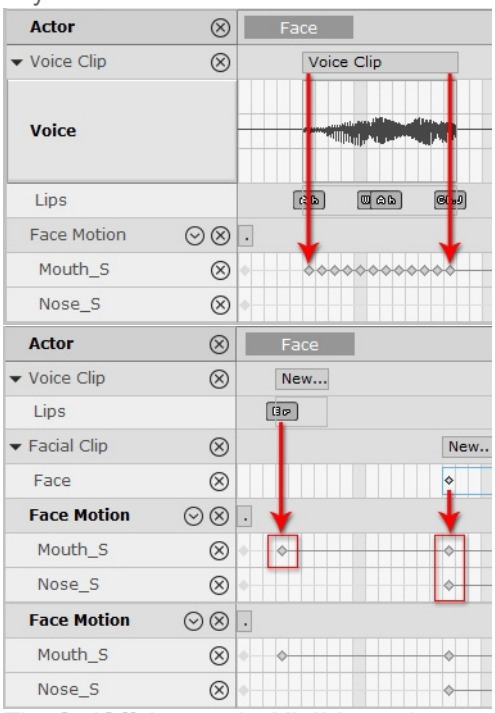
Data Types

In **CrazyTalk Animator,** there are **6 types** of data in the tracks for **Timeline Editing- Key**, **Clip**, **Representative Key**, **Switch and un-editable switch**, **Target-switching**, and **On/Off**.



	Data Name	From	Descriptions
1	Key	**Property Tool Bar** **Lips Editor** **2D Motion Key Editor** **Prop Key Editor** **Opacity Setting**	**Animation Keys** store **RTS** data (Rotation, Transformation, Scale) and **Opacity** data for all items and sprites, including; camera, actors, props and accessories. The animation between two keys can be auto-generated.
2	Clip	**Puppet Editor**	**Animation Clips** store the motion clip segments of character and prop (accessories). A clip can be accelerated/decelerated, looped or blended into another clip. Please refer to the Speed, Loop and Blending section for more information.
3	Representative Key	**Sprite Transform Key** **Sprite Switch**	This type of key implies that it contains one or more keys (by the **2D Motion Key Editor** or **Sprite Editor** in the stage mode) in the **T** or **S** tracks under the **Face Motion** and **Motion** tracks.



4 Switch and Switch Marks	**Switch:** **Sprite Editor** **Switch Mark:** **Voice Clips** **Lip Synching Keys** **Facial Clips** **Facial Keys**	**Switch**: When you use the  **Sprite Editor** in stage mode to manually replace the elements in a sprite, then you are setting a replacement key (also known as a **Switch**). As the project plays up to the time frame where the switch occurs, then the previous element will be replaced with the designated one. **Switch Mark**: Switch marks are tokens representing the sprite switch timing, governed by it's master clip (from **Voice Lip Synching**, **Puppeteering**) or motion key (from **Key Editor**); it prompts you that there is a sprite switch key in other relevant tracks. 
5 On/Off	**Visible Setting**	The **On/Off** data on the **Visible** track stores only one status of the object. You may allow the object to be visible (On) at one frame, until it is set to be invisible (Off) in another.
6 Target-switching	**Link Setting**	The **Target-switching** data resembles the key concept. It stores the targeting relationship between one object and its target. The target can be changed or even dissolved at any time frame. The **Link** features for actors and props (accessories) are under this category.

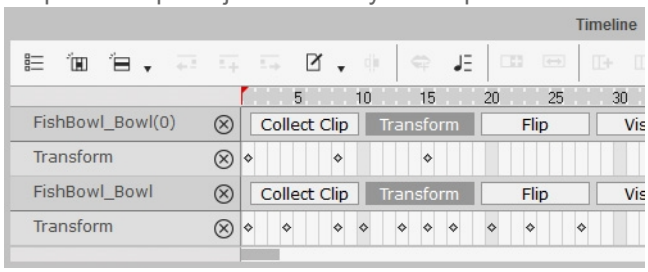
Note:

- Please refer to the Timeline Shortcuts section for more information.

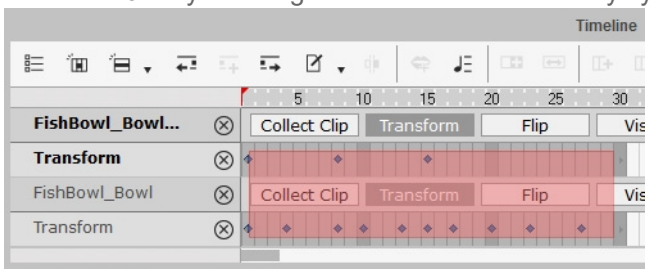
Multiple Selection Methods (New for v3)

The data-selecting methods on timeline tracks are as described below:

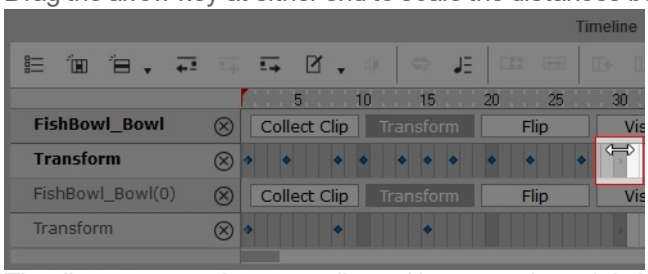
- **Select single key** - Single-click on the target key/clip, the selected key/clip will then be highlighted.
- **Tab Key** - Press **Tab** to jump to the next key/clip, **Shift + Tab** to jump to the previous key/clip.
- **Select All keys** - Double-click on the target track name.
- **Multiple key/Clip selection**
  - Drag the cursor in the specific track to highlight the keys/clips covered under it.
  - Use Ctrl + LBM (Left Mouse Button) to select multiple keys/clips.
  - Use Shift + LBM to select the adjacent keys/clips.
- **Multiple Keys Selection and Scaling**: This feature is applied to span tracks or span objects.
  1. Prepare multiple objects with keys and open the their tracks in the **Timeline**.



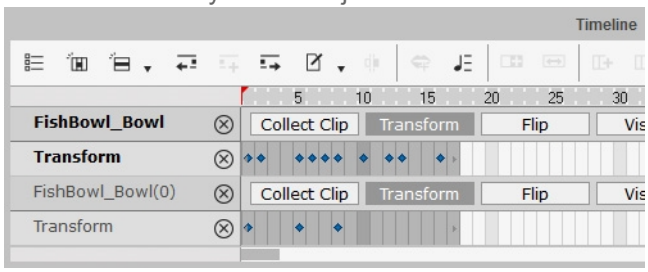
  2. Hold the **Ctrl** key and drag a red box to include the keys you wish to select.



  3. Drag the arrow key at either end to scale the distances between keys.



The distances maybe auto-adjusted because the unit is by frame.



Clip and Key Priority - Face

Facial expressions could come from different tracks. Therefore, during playback, the program must have a specific priority when a time frame contains data from different tracks.

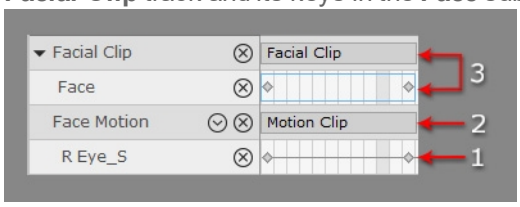
Clip and Key Priority

Sprite-based head

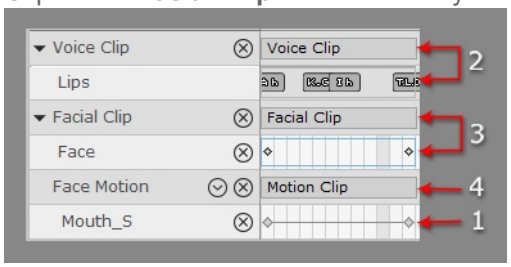


The facial expressions generated for the **Sprite-based head** can be from the **S** tracks, the **Motion Clip** clips, the **Facial Clip** clips, the **Face** track keys, the **Voice Clip** clips and the **Lips** track keys. When the project plays and meets all these clips or keys, then there is a certain priority for displaying the effect from these tracks.

- **General Facial Features**: Switches in the **S** track > Clips in the **Face Motion** track > Clips in the **Facial Clip** track and its keys in the **Face** sub-track.



- **Mouth**: Switches in the **S** track > Clips in the **Voice Clip** track and its keys in the **Lips** sub-track > Clips in the **Facial Clip** track and its keys in the **Face** track > Clips in the **Face Motion** track.



Morph-based head



The facial expressions generated for the **Morph-based head** come from the **Facial Clip** clips, the **Face** track keys, the **Voice Clip** clips and the **Lips** track keys.

- Keys in the **Lips** track > Clips in the **Voice Clip** track.
- Keys in the **Head**, **Face**, **Eye** tracks > Clips in the **Facial Clip** track.

Note:

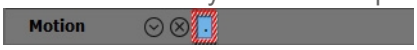
- Please refer to the Facial Clips and Keys section for more information.

Clip and Key Priority - Motion, Layer and Sprite

There is a specific priority in the **Motion** main track, its **Layers**, **Sprites** and **S** (Sprite Switch) sub tracks. When a time frame contains data from these tracks, then only the data with the highest priority takes effects. In this page, you will focus on the priority between **Motion**, **Layer** and **Sprite** tracks.

Data in the Motion Track

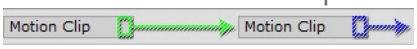
- The data in the **Motion** main track is in clip form. The clip stores **Layer Keys** and **Sprite Switches**.
- When a character is applied, there is always a **one-frame** motion clip in blue at the start frame of the project where the initial layer order and sprite status (as in the **Composer Mode**) is kept.



- The layer order and sprite switch effects, in this invisible motion clip, last until it meets an applied motion.

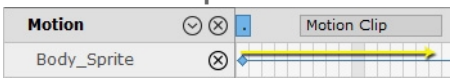


- The layer order and sprite switch effects in the interval frames, between two clips, are always the same as the ones in the last frame of the previous motion clip.



Priority for Motion Track and Sprite Track

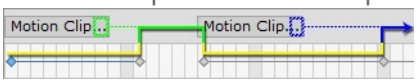
- Switches in the **Sprite Track** > Switches in the **Motion Clip** (in the **Motion Track**).



- Release key has the **Sprite Track** temporarily hand out the switch priority to the **Motion Track**.



- If there is no data in the motion track when you set a release key, then the sprite switch status uses the last status of the previous motion clip.



- Please refer to the Releasing Sprite Switches section for more information.

Priority for Motion Track and Layer Track

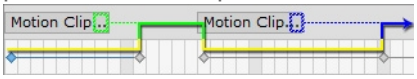
- Keys in the **Layer Track** > Keys in the **Motion Clip** (in the **Motion Track**).



- Release key has the **Layer Track** temporarily hand out the priority to the **Motion Track**.



- If there is no data in the motion track when you set a release key, then the layer order uses the last status of the previous motion clip.



- Please refer to the Releasing Layer Keys section for more information.

Show/Hide Specific Tracks

When you use the timeline, sometimes you may need to often show/hide certain tracks. In this section, you will learn how to show/hide tracks for a more efficient editing with the **Object-related Track** button.



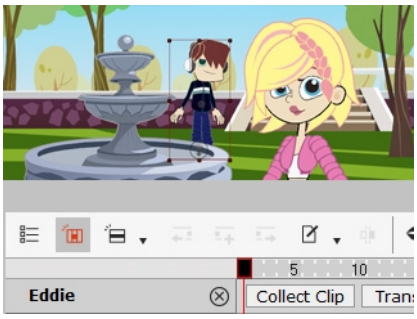
Timeline - Pick and Switch Items

With the **Object-related Track** button you may show, in the timeline, only the picked items in order to prevent an over-spanned timeline. This method applies to all the items in the **Scene Manager**.

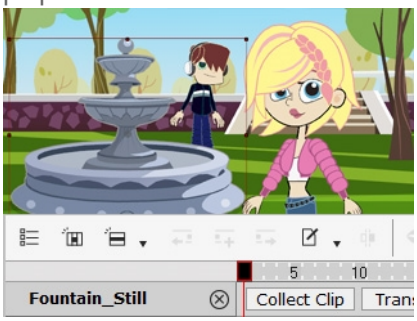
1. Load a project with various items.



2. Press **F3** or click the **Show Timeline** button to show the timeline.
3. Press the **Object-related Track** button.
4. Pick a character in the working area. The timeline will then only show the name of the character and its track buttons.



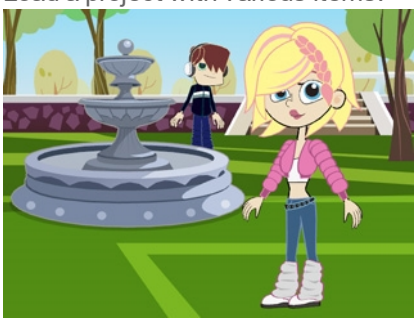
5. Pick a prop in the working area and the timeline will hide the character's track, and only show the name of the prop and its track buttons.



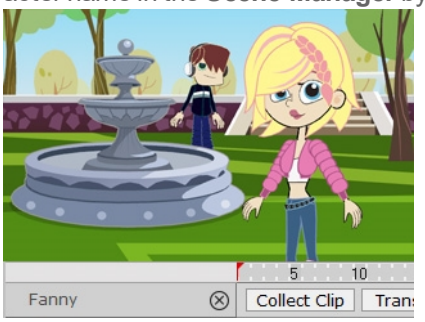
Timeline - Pick and Show Items

If you wish to show more than one item on the **Timeline**, then you may use the steps below.

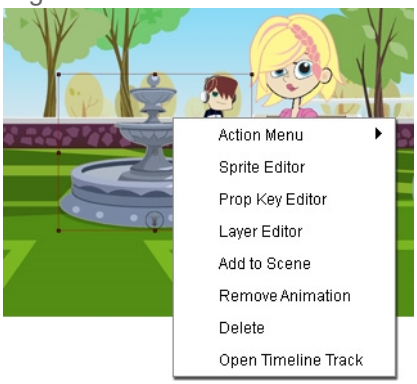
1. Load a project with various items.



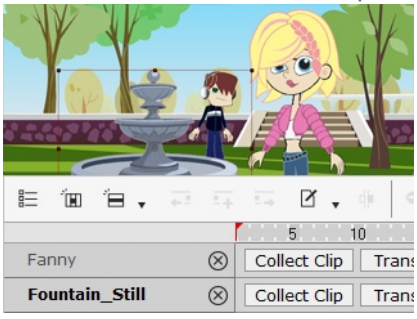
2. Press **F3**, or click the **Show Timeline** button, to show timeline. The Timeline will then show the first character name in the **Scene Manager** by default.



3. Make sure that the **Object-related Track** button is not pressed down.
4. Right-click on another item in the working area to display the right-click menu.



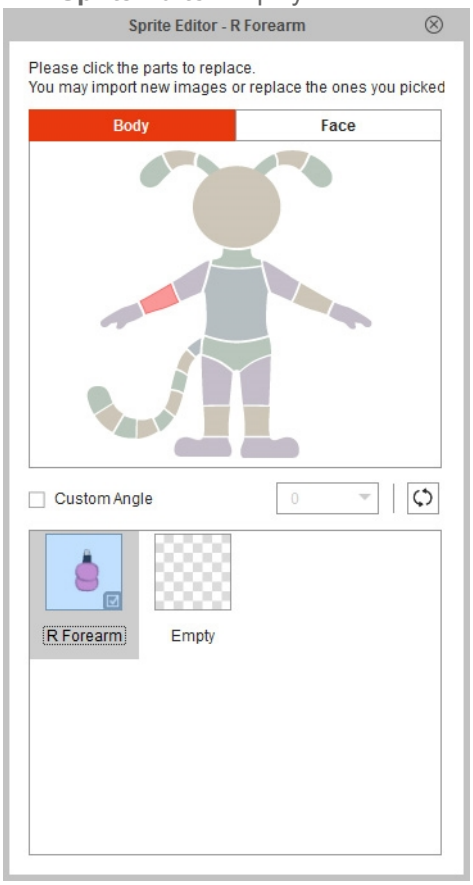
5. Select the **Open Timeline Track** in the menu.
6. This item will then be shown in parallel with the character.



Using Object-related Track buttons and editing panels

When combining with the **Object-related Track** button, you can have the timeline show specific track details by opening an editing panel. This method only applies to characters and props (accessories).

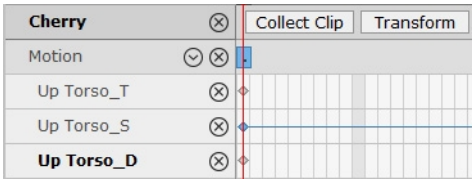
1. Press the **Object-related Track** button.
2. Pick another character. Click the **Sprite Editor** button
   The **Sprite Editor** displays.



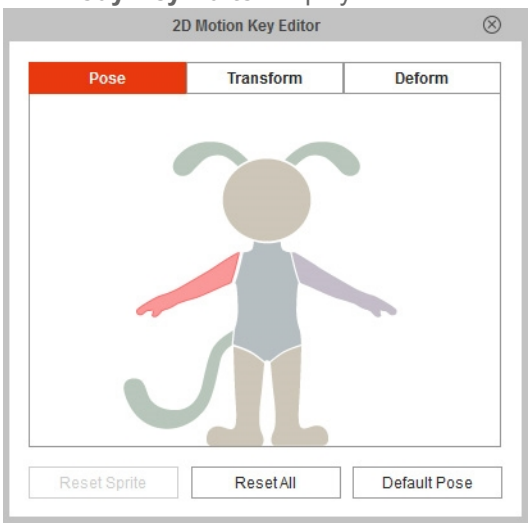
3. Click on the upper body of the character.



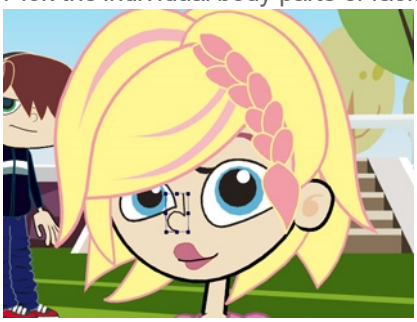
4. You will see that the timeline will automatically show the **Up Torso_T**, **Up Torso_S** and **Up Torso_D**.



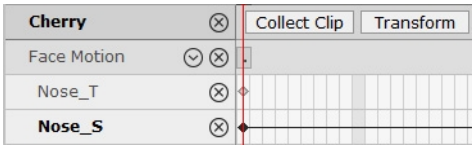
5. Close the **Sprite Editor**, and click the **2D Motion Key Editor**.
   The **Body Key Editor** displays.



6. Switch to **Pose**, **Body** or **Face** (Sprite-based face only) mode.
7. Pick the individual body parts or facial features.



8. You will see that the timeline automatically shows the **T** and **S** tracks of that specific part.



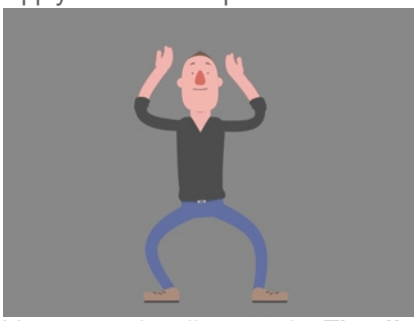
Replacing Motion Clips (New for v3)

When applying a motion clip to an object (character or prop) in the middle of its animation, the basic rule is to overlap the motion clip to the original one and take over the control from it, the object thus will perform the new animation accordingly. However, you can replace the original motion clip without the need to find the start frame by opening the Timeline and scrubbing through the time measure. The advantage of this feature is that you can quickly replace a motion clip even though the **Timeline is Closed**.

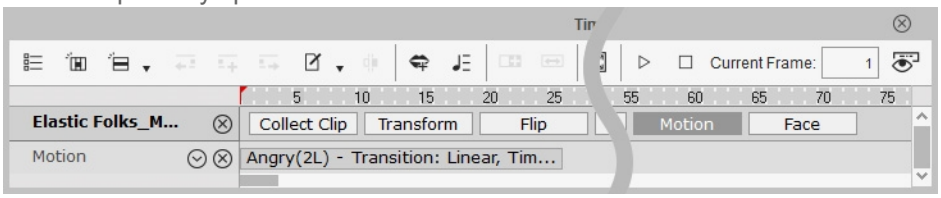
1. Apply a character (**G1**, **G2** or **G3**).



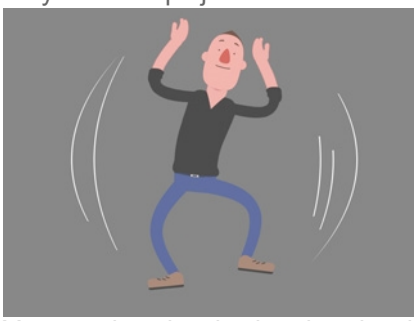
2. Apply a motion template to the character from the **Content Manager**.



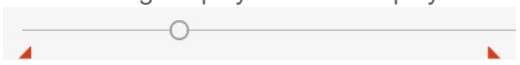
You can optionally open the **Timeline** to view the data in the **Motion** track.



3. Play back the project to observe the motion, pause in the middle of the performance.



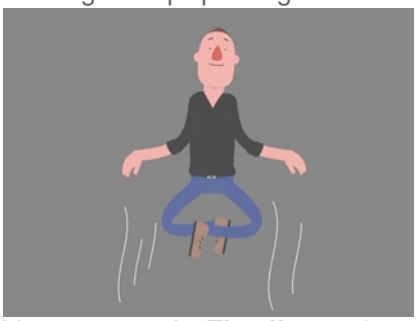
You can drag the play head on the play bar to view the motion as well.



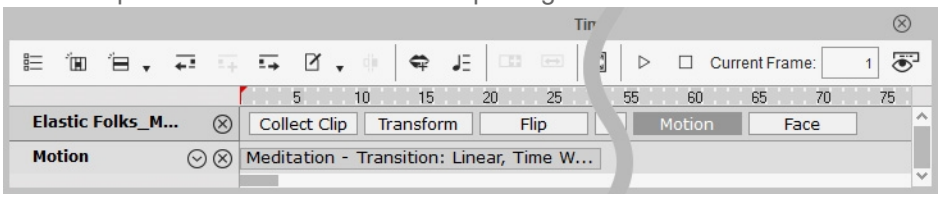
4. Press down and hold the **Alt** key and drag another motion template from the library and then drop it onto the character.



5. The original clip spanning cross the time frame will be replaced.

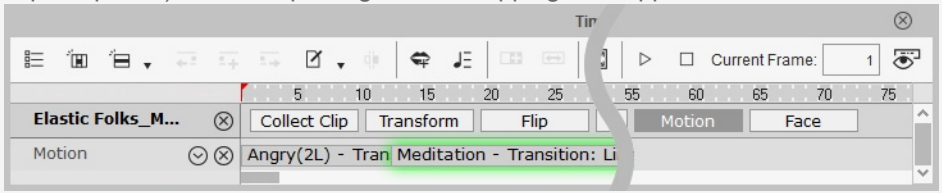


You can open the **Timeline** to view the replacing result.



Note:

Without holding the **Alt** key you can apply any clip to the middle of an animation or motion (traditional way to apply clip templates) without replacing, but overlapping will happen.



Transition Curves in Tracks (New for v3)

Pro & Pipeline

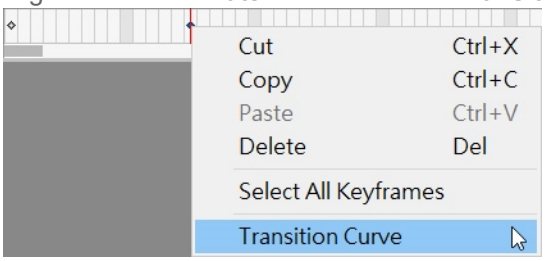
In **CrazyTalk Animator**, you are able to set keys or add clips into different tracks. Interpolations can be customized between different curves so that the transition speeds between two adjacent keys, imitate the physical characteristics of how the object would move in the real world.

*Please note that this feature is for the **Pipeline** and **Pro** versions only.

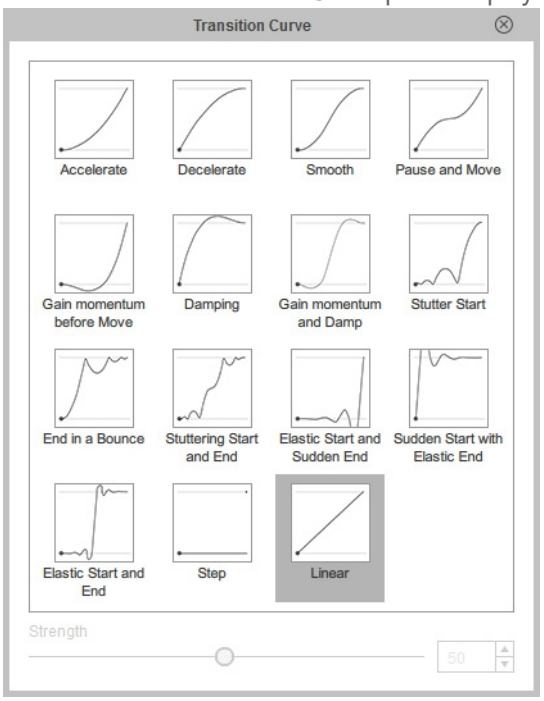
1. In the target track of the **Timeline**, set two keys (take the **Transform** track as an example).



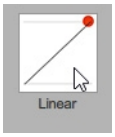
2. Right-click on the **Later** one. Select the **Transition Curve** entry in the Menu.



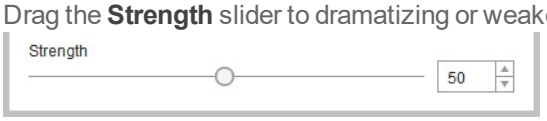
3. You will see the Transition Curve panel display on the screen.



4. Move your cursor onto the transition profiles and the thumbnail will play an animated guide to show you the effect of the transition method.



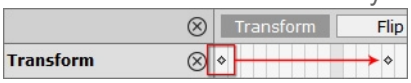
5. Click on the desired transition effect profile and close the panel.
6. Drag the **Strength** slider to dramatizing or weaken the transition curve effect.



Note:

Only the **Accelerate**, **Decelerate**, **Smooth** and **Pause and Move** profiles can be applied with the **Strength** value.

7. The transition curve will then only be generated between these two keys.



Accelerate
Smooth
Gain momentum before Move
Gain momentum and Damp
End in a Bounce
Elastic Start and Sudden End
Elastic Start and End

Decelerate
Pause and Move
Damping
Stutter Start
Stuttering Start and End
Sudden Start with Elastic End
Step

Linear

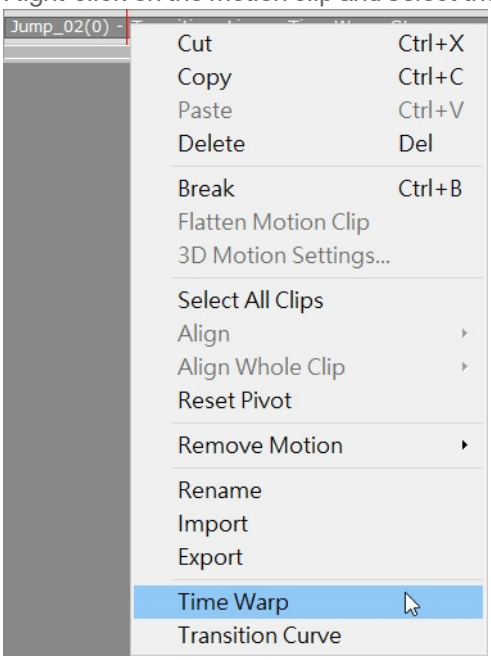
Time Warp for Motion Clips (New for v3)

Pro & Pipeline

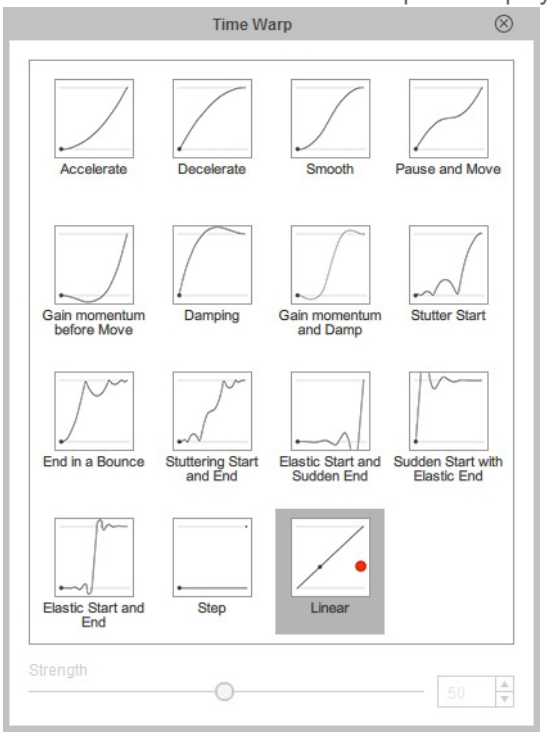
By default, the playback speed of character motions and prop animation clips are linear. However, you are allowed to alter the clip with dynamic speeds, which means that the speed of the motion or animation can be altered within the clip.

*Please note that this feature is for the **Pipeline** and **Pro** versions only.

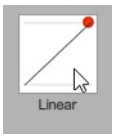
1. Apply a motion clip to a character. By default, the motion will be set to **Linear** mode.
2. Open the **Timeline** (Shortcut Key: F3) to show a character's **Motion** track.
3. Right-click on the motion clip and select the **Time Warp** entry in the Menu



4. You will see the **Transition Curve** panel displaying on the screen.



5. Move your cursor onto the transition profiles and the thumbnail will play an animated guide to show you the effect of the **Transition** method.



6. Click on the desired transition effect profile and close the panel.
7. Drag the **Strength** slider to dramatizing or weaken the transition curve effect.



Note:

Only the **Accelerate**, **Decelerate**, **Smooth** and **Pause and Move** profiles can be applied with the **Strength** value.

8. Play back to view results.

Accelerate
Smooth
Gain Momentum before Move
Gain Momentum and Damp
End in a Bounce
Elastic Start and Sudden End
Elastic Start and End
Decelerate
Pause and Move
Damping
Stutter Start
Stuttering Start and End
Sudden Start with Elastic End
Step

Note:

Please note that the motion of the high and low boundary lines will cause no motion.

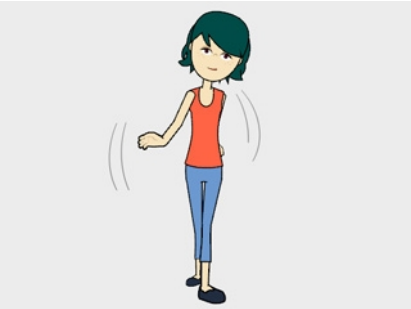


Removing Motions of Body Parts

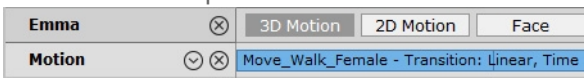
CrazyTalk Animator provides a lot of built-in motion templates for characters. However, sometimes you maybe need to make small adjustments to specific body parts from motion templates to generate a new custom motion, especially when you need to keep some body parts to be motionless or in an absolute gesture. To do this, you may utilize the **Remove Motion** feature to remove certain body part motions and add **Motion Layer** keys.

Removing Body Part Motions from a Motion Clip

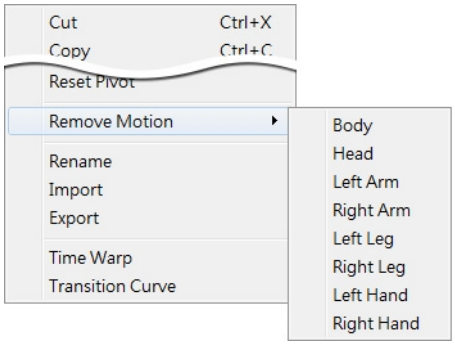
1. Apply any one motion template from library to a character.

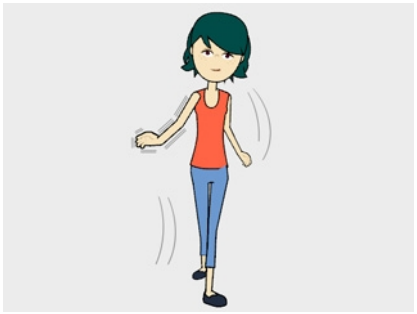


2. Open **Timeline** (Shortcut: F3). Click the **Motion** button of the character to show its motion track. You will see that the motion clip is stored inside the track.



3. Right-click on the clip, select **Remove Motion** and pick the body part (in this case, the **Right Hand**) from which you wish to remove motions.





You may optionally repeat the same steps to remove motions from other body parts.

4. Play back and the motion of the body part is removed from the original motion clip.

Right Hand motion removed.

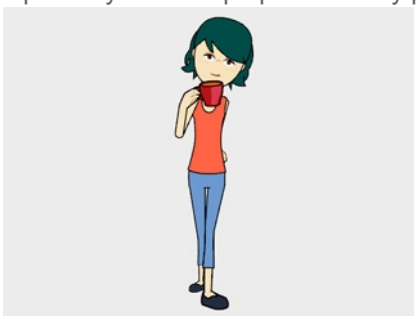
Adding Motion Layer Keys to Produce New Motion

After motions of body parts are removed, you may then use the **Edit Motion Layer** panel to set new poses in body parts to generate new motions.

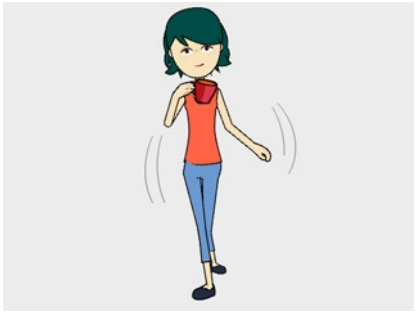
1. Click the **3D Motion Key Editor** button.
2. Modify the motionless body parts to create an absolute posture.



3. Optionally attach a prop to the body part in the composer mode.



4. Back to the **Stage Mode** and play back to review the newly generated motion.



Note:

- If you only set motion layer keys, then you will get an offset motion instead of an absolute pose. Use **Remove Motion** on an existing motion clip before setting motion layer keys, and the body parts whose motions were removed will have an absolute pose.

Add motion layer key without using the **Remove Motion** feature.	Add motion layer key after using the **Remove Motion** feature.

Using Align Features

The sliding issues happens from time to time when you assign motions to a character by either applying motions from the motion library, or from puppeteering motions by the **Motion Puppet**. Sometimes, the transition between two motion clips can also have this issue.

CrazyTalk Animator provides two features, **Align** and **Align Whole Clip**, to help you solving this problem.

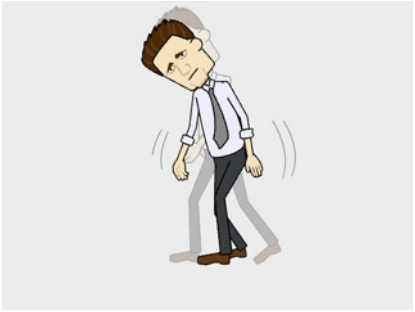
Body Parts Frequently Generate Sliding

The sliding issues that happen often after you apply motions to a character are:

- Foot Sliding.
- Pivot Sliding.
- Hand Sliding.

Aligning the Whole Clip

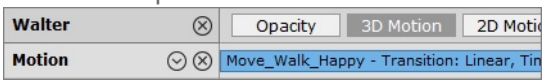
1. Apply a motion (in this case, **Dance**) to a character.



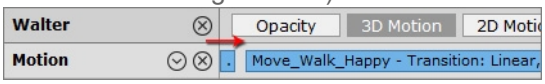
2. Link the character to another object in the scene. Play back to see the result.



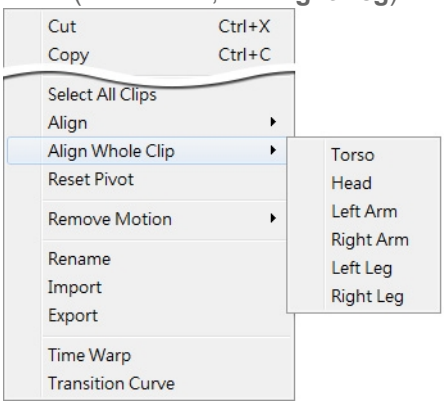
3. Open **Timeline** (Shortcut: F3). Click the **Motion** button of the character to show its motion track. You will see that the motion clip is stored inside the track.



4. Make sure that there is another clip before this one (you may move the clip backward, a default clip in the first time frame will be auto-generated).

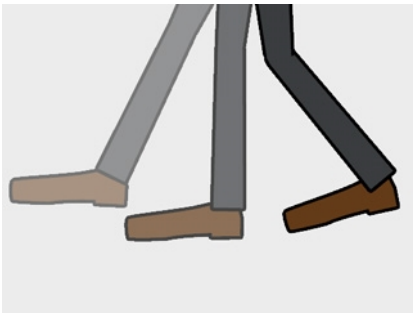


5. Right-click anywhere on the target clip, select the **Align Whole Clip** and pick one of the commands from its sub-menu (in this case, the **Right Leg**).



Note:
Because the **Align** feature requires a target to align to, make sure you have a clip prepared prior to the clip for aligning. Otherwise, the feature will be disabled.

6. The body part (in this case, the right foot) within each frame of the entire clip will be aligned based on the position of the foot in the end frame of the previous clip.



The foot before being aligned



The foot after being aligned

7. Play back to view the result. The right foot in each time frame is thus aligned without influencing the entire motion clip.



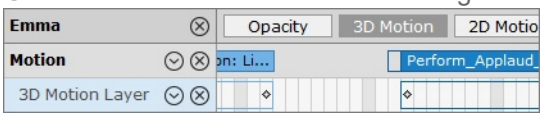
Aligning to the Previous Clip

In addition to align the whole clip, you are able to align a body part in a clip to the final pose of the previous clip. This act avoid a sliding issue before the later motion starts.

1. Apply a motion to the character along a path.

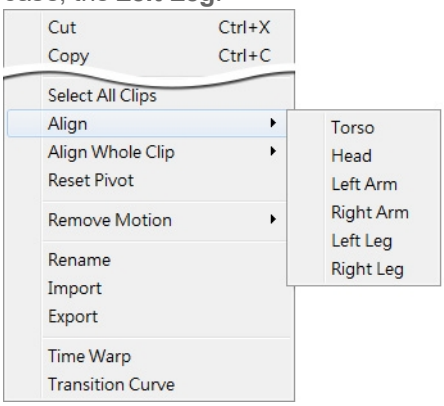


2. Go to a latter time frame after the walking finishes and apply any one motion template (in this case, ballet).



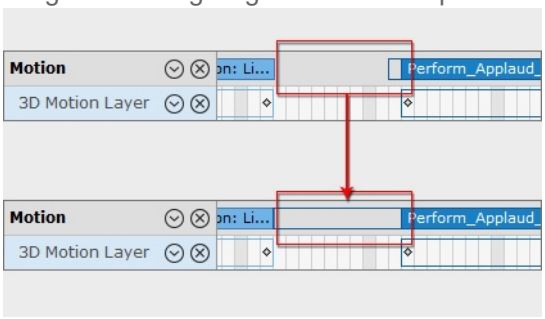
3. Both feet hop as soon as the character starts to perform the latter motion.

4. Right-click anywhere on the later clip, select the **Align** and pick one of the commands from its sub-menu. In this case, the **Left Leg**.



5. The left leg position in the entire later clip is aligned to the ending pose of the previous clip in order to remove the sliding issue between these two clips.

6. Drag the blending range of the latter clip to connect to the previous one to prevent from sudden change of the poses.



7. Play back to see the result.

Note:

- Always do the alignment before change the blending zone to prevent from unexpected result.
- Please also refer to the Blending Motion Clips section for more information.

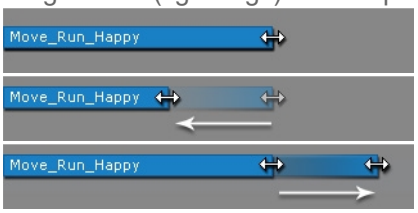
Speed and Loop

Pro & Pipeline

In **CrazyTalk Animator**, you may change the speed and loop status of any clip in any track of the timeline (Sound FX and Music tracks excluded). Adjusting the length of the speed and loop is possible.
*Please note that this feature is for the **Pipeline** and **Pro** versions only.

Speed

1. On the timeline, select any track where a clip exists.
2. Pick the clip.
3. Press the **Speed** button **Down**, on the timeline.
4. Drag the end (right edge) of the clip to change its speed. The longer the clip, the slower it is- and vice versa.



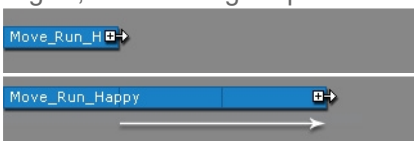
Move your cursor to the end of the clip, it will change into a double-headed arrow.

Squeeze the clip to accelerate the action.

Stretch the clip to decelerate the action.

Loop

1. On the timeline, select any track where a clip exists.
2. Pick the clip.
3. Press the **Loop** button **Down**.
4. Drag the end (right edge) of the clip to change its loop time. The clip then shows a series of connective rect-angles, each rectangle represents one loop.



Move your cursor to the end of the clip, it will change into a single-headed arrow with a plus box.

Move your cursor right to loop the clip.

Blending Motion Clips

When applying motions one after the other, you will often come across a problem where the last frame of the first clip doesn't match the first frame of the second clip. The character may be in two completely different poses, and this can cause a problem when transitioning from one clip to another. In order to blend the poses, you need to use the **Blending** feature on the **Timeline**.

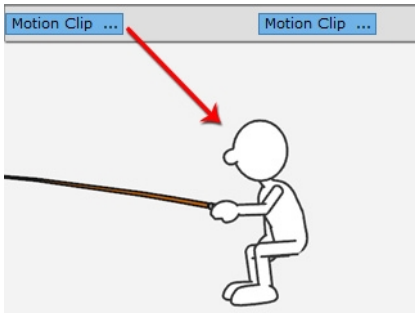
Each clip contains a transition area at the beginning. Find out how to use this area to blend two clips together below.

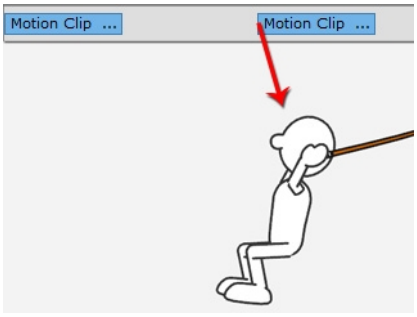
Note:

- It is highly suggested that you use either two 2D motions or two 3D motions for the best blending effect.
- Although blending can be performed between 2D and 3D motions, the results may not always be ideal or accurate.

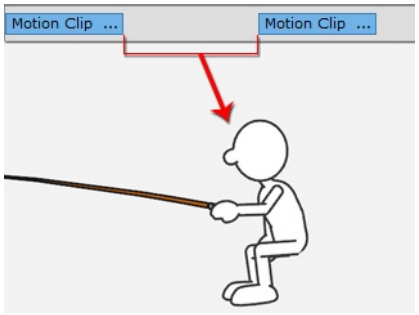
Smoothening Transition for Motions in Identical Directions

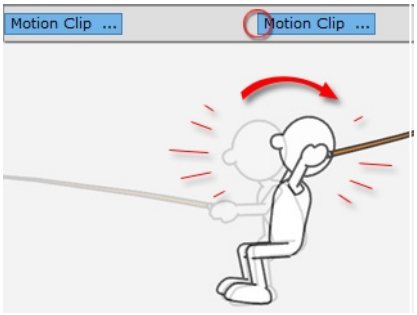
1. Apply two motion clips to your scene. The illustrations below show the poses of the character at the end and start frames of the two clips.





2. The interval pose of the character remains the same as the last pose of the previous clip. It will suddenly snap to the pose of the second clip when the playhead encounters it.





Still interval pose (without blending) Snapping to the second pose with a sudden change

You may play back to view the motions without transition effect.

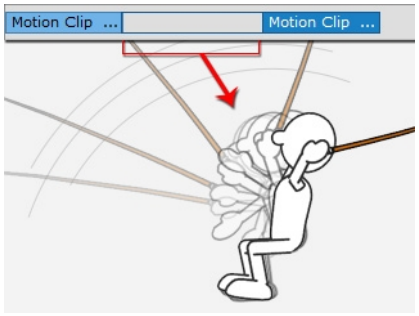
3. Select the later clip and notice the blank transition area before the clip. (Empty rectangle)



4. Drag the left edge to decide the start timing for the transition.



5. The character will now gradually change its pose during the duration of the transition area.



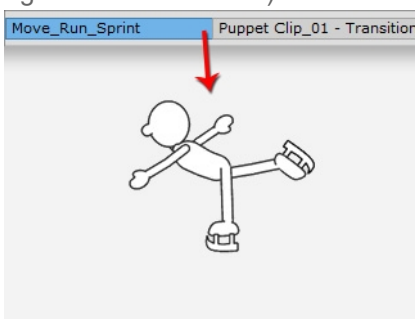
Note:

The blending area can overlap the previous clip if you want the blending effect to happen earlier.

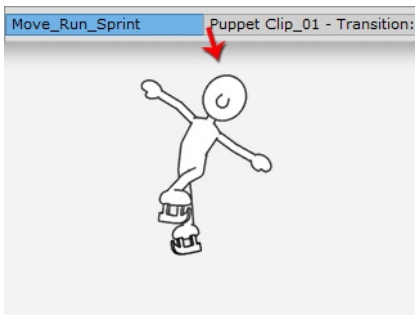
Smoothing Transitions for Motions with Different Directions

When a character has two motions that are in different directions, the hopping issue will be even more obvious because both the directions and the motions suddenly change when the play back runs to the start frame of the latter clip. To solve the hopping issue, simply add transition effects between two motion clip and the hopping issue will be alleviated tremendously.

1. In this project the character has been given two motions (in this case, a skating in 270 degrees and a frontal posing motions are created).



The first running motion is at 315 degrees.

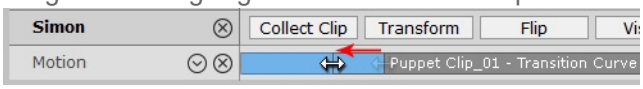


The second running motion is at 0 degrees.

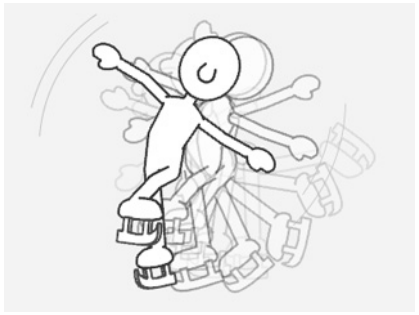
2. Play back to view the result. The hopping issue is very apparent during the transition.



3. Drag the blending edge of the latter motion clip ahead to overlap the previous motion clip a little bit.



4. Play back to view the result. The hopping issue will turn out to be less drastic and the motions appear to be continuous.

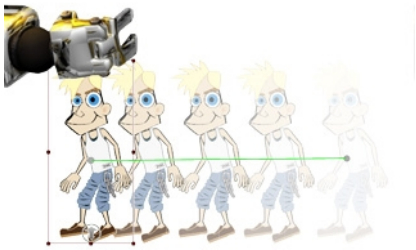


Breaking Clips

The **Breaking Clips** method applies to all the clip-type data in the timeline main tracks (main tracks under **Sound FX** are excluded). With this feature you may extract partial clips from a very long clip and delete the redundant clips.
*Please note that this feature is for the **Pipeline** and **Pro** versions only.

Breaking Clips

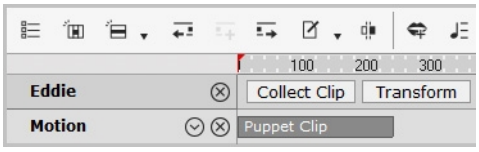
1. Select the character. In this example, the character already moves along a path without any body motion.



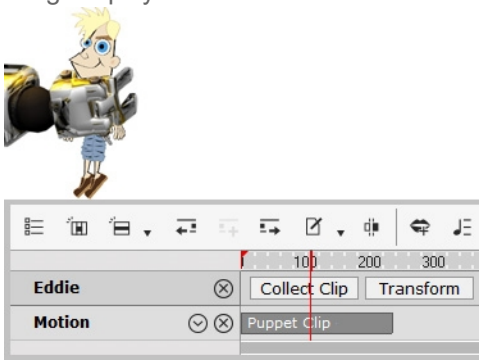
2. Use the Body Puppet Editor to record and produce a motion clip.



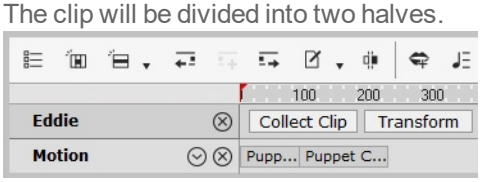
3. If you do not want the last half-motion, then press **F3** to launch the **Timeline**.
4. Click the character's **Motion** main track button. You will see the clip in the track.



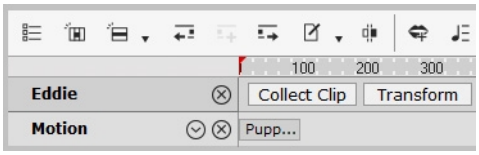
5. Drag the play head to the time frame where you need to break the clip up into new half clips.



6. Click the **Break** button on the **Timeline** toolbar.
7. The clip will be divided into two halves.



8. Select the second one and delete it.



9. Play back the project and the character's motion will stop at the end of the trimmed clip.



Pro & Pipeline

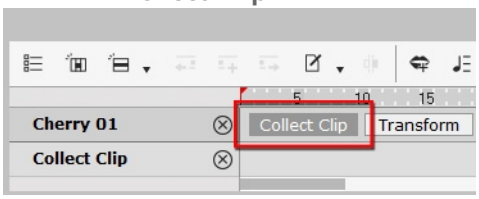
Collecting Clips for a Character

In addition to using the templates from the **Content Manager**, you are also allowed to make custom clips, to apply to any character, or define the clip as one of the commands in the action menu.
*Please note that this feature is for the **Pipeline** and **Pro** versions only.

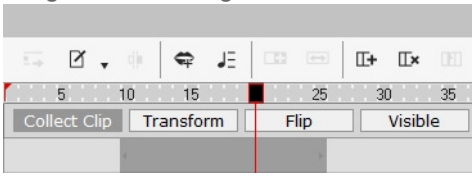
1. Select a character that already has expressions and motions.



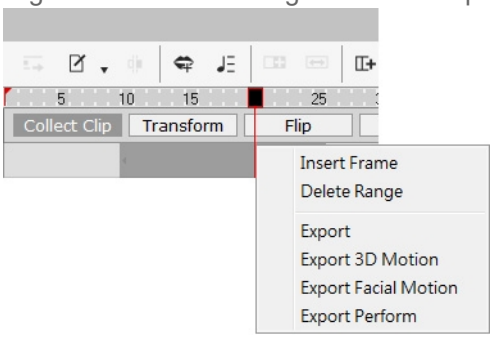
2. Click the **Show Timeline** button (Hotkey: F3).
3. Press the **Collect Clip** button down to show its track.



4. Drag to make a range to collect the current motions or expressions into a clip.



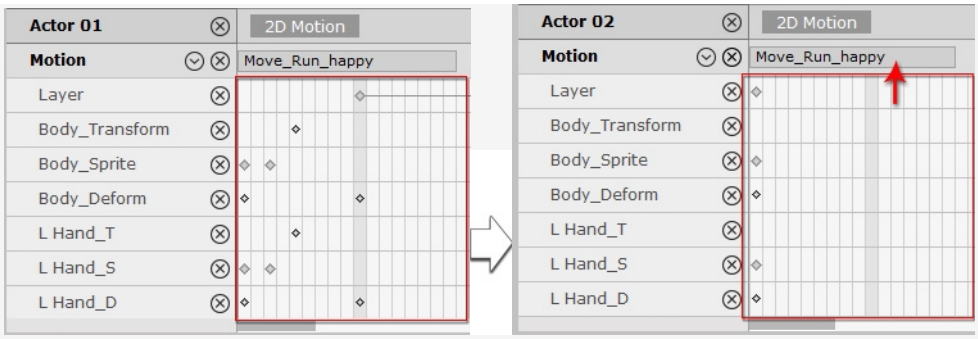
5. Right-click within the range. A menu will pop up.



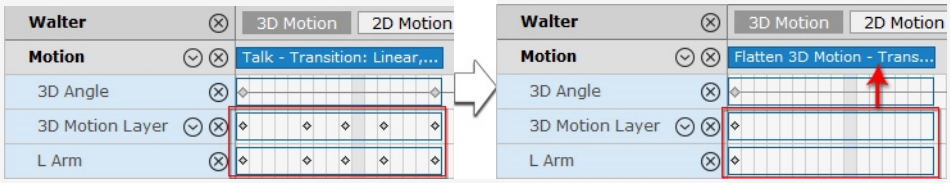
- **Export**: Merge and export all the keys and clips in the **Sub-tracks** (under the **Motion** main track) within the range as a *.ctMotion file.
- **Export 3D Motion**: Merge and export all the keys and clips in the **Motion** track and **Sub-tracks** (under the **3D Motion Layer** track) within the range as a *.ct3DMotion file.
- **Export Facial Motion**: Merge and export all the keys and clips in the **Face Motion** track and **Sub-tracks** (under the **Face Motion** main track) within the range as a *.ctFCS file.
- **Export Perform**: Merge and export all the keys and clips in the **Motion**, **Face Motion** track and **Sub-tracks** (under the **Motion** and **Face Motion** tracks) within the range as a *.ctPerform file.

Note:

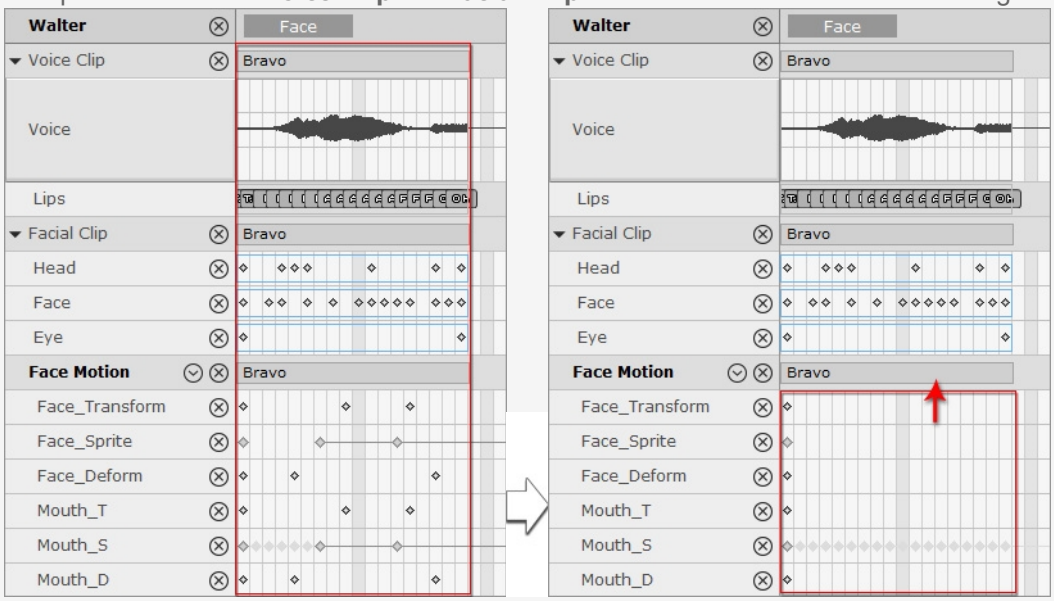
- After you once again import the exported 2D motion clip (*.ctMotion), you will find that all the keys have been flattened into a single clip.



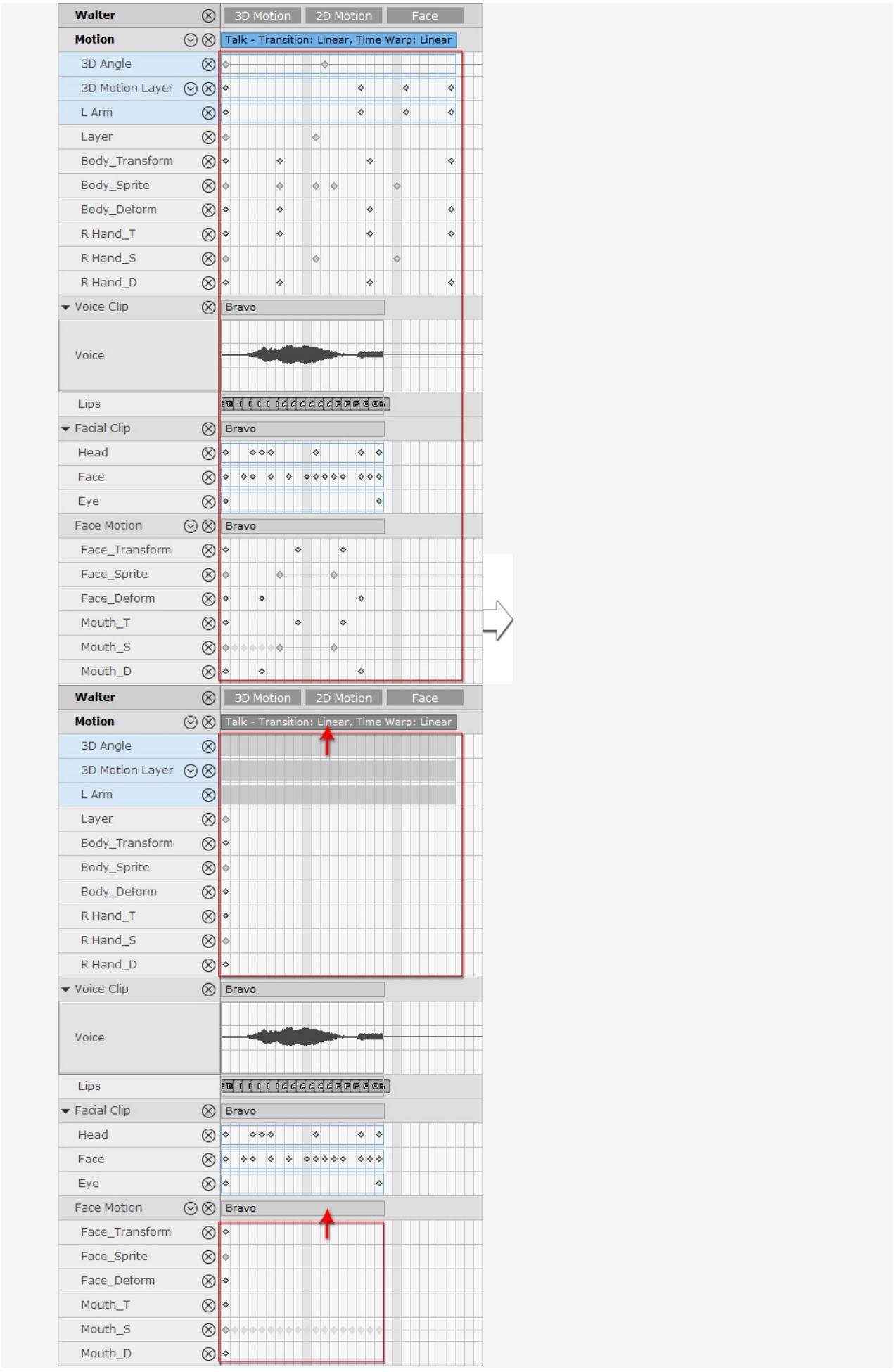
- After you once again import the exported 3D motion clip (*.ct3DMotion), you will find that all the keys (Angle keys excluded) have been flattened into a single clip.



- After you once again import the exported facial motion clip (*.ctFCS), you will find that all the keys except for those in the **Voice Clip** and **Facial Clip** tracks have been flattened into a single clip.



- After you once again import the exported Perform clip (*.ctPerform), you will find that all the keys except for those in the **Voice Clip** and **Facial Clip** tracks have been flattened into a single clip under the **Motion** and **Face Motion** main tracks respectively.


Walter
3D Motion
2D Motion
Face
Motion
Talk - Transition: Linear, Time Warp: Linear
3D Angle
3D Motion Layer
L Arm
Layer
Body_Transform
Body_Sprite
Body_Deform
R Hand_T
R Hand_S
R Hand_D
Voice Clip
Bravo
Voice
Lips
Facial Clip
Bravo
Head
Face
Eye
Face Motion
Bravo
Face_Transform
Face_Sprite
Face_Deform
Mouth_T
Mouth_S
Mouth_D
Walter
3D Motion
2D Motion
Face
Motion
Talk - Transition: Linear, Time Warp: Linear
3D Angle
3D Motion Layer
L Arm
Layer
Body_Transform
Body_Sprite
Body_Deform
R Hand_T
R Hand_S
R Hand_D
Voice Clip
Bravo
Voice
Lips
Facial Clip
Bravo
Head
Face
Eye
Face Motion
Bravo
Face_Transform
Face_Sprite
Face_Deform
Mouth_T
Mouth_S
Mouth_D

- You may use the custom clip files with the following methods:
  - Drag and drop the file onto a target character.
  - Defining Custom Action Menu

Collecting Clips for Props

If you create a prop (containing single or multiple sprites) with animations, and you want to export the animation, then follow the steps below:

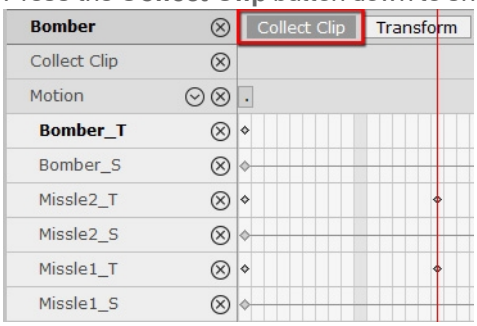
Note:

Collecting Clip only collect the data from the **Transform**, **Deform**, **Sprite Switch** and **Opacity** track, the data in the **Transform** track will not be collected.

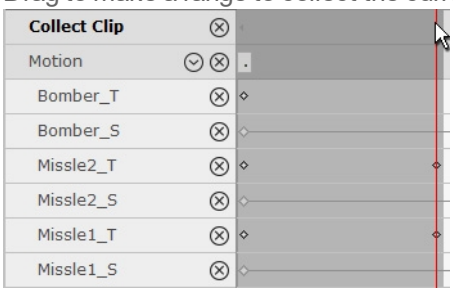
1. Select a prop (Multiple sprites) with **Sprite Transform** or **Sprite Switch** animations.



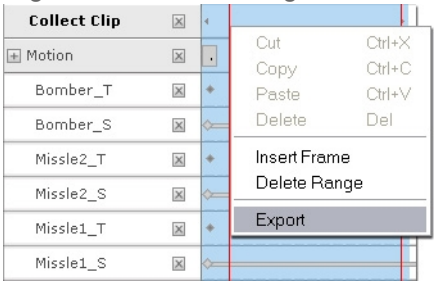
2. Click the **Show Timeline** button (Hotkey: F3).
3. Press the **Collect Clip** button down to show its track.



4. Drag to make a range to collect the current animations into a clip.



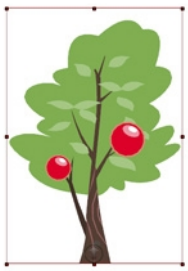
5. Right click within the range and select **Export**. Save it as an animation file (*.ctAnim)



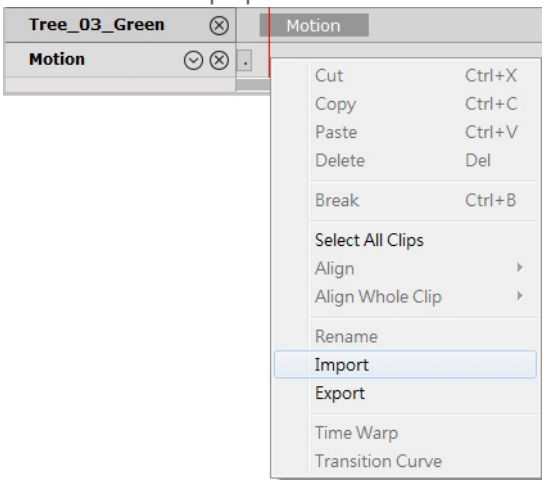
Applying Animations to Props

If you have exported the animation of a prop, then you may apply this animation to any other props.

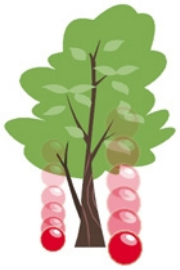
1. Select a new prop.



2. Right-click on where you want the motion to start in the prop's **Motion** track, and select **Import** to load the animation into the new prop.



3. The new prop will then start the animation.

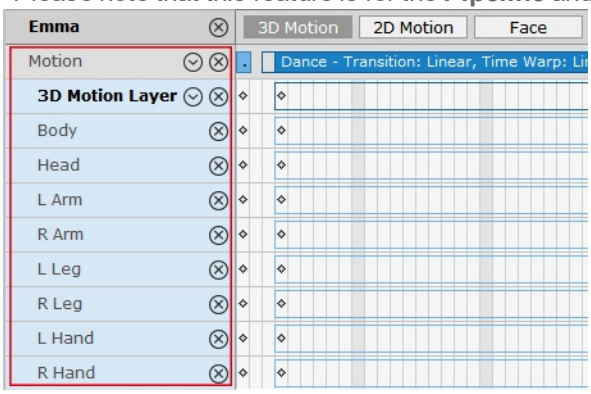


3D Motion Layer Tracks

Pro & Pipeline

The **3D Motion Layer** tracks are used for fine-tuning an actor's 3D motions. You may generate simple **Key Frame Animation** or add **Animation Layers** to an existing animation clip. Basically, all the light blue sub-tracks under the main **Motion** track, are 3D motion layer tracks.

*Please note that this feature is for the **Pipeline** and **Pro** versions only.



Note:

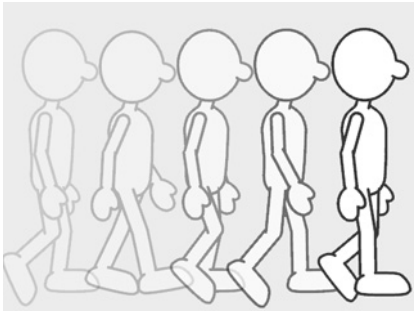
- The 3D motion clip will be stored in the **Motion** main track and highlighted in **Blue**.
- The **3D Motion Layer** and its sub-tracks are also highlighted in **Light Blue**.

Motion Layer Concept

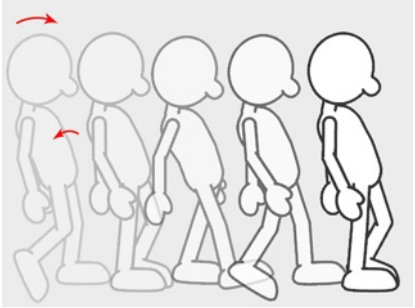
The **Timeline** can be docked to the top and bottom of the main program when you drag and drop it into the area. You may use F3 to toggle the visibility of the **Timeline** panel.

Motion Clip and Transform Key

Given a 3D motion on a character before the motion is modified with a **3D Motion Layer** key.



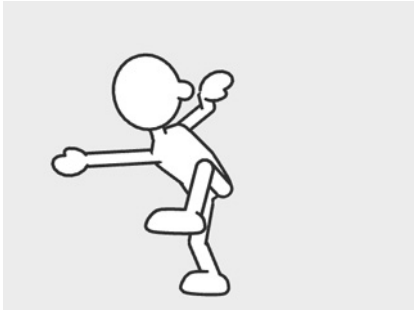
The motion will be modified after being affected by a **3D Motion Layer** key.



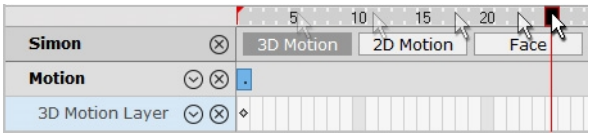
Key Frame Animation

To fully understand **Key Frame Motion**, you will need to remove all the motion clips in the **Motion** main track. Then create your own key by key motion for the actor.
Follow the steps below to generate **Key Frame Motion**.

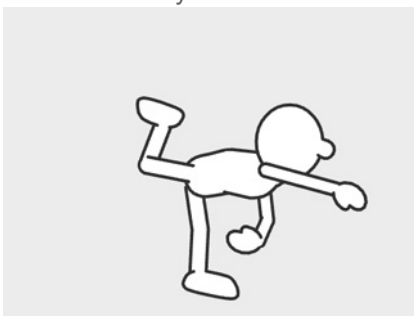
1. Select a G2 character, and go to the desired time frame to create the first motion key with the **3D Motion Key Editor**.
2. In the **3D Motion Key Editor** window, utilize the controls to set a 3D motion key.



3. Go to another time frame.



4. Add another key.



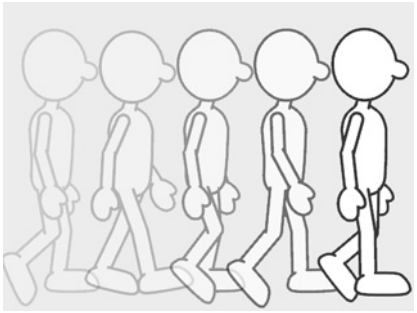
5. Play the project to see the results. The transition effect will automatically be generated between these two keys.



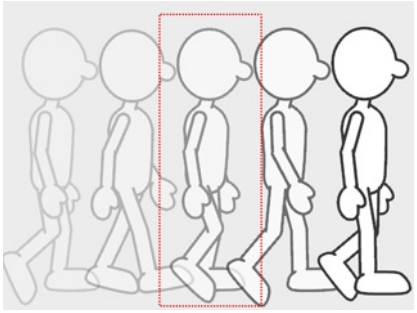
Layered Animation

Another powerful feature of the **3D Motion Layer** is to fine-tune the **3D motion clips** on the **Motion** main track. The keys on the **Motion Layer** track have the highest priority for the bone offset.

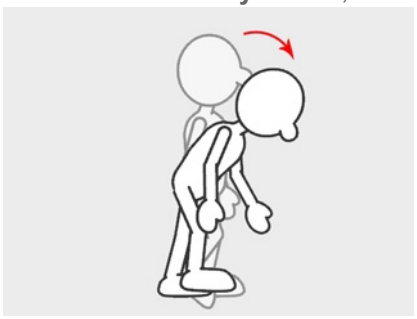
1. Apply a 3D motion clip to the character.



2. Go to the middle time frame of this motion.



3. In the **3D Motion Layer** track, add a motion layer key to any desired time frame.



4. The key will influence the entire motion clip unless another key is added afterward.

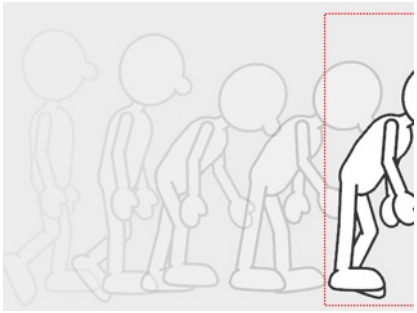


Restoring Animation from Motion Layer Keys

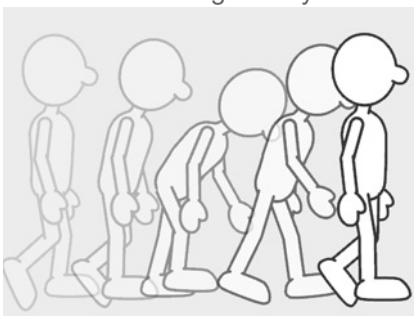
If you need to eliminate any influence from previous transform layer keys, then you may use the **Default** feature to set an initial data to all the virtual bones, so that the original pose can be retrieved.

In the last example, the character bends from the middle of the motion up until the end of the clip. Please follow the steps below to reset its pose at the end of the motion:

1. Go to the end time frame of the motion.



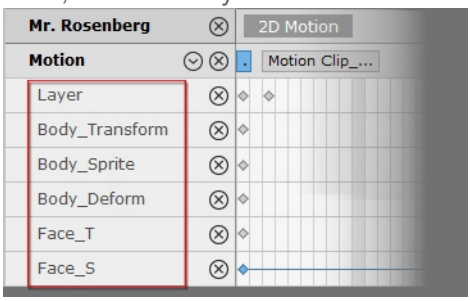
2. In the **3D Motion Key Editor**, click the Default Pose **Default** button to set initial keys to all the virtual bones.
3. The character will gradually return to the up straight pose at the end of the motion.



2D Motion Layer Tracks

Pro & Pipeline

The **Motion Layer** tracks are important tracks for fine-tuning an actor's motion. You may generate simple **Key Frame Animation** or add **Animation Layers** to an existing animation clip. Basically, all the sub-tracks under the main **Motion** track, are motion layer tracks.



Motion Layer Concept

Motion Clip and Transform Key

Given a motion on a character- before the motion is modified with a **Transform** key.

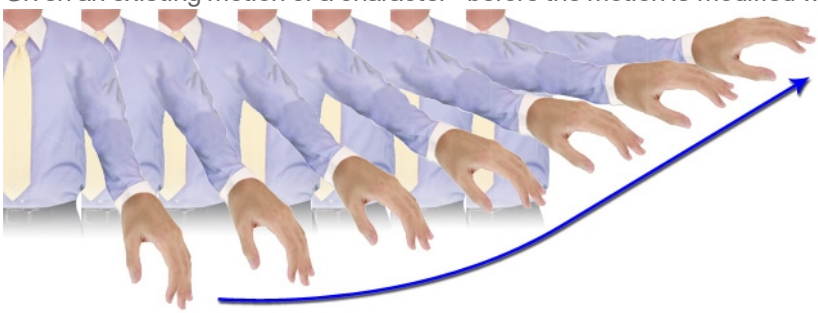


The motion will be modified after being affected by a **Transform** key.

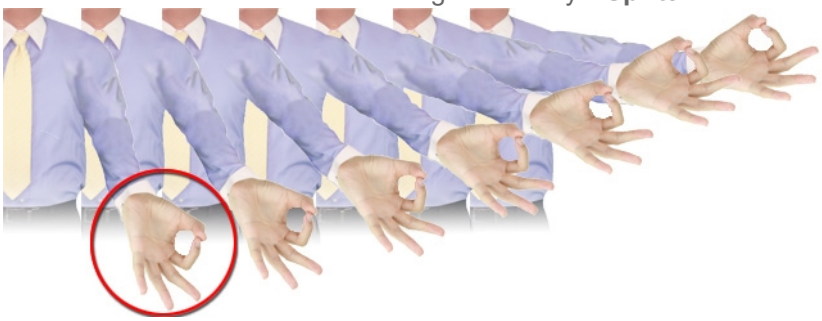


Motion Clip and Sprite Switch

Given an existing motion of a character - before the motion is modified with a **Sprite** switch.



The motion will be modified after being affected by a **Sprite** switch.



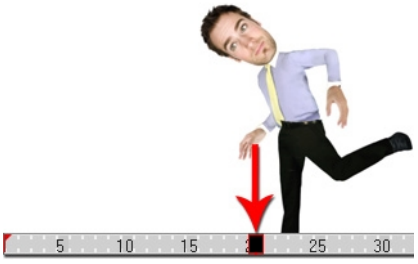
Key Frame Animation

To fully understand **Key Frame Animation**, you will need to remove all the motion clips in the **Motion** main track. Then create your own key by key motion for the actor.
Follow the steps below to generate **Key Frame Animation**.

1. Select a character, and go to the desired time frame to create the first motion key with the **Body Key Editor**.
2. In the **Body Key Editor** window, utilize the **Pose** and **Body** mode to set a motion key.



3. Go to another time frame.



4. Add another key.



5. Play the project to see the results. The transition effect will automatically be generated between these two keys.



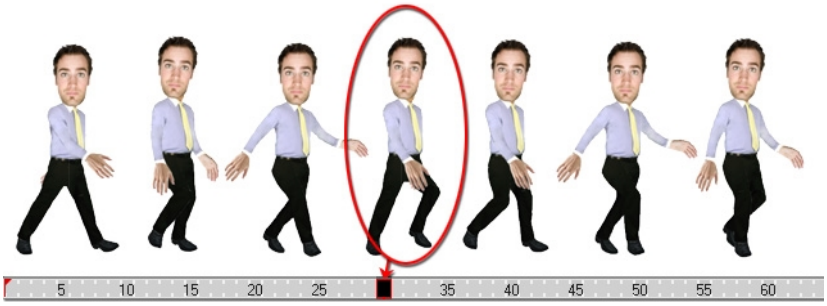
Layered Animation

Another powerful feature of the **Motion Layer** is to fine-tune the motion clips on the **Motion** main track. The keys on the **Motion Layer** track have the highest priority for the bone offset.

1. Apply a motion clip to the character.



2. Go to the middle time frame of this motion.



3. In the **Transform** main track, add a motion layer key to any desired time frame (if you don't set any other keys later on, then this key will affect all the latter motions).



4. The key will affect the entire motion clip.

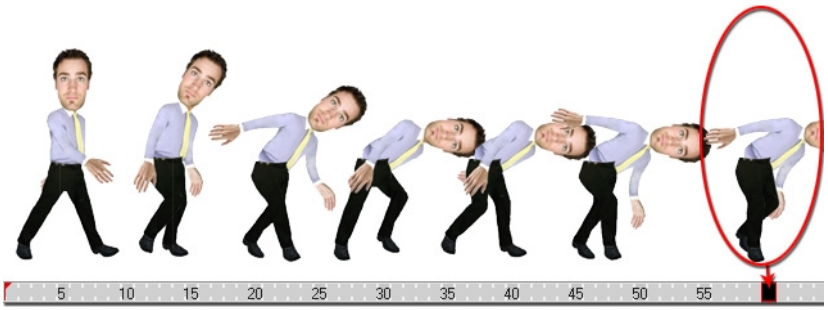


Restoring Animation from Motion Layer Keys

If you need to eliminate any influence from previous transform layer keys, then you may use the **Default Pose** feature to set an initial data to all the virtual bones, so that the original pose can be retrieved.

In the last example, the character bends from the middle of the motion up until the end of the clip. Please follow the steps below to reset its pose at the end of the motion:

1. Go to the end time frame of the motion.



2. In the **Body Key Editor**, click the 

Default Pose button to set initial keys to all the virtual bones.
3. The character will gradually return to the up straight pose at the end of the motion.



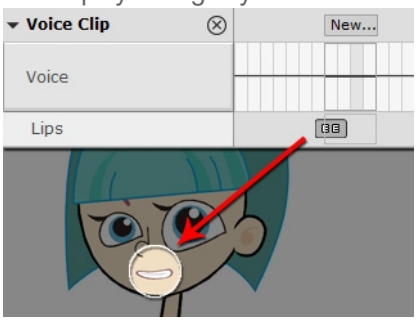
Facial Clips and Keys

There are tracks relevant to the facial features of a character, including tracks of clips and tracks of keys. You may need to know how to use them when you wish to use the timeline for authoring animations.

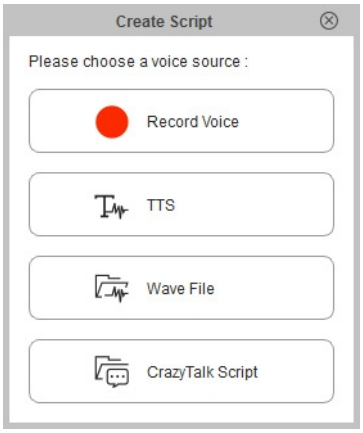
Voice Clip and Lip Keys

When you apply voices to characters, the lip and mouth animation will be generated automatically by **CrazyTalk Animator**. Any lip synching keys set manually before will be kept because of the Clip and Key Priority.

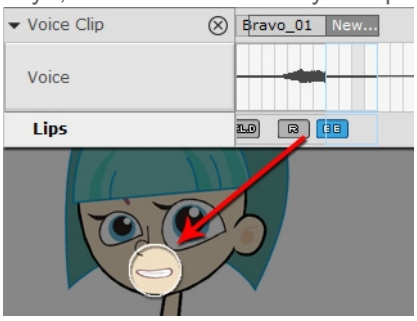
1. Set a lip synching keys for a character. A new clip will be automatically generated on the **Voice Clip** track.



2. Go to some frames ahead, click the **Create Script** button.
Click on one of the buttons to add a voice to the character.



3. The voice will be presented in a clip form inside the **Voice Clip** track. When the clip encounters lip-synching keys, it will be overridden by the lip viseme shapes.

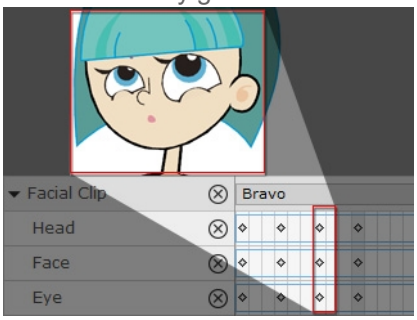


Facial Clips and Head, Face, Eye Keys

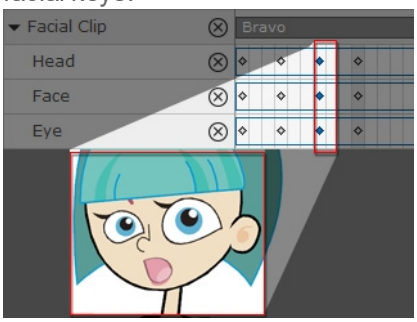
Facial expressions can be produced by two different data types: **Facial Expression Clips** and **Facial Expression Keys**.

If you have already applied a facial expression clip to your character, **Facial Expression Keys** may override the expressions from the **Facial Clip**. Please refer to the Clip and Key Priority section.

1. Record a facial expression clip for a character by using the Face Puppet Editor. The facial expression keys will be automatically generated on the relevant tracks: **Head**, **Face** and **Eye**.



2. Double click on the time frame (with facial expression key) to add a special facial expression key by using the Face Key Editor. The original expressions from the **Facial Clip** will be overridden by the subsequently added facial keys.

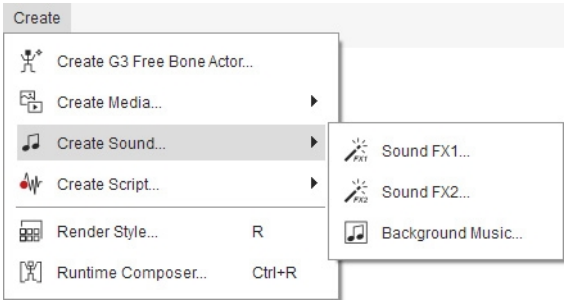


Modifying Sound Clips

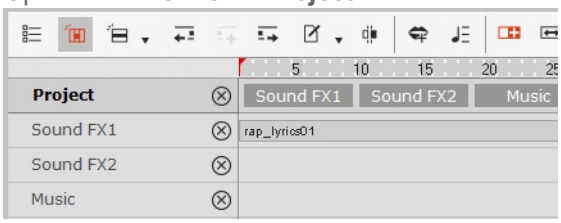
CrazyTalk Animator provides three tracks for adding audio files. After the audio files are loaded, you may adjust the basic settings for the individual audio clips.

Importing Sound

1. Click the **Create Sound** button in the **Create** menu and select the target track you want the sound to be put in to.

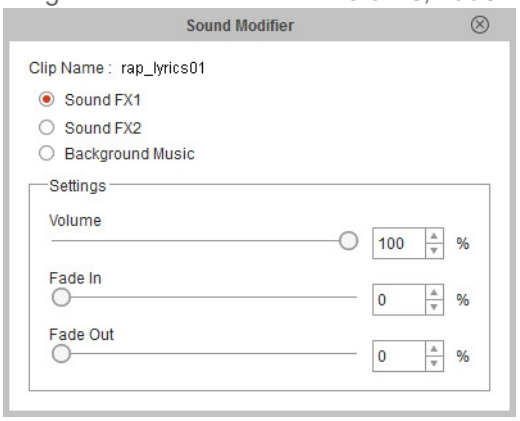


2. Open the **Timeline** >> **Project** and show all the tracks related to the sound for the project.



Modifying Sound Clips

1. Select the target sound clip.
2. Click the **Sound Modify** button on the timeline toolbar.
3. Drag the slider to decide the **Volume**, **Fade In** and **Fade Out** percentage.



Note:

The maximum percentage of the **Fade In** and **Fade Out** is 50%. This means the percentage of the whole clip.

Applying Elastic Motions to Props (New for v3)

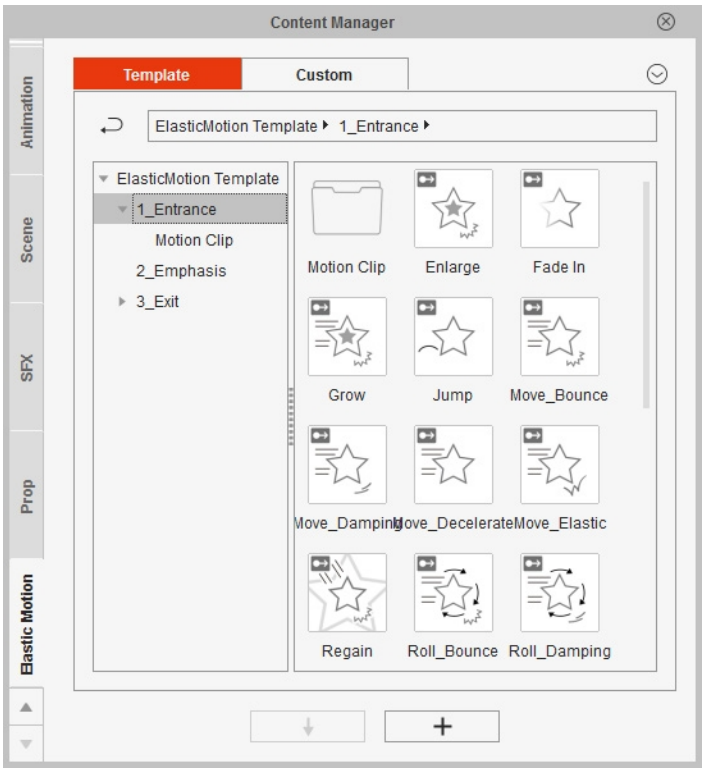
Usually, you create prop animations by mean of the key-frame-animation method. Instead of that, **CrazyTalk Animator** provides libraries in which well pre-made **Elastic Motion** templates are ready for applying. Most common animations can be found in the libraries and you just need to apply them to create lively animations for props.

Applying Elastic Motions to Props

1. Apply a prop.



2. Switch the Content Manager to the **Elastic Motion** >> **Template** tab >> **ElasticMotion Template** >> **1_ Entrance**.



3. Drag and drop one of the desired templates onto the prop to create an entrance animation.



The prop will then instantly perform the entrance animation of the template.



4. Switch to the **2_Emphasis** library and apply another template to the prop.



You will see the prop performing animation where it is.



5. Switch to the **3_Exit** library and apply another template to the prop.



The prop will then move out with the animation of the template.

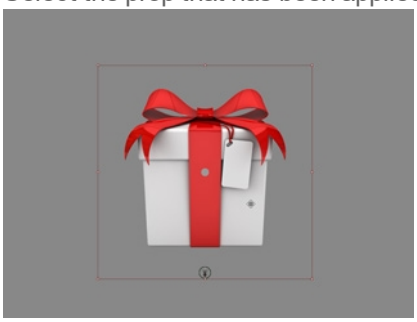


6. The prop's animation is thus created without spending a lot of time setting keys.

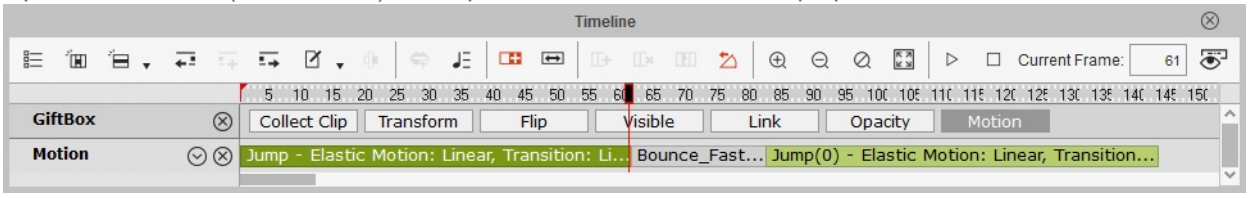
Adjusting Applied Elastic Motions

If you wish to adjust the applied elastic motions, then please follow the steps below:

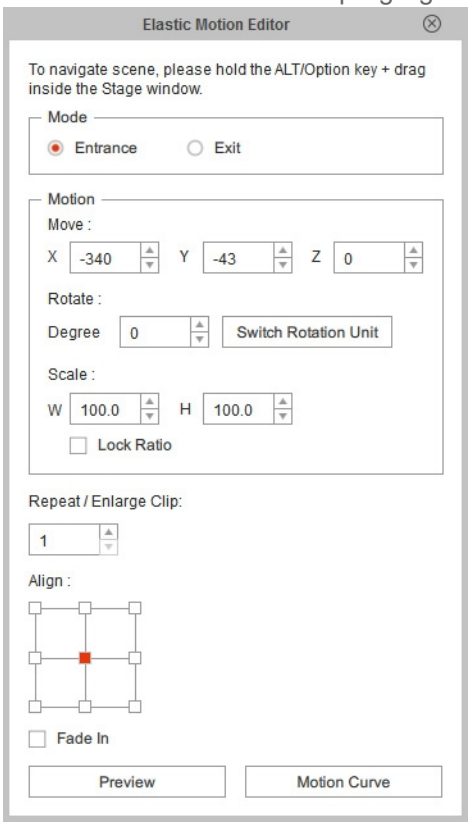
1. Select the prop that has been applied with elastic motions.



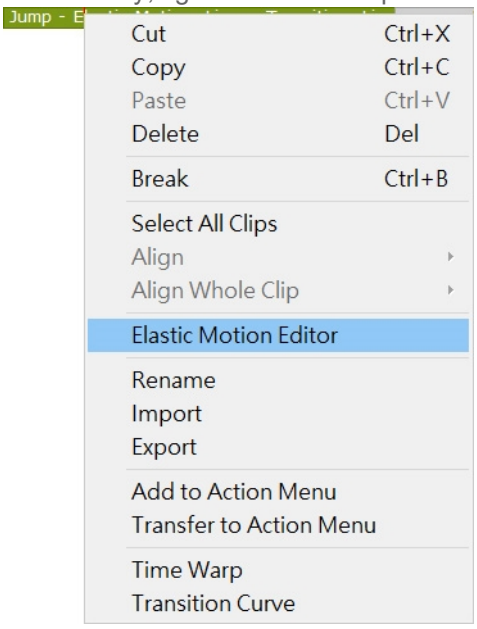
2. Open the **Timeline** (Shortcut: **F3**) and expand the **Motion** track of the prop.



3. Double-click on the motion clip highlighted in **Green** to open the **Elastic Motion Editor**.



Alternatively, right-click on the clip and select the **Elastic Motion Editor** item from the Pop-up menu.



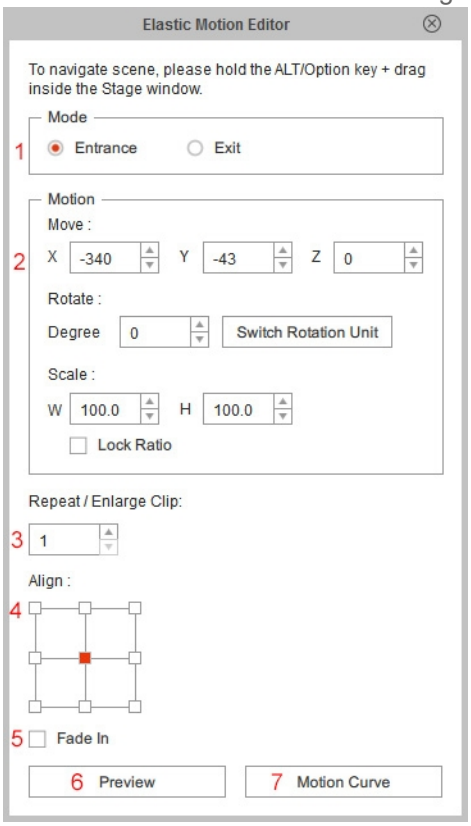
4. Adjust the settings in the editor to fine-tune the elastic motion.

Note:

If you wish to edit the applied elastic motion, then please refer to the **Introduction of Elastic Motion Panel** section for more information.

Introduction of Elastic Motion Panel (New for v3)

The Elastic Motion can be edited through the **Elastic Motion Editor** as shown below:

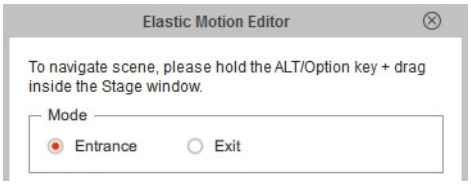


	Name	Description
1	**Mode** Pipeline Only	These two radio buttons switch the current clip to an entrance or exit animation.
2	**Motion**	You can adjust the **RTS** settings of the status of the prop at the start or at the end time.
3	**Repeat / Enlarge Clip**	Modify the number of this field to repeat and enlarge the current motion clip.
4	**Align**	Use this control to set the center position of the prop for rotating and scaling.
5	**Fade In / Fade Out**	Activate or deactivate this box in order to make the entering or exiting prop gradually become semi-transparent and vice versa.
6	**Preview**	Click this button to preview the elastic motion result of the selected animation clip.
7	**Motion Curve**	Click this button to switch to the **Motion Curve** panel for adjusting the transition method from the start point (blue bounding box) to the end point (black bounding box).

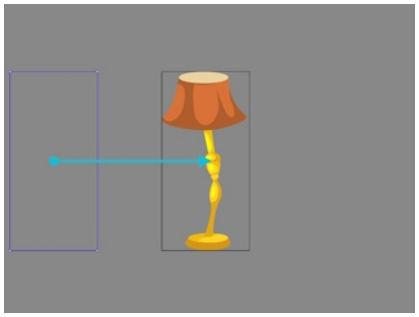
Entrance or Exit

The **Entrance** and **Exit** mode for a elastic motion clip is exchangeable. You can identify if a clip is entrance or exit one by two methods:

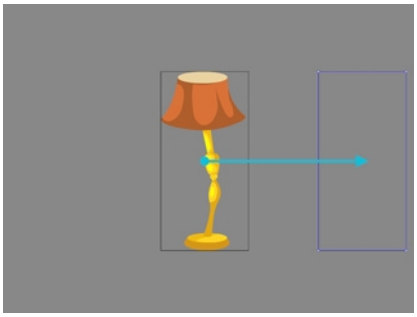
- Radio button in the **Elastic Motion Editor**: You can identify the clip by the chosen radio button. Pipeline Only



- **Arrow Direction** in the working area: When the blue arrow starts from a blue box, the clip is an **Entrance** clip; while when the clip is an **Exit** clip, the blue arrow points to the blue bounding box.



Blue arrow starting from a blue bounding box: **Entrance Clip**



Blue arrow pointing to a blue bounding box: **Exit Clip**

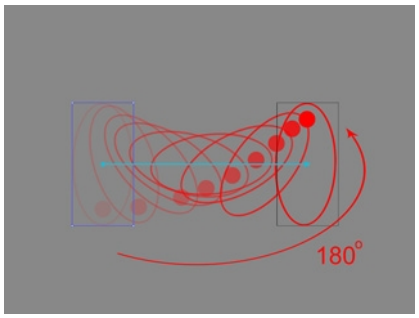
Note:

The settings in the **Motion** group in the **Elastic Motion Editor** is used to adjust the status of the **Blue Bounding Box**. The black box can not be adjusted.

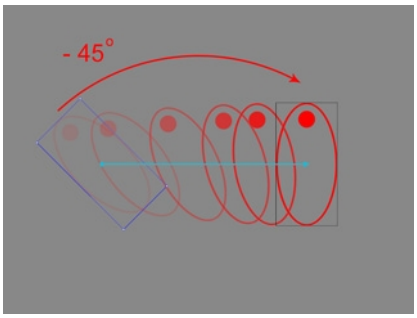
Rotation

The settings in the **Motion** group is used for modifying the blue bounding box. However, the **Rotation** in the settings is the most different from the traditional use of angle setting. You can click on the Switch Rotation Unit button to change the method for setting the angle of the blue bounding box.

- **Degree**: The **Degrees** determine the rotating degrees of the prop when the animation ends; the value range is from **-9999** to **9999** degrees. A negative value rotates the prop clockwise while a positive value turns it counterclockwise.

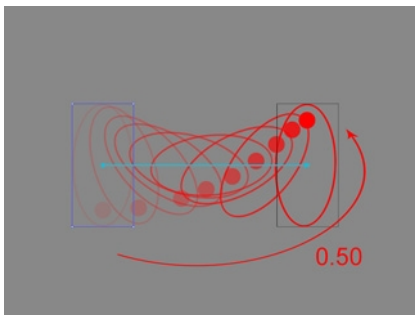


Degree = **180**

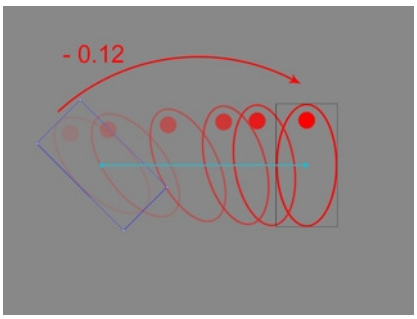


Degree = **-45**

- **Turns**: The **Turns** determines the rotating times for the prop; the value range is from **-27.77** to **27.77**. It allows two digits after the floating point. A negative value rotates the prop clockwise while a positive value turns it counterclockwise



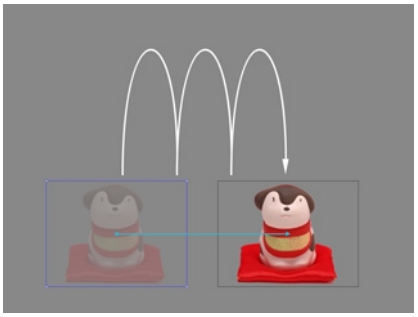
Turns = **0.50**



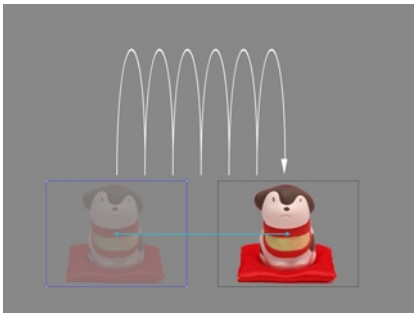
Turns = **-0.12**

Repeat / Enlarge Clip

This setting will extend the length of the animation clip by means of repeating the clip itself. It is different from the looping method because the looping method will always start from the position in the first frame of the clip, while the **Repeat / Enlarge Clip** ensures the props position from the last round when the animation stops.



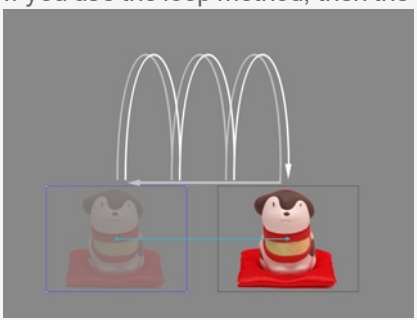
Repeat / Enlarge = 1



Repeat / Enlarge = 2

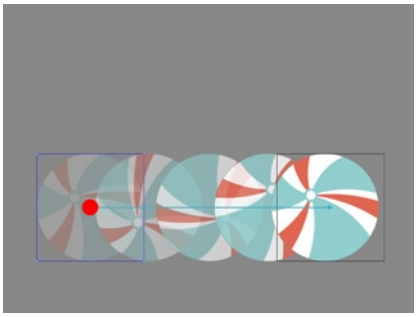
Note:

If you use the loop method, then the animation will always return to the start point after a animation round finishes.

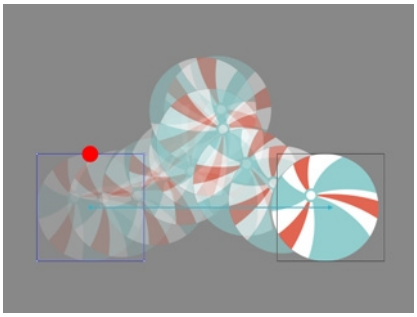


Align

The align feature is used to determine the center for rotating (described in the previous section).



Align = Center



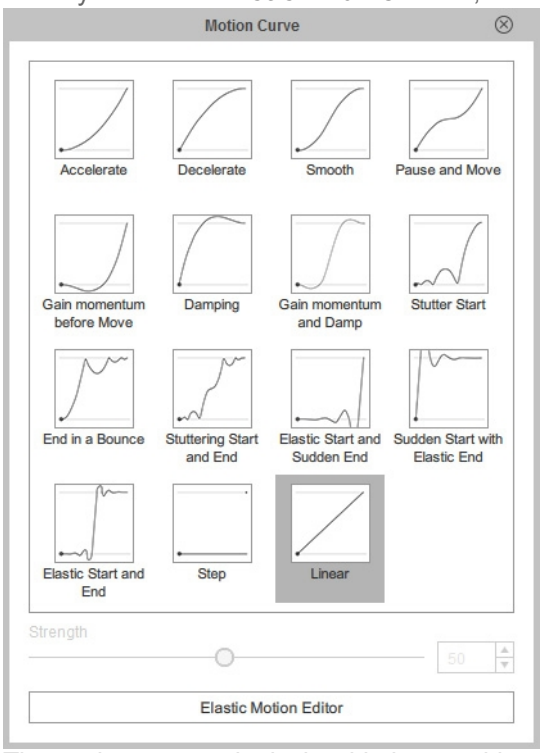
Align = Top

Note:

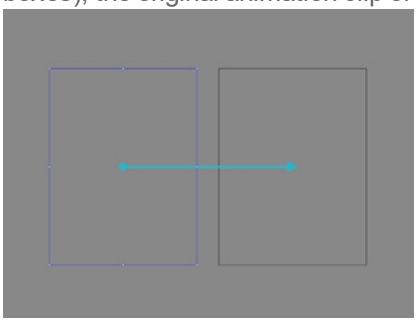
This feature does not affect the true pivot of the prop. It is only used as a rotating base.

Motion Curve

When you click the **Motion Curve** button, the **Elastic Motion Editor** will switch to the **Motion Curve Editor** mode.



The motion curve only deals with the transition method between the start and end point (the blue and black bounding boxes), the original animation clip of the prop is not influenced.

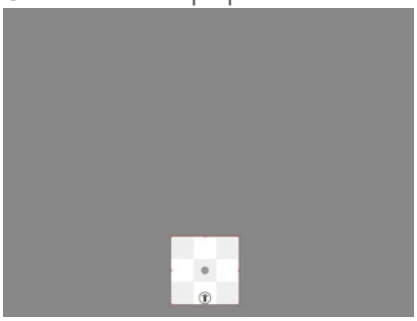


Creating Elastic Motions (New for v3)

Pipeline Only

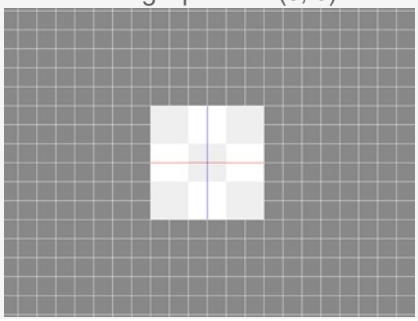
In addition to applying **Elastic Motion Template**, you are allowed to create custom elastic motions with **CrazyTalk Animator**.

1. Create a neutral prop.



Note:

Make sure that the prop's pivot is in the center of it. You can switch to the **Composer** mode to move the sprite to the world origin position (0, 0).



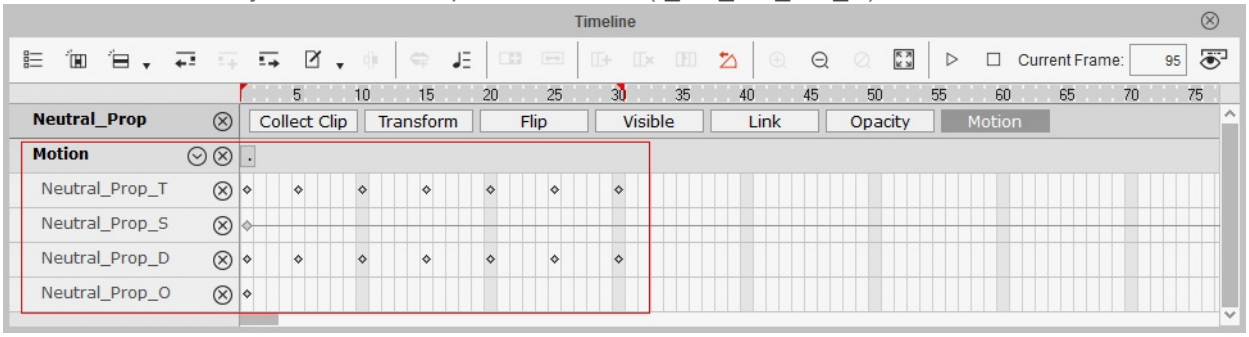
2. Click the **Prop Key Editor** button on the Toolbar.



3. Set **Transform and Deform keys** (sprite-level) in different time frames to generate key-frame animation of the prop (in this case, a jump and distortion animation).

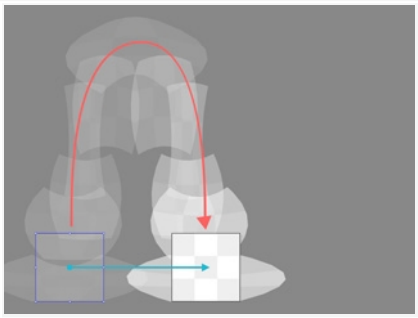


Make sure that the keys are set to the sprite-level tracks (***_T**, ***_S**, ***_D**, ***_O**).

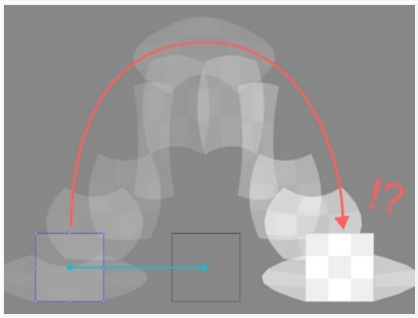


Note:

Make sure the sprite starts and ends the animation at the same position to ensure that the prop correctly falls within the start and end points (blue and black bounding box) when the animation is converted into an **Elastic Motion**.

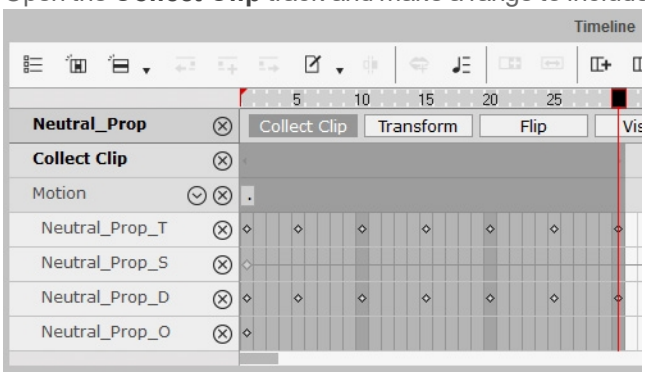


The animation starts and ends at the same position

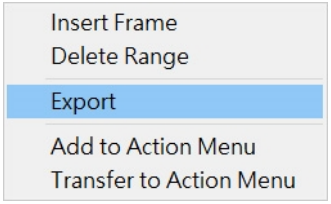


The end position offsets when the animation ends

4. Open the **Collect Clip** track and make a range to include this data.

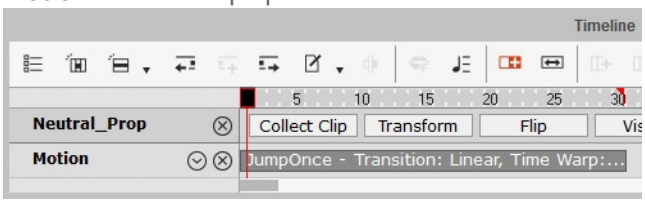


5. Right-click on the **Collect Clip** track in the range, select the **Export** item in the menu.

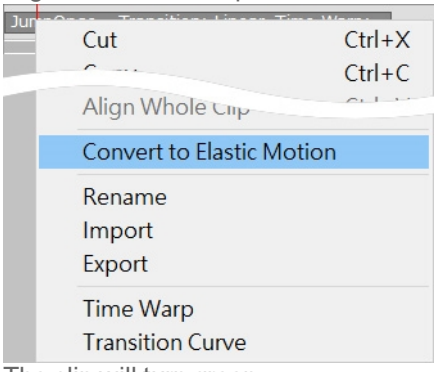


This step saves the data as a prop animation file (in ***.ctAnim** format).

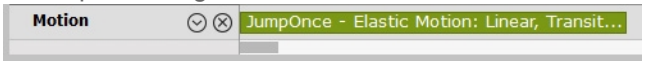
6. Drag and drop the animation onto a prop (it is suggested to use this prop), you will see an animation clip on the **Motion** track of the prop.



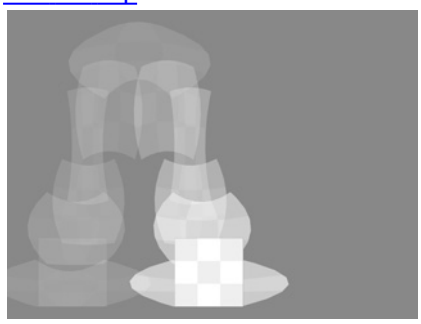
7. Right-click on the clip and select the **Convert to Elastic Motion** item in the menu.



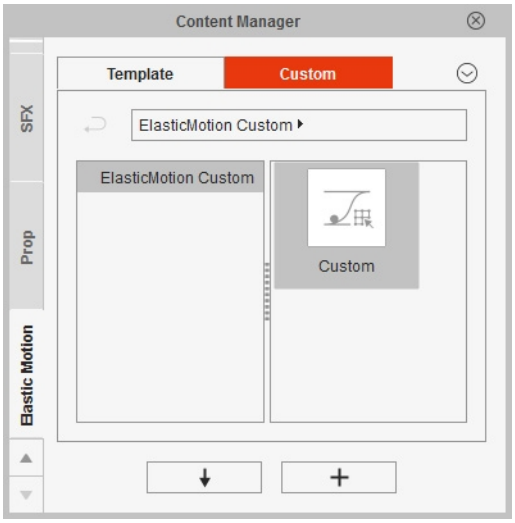
The clip will turn green.



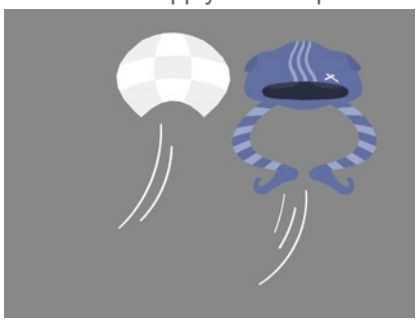
8. Edit the clip with the **Elastic Motion Editor**.



9. Make sure that the clip on the track is selected.
10. Open the **Content Manager** and switch to the **Elastic Motion** library.
11. Click on the **Add** button to add the selected clip into an **Elastic Motion** template (***.ctElastic**).

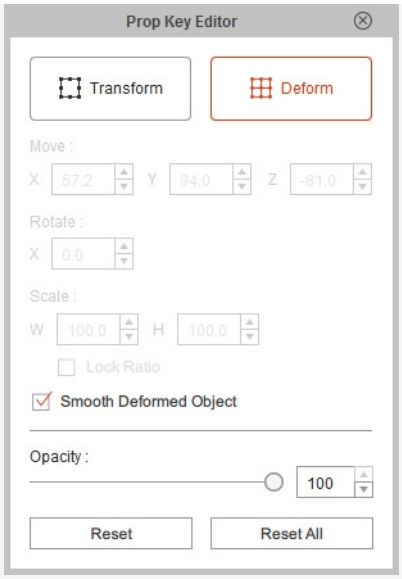


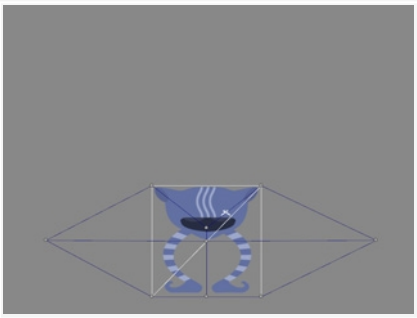
12. You can then apply this template to any other props.



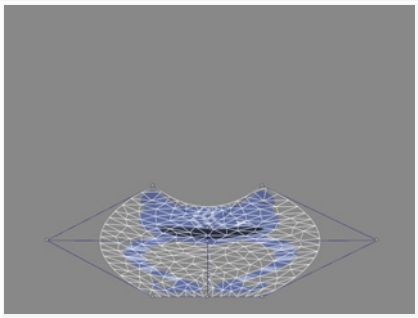
Note:

In order to see the **Deform** effect working on another prop, you must select the prop, open the **Prop Key Editor**, switch to the **Deform** mode and activate the **Smooth Deformed Object** box in order to subdivide the prop.





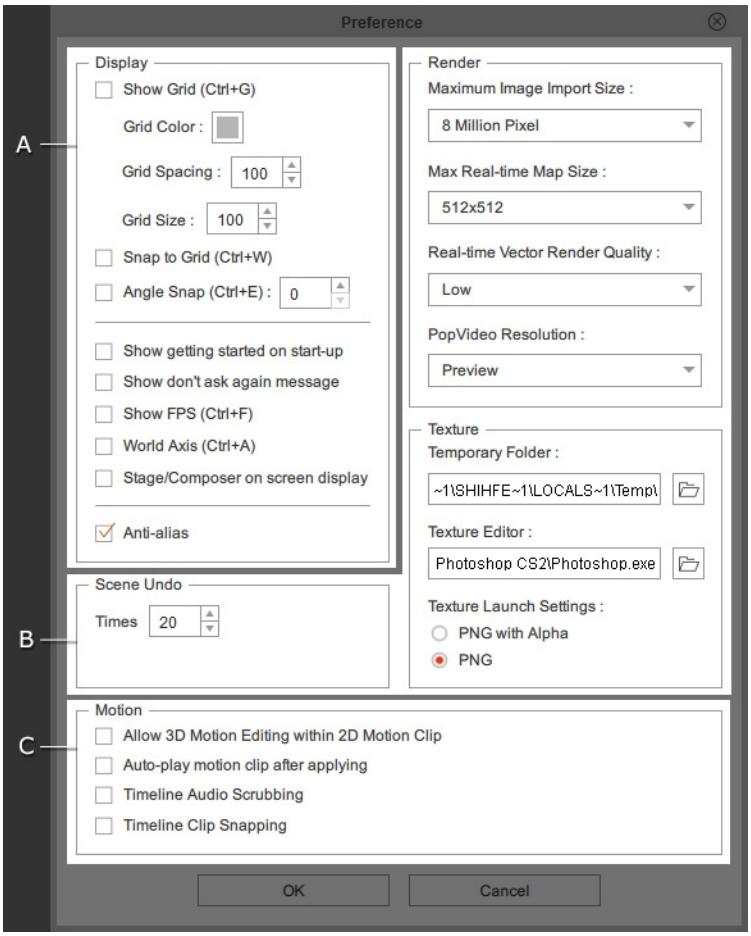
Smooth Deformed Object is **OFF**



Smooth Deformed Object is **ON**

Preference

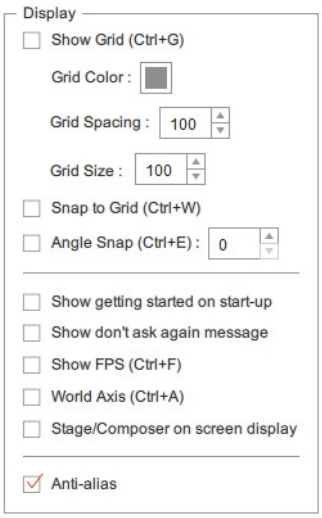
Execute the **Edit** >> **Preference** command from the menu to display the **Preference** panel.



A. Display Information Section
B. System Section
C. Motion Section

Display Information Section

The settings in this section provide information for your reference during editing or recording. However, this information can not be seen in the output files.



Show Grid, Grid Color, Spacing and Size

In **Select Mode**, you may use the **Alt** key to accelerate the camera switch operation.

- If you want to show the grid in the working area, then you may check the **Show Grid** box, or press **Ctrl + G** to toggle the grid.



Grid Off



Grid On

- Your can change the color of the grid by using the color picker.



The default grid color.

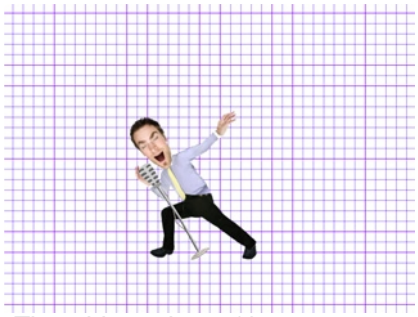


The grid color changes to purple.

- You may also change the **Grid Spacing** value to decide the size of the grid cell .



The grid spacing = 50



The grid spacing = 10

- The **Gird Size** decides the number of the grid cells on both sides of the gird.



Grid size = 1



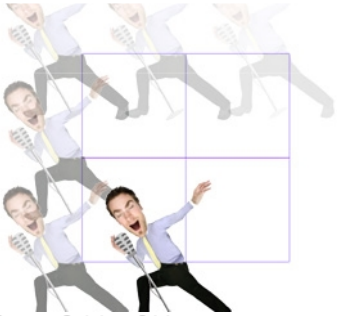
Grid size = 2

Snap to Grid

Check the **Snap to Grid** box so that your objects always snap to the intersecting points on the floor grid when they are manipulated by the **Move** tool.



Snap Grid = OFF



Snap Grid = ON

Angle Snap

You may check the **Angle Snap** box and define an angle that your objects will snap to when they are manipulated by the **Rotate** tool. They will rotate by the specified angle each time.



Angle Snap= 45

FPS

FPS (Frames Per Second) indicates the rendering performance of your system with the current project.

- Check/Uncheck the **FPS** box to show/hide the **Frames Per Second** information on the 3D viewer.
- Alternatively, you may press **Ctrl + F** to toggle FPS on/off.



World Axis

When the **World Axis** box is on, a coordinate displays in the origin.

- Activate/Deactivate the **World Axis** box to show/hide the world axis, or press **Ctrl + A** to toggle on/off.
- The R.G.B. color of the **World Axis** represents the X, Y, Z direction **(R=X, G=Y, B=Z)**

Stage / Composer on screen display

The **Stage/Composer On-screen Display** may show the mode name at the bottom of the working area to indicate if you are in the **Stage** or **Composer** mode.



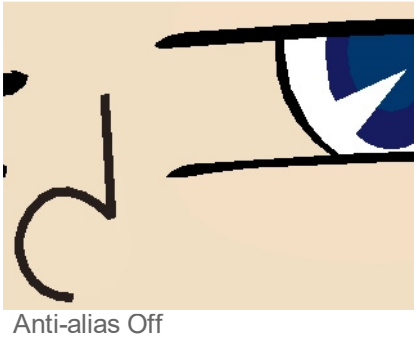
Stage Mode

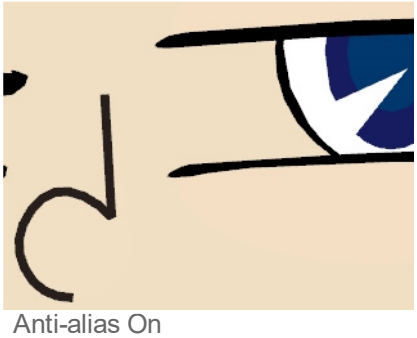


Composer Mode

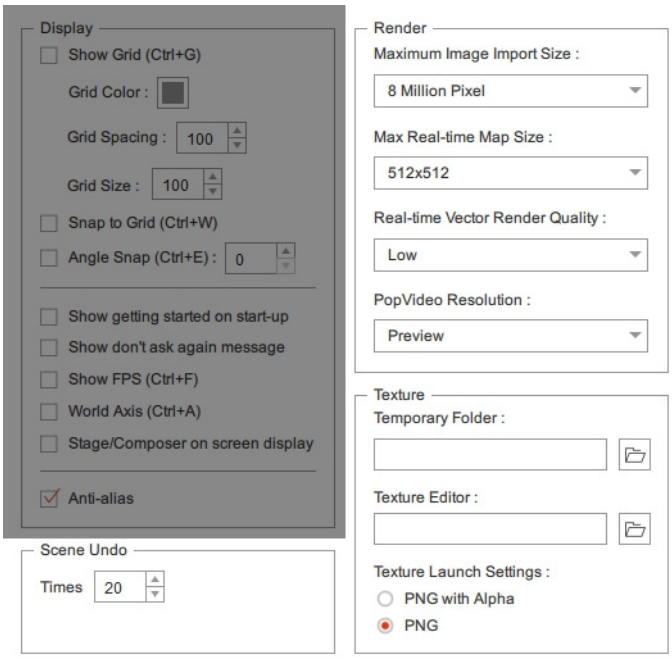
Anti-alias

An anti-aliased output will produce a smooth image with less jagged edges and pixilated areas. Activate the box to turn the **Anti-alias** feature on.


Anti-alias Off


Anti-alias On

System Section



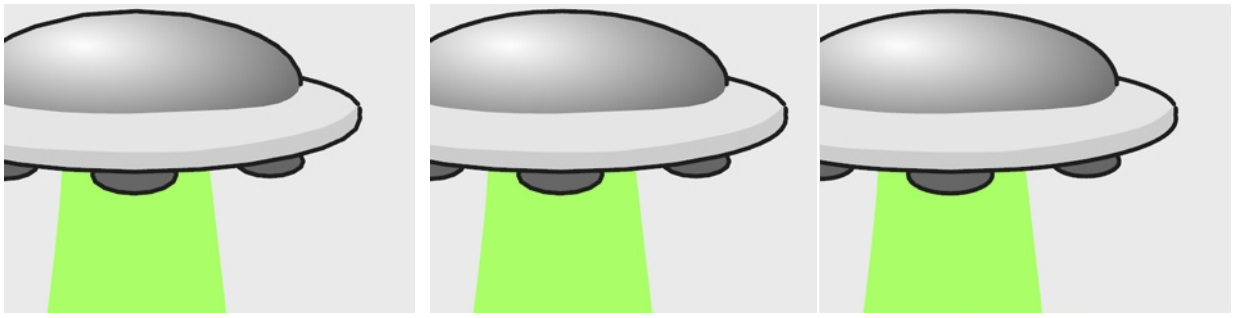
Scene Undo

Set the **Scene Undo** to decide how many actions you can **Undo**/**Redo**. The maximum is 99. A higher value requires more resources of your system.

Render

This setting decides the resolution rendered in the working area. If you encounter a blurry result, especially with image-based items, then try to increase the value of this setting to render the working area in higher resolution.

- **Real-time Vector Render Quality**: This drop-down list determines the edge smoothness of the vector-based objects rendered in the working area. It mainly influences the curves of the objects. Please note that this setting does not affect the export resolution.



Low **Mid** **High**

Temporary Folder

The temp folder is a folder for temporary files created by CrazyTalk Animator during operation. You can define where temporary files are saved in the preferences settings.

- Click the **Open** button in the **Temp Folder** option and browse to a folder you wish to use as the temp folder.
- Make sure the hard disk the temp folder is located in has sufficient free space, especially when you are using **CrazyTalk Animator** to produce high resolution videos.

Texture Editor

You can select an **external** application for use as a texture editor with **CrazyTalk Animator**. Textures edited using the "Launch" feature of the **CrazyTalk Animator** material editor will open with the image editor selected in this section. (e.g. Adobe Photoshop)

- Click the **Open** button in the **Texture Editor** option and browse to the executable file of a suitable texture editor application.

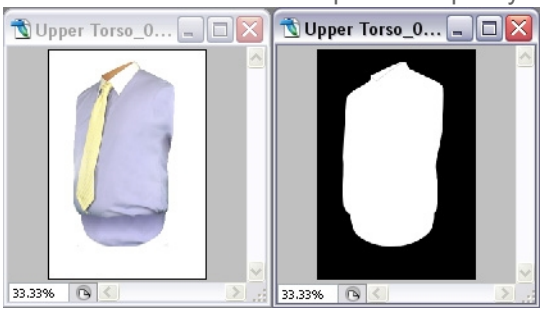
Texture Launch Settings

When you click the **Launch External Image Editor** button in the composer to edit the image-based elements in a sprite, you are allowed to decide the way the image is opened in the external editor.

- **PNG with Alpha**: Choose this radio button to open the image as single PNG file with transparent background (alpha channel).



- **PNG**: Choose this radio button to open the image as two PNG files. One is the original image and the other is a black-and-white PNG that depicts the opacity status.



Motion Section

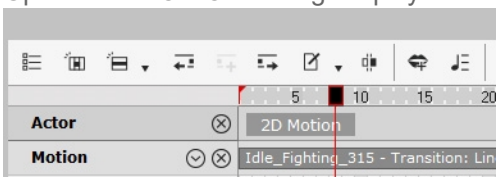
When modifying the motions applied to actors, you may decide whether to show the useful information dialog. You can turn it on or off by using the **Preference** panel.



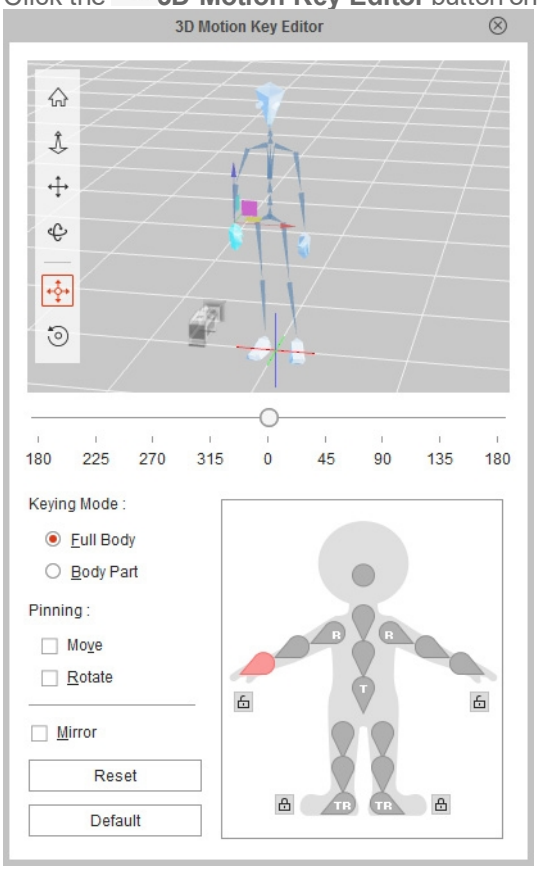
Show Information Dialog

When the **Allow edit 3D motion on a 2D motion clip** box is activated, a dialog prompts you that the current 2D motion clip will be cut out after your editing in the **3D Motion Key Editor**.

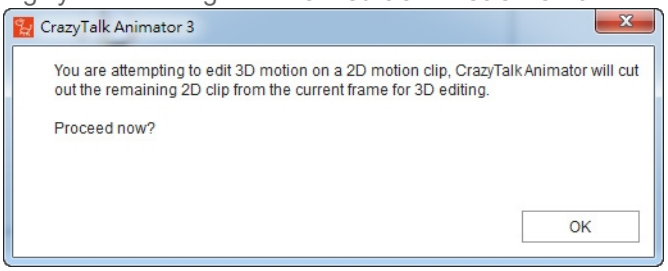
1. Apply a 2D motion clip to the actor.
2. Open the **Timeline** and drag the play head to the clip where you need to do 3D motion editing.



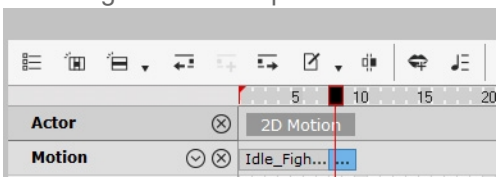
3. Click the **3D Motion Key Editor** button on the **Functional Tool Bar** to access the **3D Motion Key Editor**.



4. A dialog shows by default, to remind you that the remaining 2D motion clip will be cut out. You may hide this dialog by deactivating the **Allow edit 3D motion on a 2D motion clip** box in the **Preference** panel.



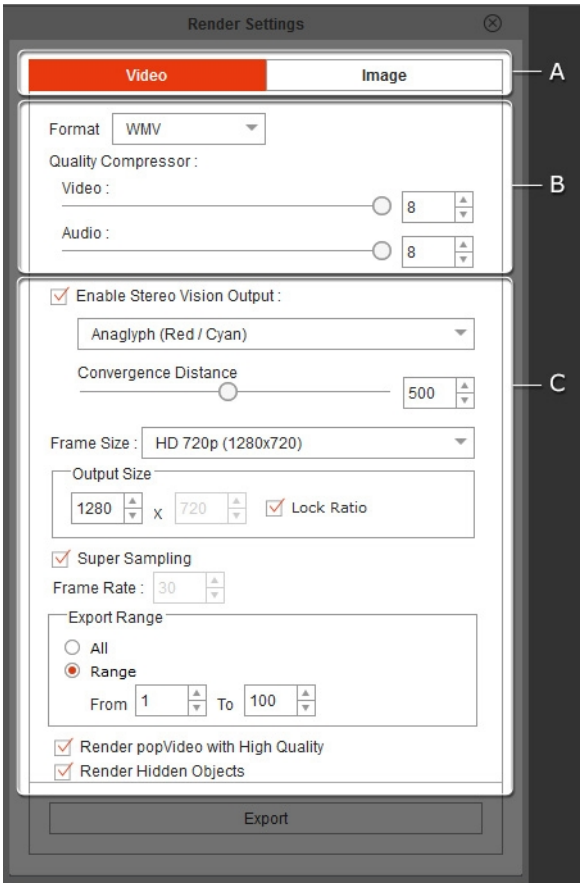
5. In order to keep the 3D Motion data, a **one-frame** 3D motion clip in blue will be generated that overrides the remaining 2D motion clip.



Exporting

CrazyTalk Animator now offers the convenient feature of exporting your project into multimedia formats that are compatible with a wide range of devices. For instance, you can now convert your work to an **AVI** file with **DVD** and **HD** quality. You can also convert it into sequenced image (BMP/JPG/TGA/PNG) files to broadcast on a web server.

Click the **Export** button on the **Project Tool Bar** to access the **Export Settings** panel.



A. Media Types

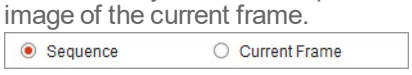
Mode Tabs

- **Video**: Output Flash Video/PopVideo/Wave Files.
- **Image**: Output Sequenced Images.

B. Format and Quality

In this section, you may choose the image, video and audio quality output.

- Utilize the **Format** drop-down list to decide the format of the exported media.
- Drag the **Video** and/or **Audio** sliders to set the quality of the exported media.
- Determine if you want to export the entire project or just one image. You may press **F10** to preview the output image of the current frame.



Note:

PC:

- By default, the export format is **WMV**; however if you want to further edit the exported video with an external video editor, then please choose **AVI** RAW data for lossless post production; this maintains color fidelity for high quality production.
- For more information about **PopVideo**, please refer to the popVideo Converter Online Help.
- If you wish to export as a **popVideo** with transparent background, then please remember to set the background as a solid color.

- If you want to export into a WMV file format, then you will need to first download and install the WMVEncoder9 from the Microsoft website.

Mac:

- The supported video formats are **MOV** and **WAV**.

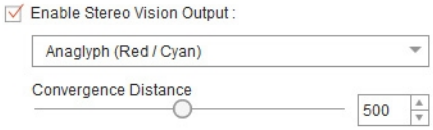
C. General Settings

In this section you may set projects as 3D media and set other general settings.

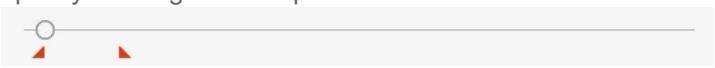
- **3D Output**: Please refer to the Creating a 3D Stereo Project section for more information.
- **General Settings**: Please refer to the General Output Settings section for more information.

General Output Settings

The general output settings for **Video** and **Image** are described in this section.



- Activate the **Enable Stereo Vision output** to export your project as a 3D stereo media.
  The supported formats:
  - Video: WMV, AVI, MP4 for PC.
  - Image: BMP, JPG.
  - Please refer to the Creating a 3D Stereo Project section for more information.
- If you are using a virtual **Microsoft** operating system on a **Mac** personal computer, then you may need to enable the **Super Sampling** box in order to rectify the aliasing issues in exported media. (Please note that the **Anti-alias** in the **Preference** panel shall be enabled as well.)
- Specify the resolution for the output frame by entering the height and width, in pixels, in the **Output Size** boxes.
- Choose the **Range** radio button if you only want to export a specific part of the project.
  You may also drag the **Mark in/Mark out** controls beneath the play bar (the red triangles in the illustrator below) to specify the range to be exported.



- Enter the desired frame rate, in frames per second, in the **Frame Rate** box.
- If you want to export an FLV file for using on a web page, then activate the **Produce HTML Page** box to preview the results of your project in a browser. You may copy the code and the flv files onto your web site.

Exporting PNG Image

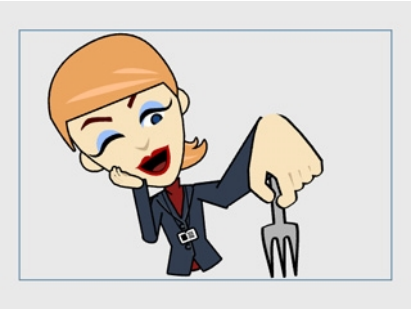
You can utilize the **Quick Capture to Clipboard** feature in order to quickly paste a scene from **CrazyTalk Animator** into external application software (such as **Microsoft PowerPoint** or **Apple Keynote**), instead of exporting via the normal method.

Your plain documents thus can be more interesting and appealing to the audience.

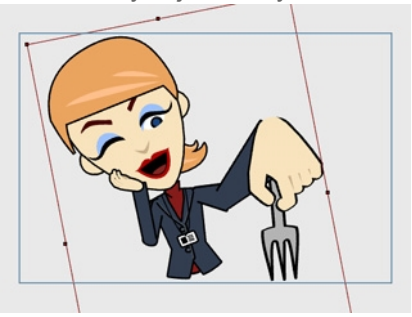
1. Create a simple document, in this case, a **Microsoft PowerPoint** file.



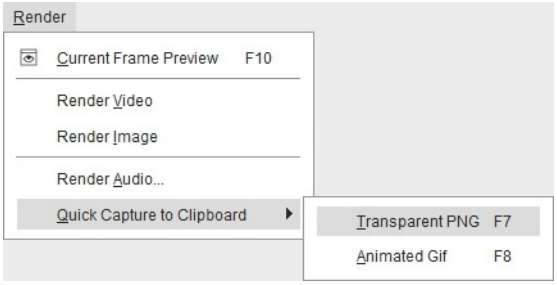
2. Open **CrazyTalk Animator** and create a scene.



3. Select every object that you want to quickly capture.



4. Execute **Render** >> **Quick Capture to Clipboard** >> **Transparent PNG**. (Shortcut: Windows - **F7**; Mac - **fn + F7**)

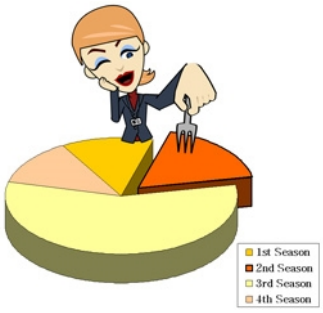


5. Switch to the target document of the external software.

6. Paste the data (**Ctrl + V**) in the system clipboard to the document.



7. Transform the pasted **PNG** to fit into the objects in the document.



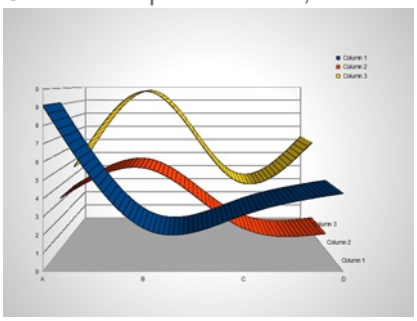
Possible Example:



Exporting Gif Animation

Not only can you quick capture still **PNG** files and paste them into external application software, but you can also directly import gif animations to give your documents a more attractive and unique look. You may also include multiple objects in a gif animation. Take Saul and his skateboard for example.

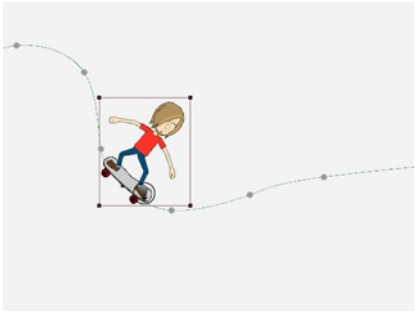
1. Create a simple document, in this case, the **Microsoft PowerPoint** file.



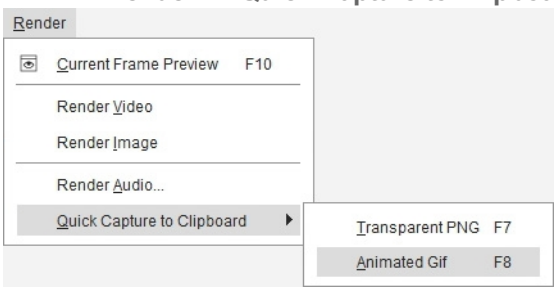
2. Open **CrazyTalk Animator** and create your own unique animation.



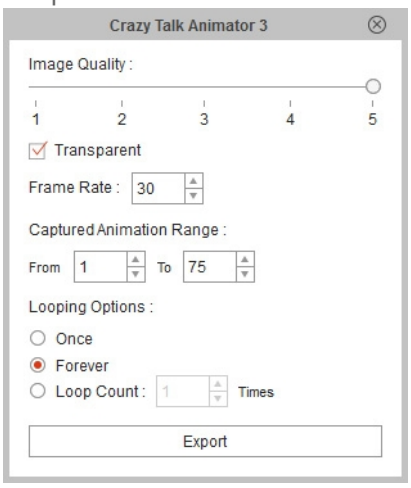
3. Select every object that you want to quickly capture.



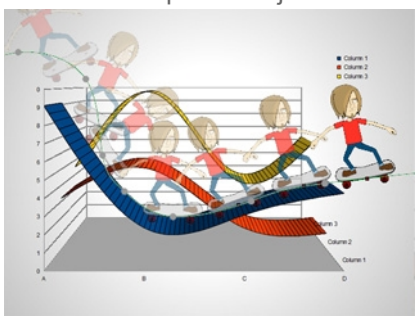
4. Execute **Render** >> **Quick Capture to Clipboard** >> **Animated Gif**. (Shortcut: Windows - **F8**; Mac - **fn + F8**)



5. Set the parameters in the panel and click the **Quick Capture** Export button at the bottom of this panel.



   - **Transparent**: If you want to export a **GIF Animation** with alpha channel information, then activate this box.
   - **Looping Options**: These three radio buttons determine the looping times of the **GIF Animation**.
6. Switch to the target document of the external software.
7. Paste the data (**Ctrl + V**) in the system clipboard to the document.
8. Transform the pasted object to fit suitably into your document.



Note:

- Once you click the **Quick Capture** Export button, the captured **GIF Animation** will be stored in the clipboard on a Windows computer, and you can directly paste it to a target application, such as **Microsoft PowerPoint**.
- For a Mac user, after you click the **Quick Capture**, the captured **GIF Animation** will get saved on the Desktop. Instead of using copy-and-paste, you will need to drag the captured animation into a target application, such as **Apple Keynote** (version 6.2 or later for this feature), for correct animation results.

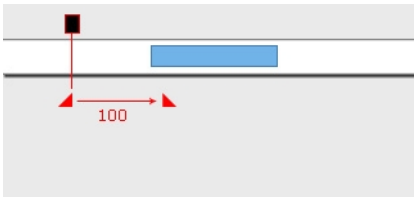
Length, Quality, Resolution and Backgrounds

Length Regulations for Gif Animation

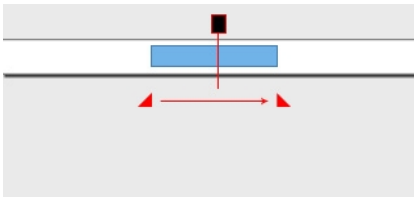
When you want to quick-export GIF animations, you are allowed to select single or multiple objects. Check out the following illustrations:

*Please note that the length is determined by the mark-in/mark-out flags that are **auto-placed** according to the **Objects being Selected**, the **Motion or Animation Clips** of them and the **Play Head Position**.

- **Single object (with motion or animation) selected**:



If no clip spans the play head, then 100 frames starting from the play head will be exported.



If a clip spans the play head, then the export range automatically changes to the same length as the clip.

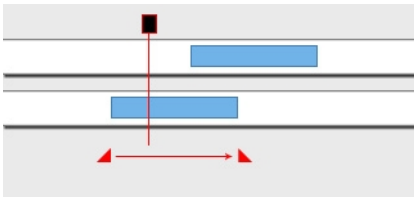


If no clip spans the play head, then 100 frames starting from the current frame will be exported.

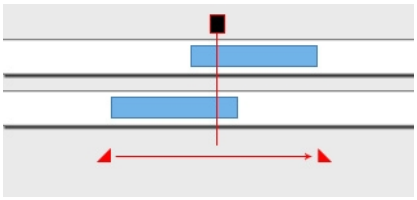
- **Multiple objects (with motion or animation) selected**:



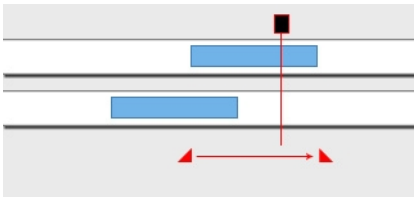
If no clips span the play head, then 100 frames starting from the current frame will be exported.



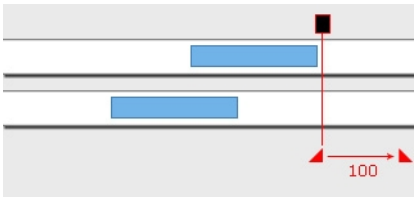
If only one clip spans the play head, then the export range automatically changes to the same length as the clip.



If multiple clips span the play head, then the export range automatically changes to accommodate the length of both clips combined.



If only one clip spans the play head, then the export range automatically changes to the same length as that clip.



If no clips span the play head, then 100 frames starting from the current frame will be exported.

- Please note that the quick-export range is automatically determined, however you are able to drag the mark-in/mark-out flags to manually change the length.

Controlling Animated GIF Quality and Size

The smoothness of the captured animation is defined by **Frame Rate**, and the default setting is 15fps. As an example, a 4 second 15fps 500x700 Animated GIF with higher render quality might produce a file around 1MB in size, so be aware of your frame-rate and resolution settings in order to maintain a balance of optimized performance, visual quality, and data size for your application.

The Resolution of GIF Animations

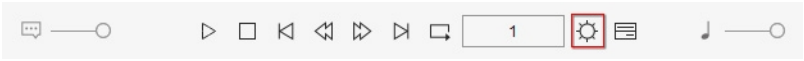
The captured **GIF Animation** result is exactly the same as the current object display size (pixel) in **CrazyTalk Animator** in order to speed up the capture process. This being the case, you can scale up/down the desired objects on the screen in order to get a higher or lower resolution for your animated GIF. For example, if you are working with a high-resolution display mode (something like a MacBook Pro 15" model has a 2880x1800 retina display), you will get a very high GIF resolution output when using the capture feature.

Note:

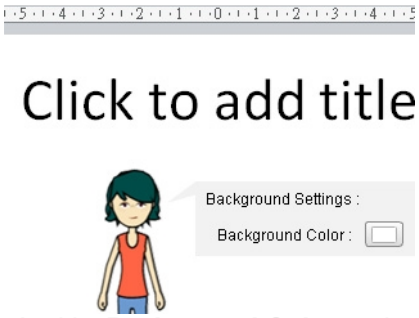
If you wish to define an absolute output size, please export to media formats instead.

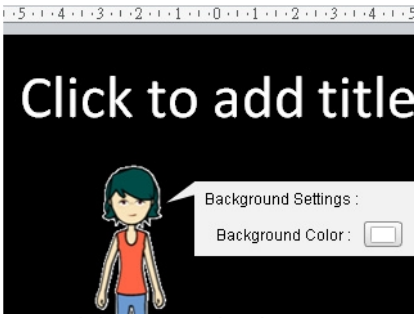
Transparent GIFs - Optimized for different Background Colors

If you choose to render a transparent animated GIF file with alpha channel information, when exporting the animation data, **CrazyTalk Animator** will use the project background color for calculation of edge anti-aliasing. Therefore, make sure the project background color matches your target background to get the best edge quality. Before capturing your animation clip, click the **Project Settings** button on the play bar to select a suitable **Background Color** in order to export an animated GIF that will best adapt to your background color.

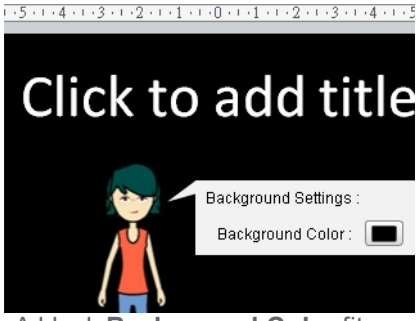


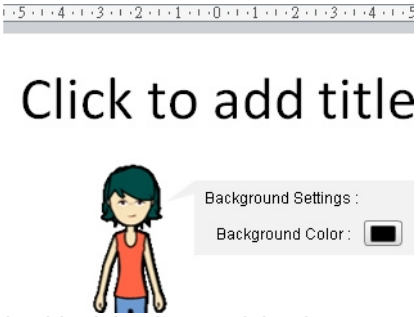
The background color of the project is white by default, and it may not fit in well with various situations. For example, a white background color will produce great results on a document with a white background, but may produce some artifacts along the edge of a black document, and vice versa.





A white **Background Color** works fine on a white background document, but it may present an unwanted white outline on a black one.





A black **Background Color** fits well on a document with a black background, but it may produce a thicker edge on a document with white background.

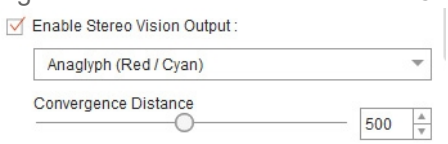
Possible Example:



Creating 3D Stereo Projects in CrazyTalk Animator

If you want to output a 3D stereo media, then please follow the steps below:

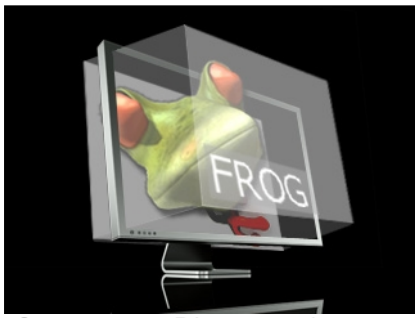
1. Open the **Export Settings** panel.
2. Enable the **3D Stereo Vision** box. Choose the **Anaglyph (Red/Cyan)** or **Side by Side** radio button.
3. Drag the slider to define the value for **Convergence Distance**.



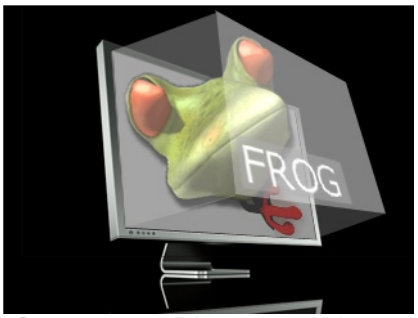
Convergence Distance

The **Convergence Distance** value decides the convergence distance as you playback the output media. The higher the value, the closer the objects tend to pop-out in relation to the convergence point. The lower the value, the farther the objects move to the back of the convergence point.

In the illustrations below, the **CrazyTalk Animator** project is taken as a box with the character and comic effects integrated.



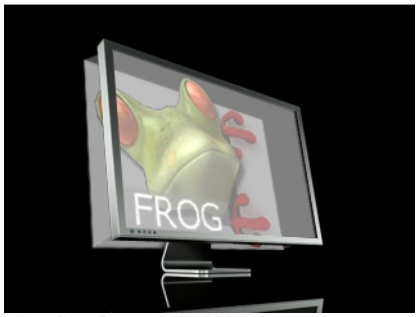
Convergence Distance = 0



Convergence Distance = 100

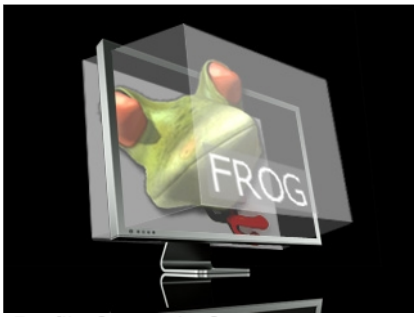
Profile and Convergence Distance

Take note that the profile of the character may affect the depth value of the whole 3D stereo project. For more information, please refer to the Specifying Face Orientation and Style.



Profile Strength: Weak

(Convergence Distance = 0)



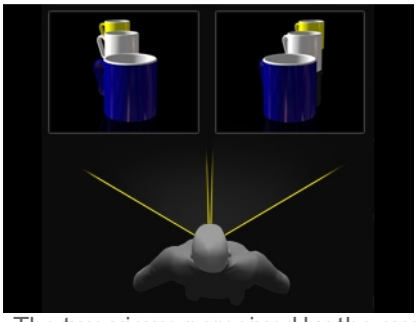
Profile Strength: Strong

(Convergence Distance = 0)

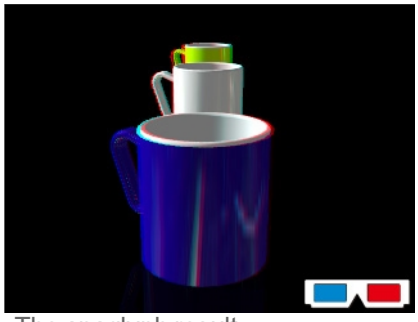
The Concepts of 3D Stereo Vision

How is a 3D Stereo Sensation Generated?

Stereo vision is generated by two perceived views in our brains. Our brain combines the similarity of the two views, while the small differences between them lead our mind to sense the depth of space. As a result, these two views turn out to be a single three dimensional stereo picture.



The two views perceived by the eyes

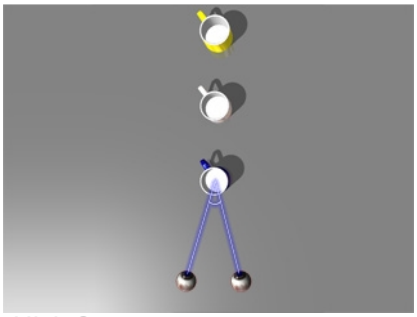


The anaglyph result

There are two primary factors to generating a 3D stereo vision; **Convergence** and **Parallax**.

Convergence

The convergence is the angle formed by our eyes and the observed object. The higher the angle value is, the nearer the observed object is to our two eyes, and vice versa.



High Convergence
(Target object is near)

Therefore, when the convergence is fixed, any object between you and the convergence point will be closer to you, while the object beyond the convergence point will be farther away from you.

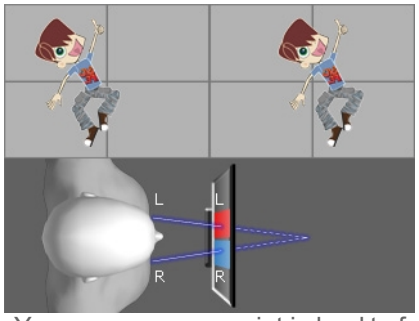
Please note that if the **Convergence** is higher then 6 degrees, which means the object is too close to you, then your eyes will feel uneasy. On the contrary, when the value is too small, which means the object is too far, the stereo sensation will be lost.

Parallax

The parallax images are the images passing through to your left and right eyes. All 3D stereo media contain a pair of parallax images that individually, and simultaneously, pass to your left and right eyes. This is to convince your brain that there is an existence of depth.

Positive Parallax

When the target object offsets to the right in the left image, and offsets to the left in the right image, then your binocular focus is lead to fall behind the display. This phenomena is called **Positive Parallax**.



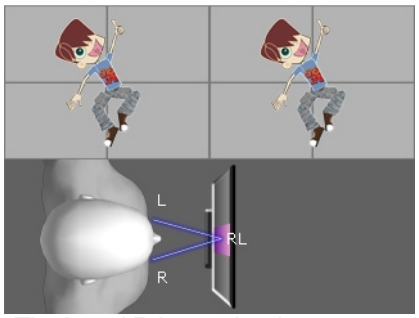
Your convergence point is lead to fall behind the display.



Positive Parallax

Zero Parallax

When the paired parallax images superimpose on the display, then your binocular focus is lead to fall on the same display, which is the **Zero Parallax**.



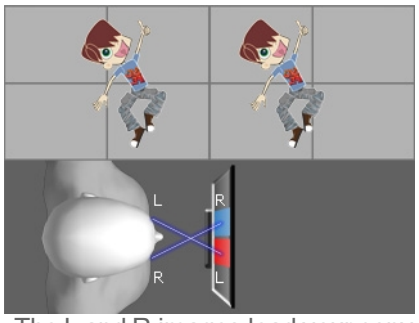
The L and R image lead your convergence point to fall on the display.



Zero Parallax

Negative Parallax

When the target object offsets to the left in the left image, and offsets to the right in the right image, then your binocular focus is lead to fall in front of the display. This phenomena is call **Negative Parallax**.



The L and R images lead your convergence point to fall in front of the display.



Negative Parallax

Environment for Viewing 3D Stereo Media

After exporting your 3D stereo content, you may need some specific viewing devices.

	No 3D Device Required	3D Device Required	
	Anaglyph (Red/Cyan)	**Polarization**	**Shutter**
Stereo Format	Anaglyph	Side by Side	Side by Side
Player	Any General Video Player	3D Player (Usually Bundled with 3D Displays)	3D Player (Usually Bundled with 3D Displays)
		Free	**Free**
		Stereo Movie Maker	Stereo Movie Maker
		Stereo Movie Player	Stereo Movie Player
		Paid	nVidia 3D Vision Player
		DDD Player	**Paid**
		Stereoscopic	DDD Player
			Stereoscopic
Glasses	Red/Cyan Glasses	Polarization Glasses	Shutter Glasses
	3D Passive Glasses List	3D Passive Glasses List	3D Active Shutter Glasses List
Display	General Display	3D Display (Polarization)	3D Display (Shutter)
Graphic Card	General Graphic Card	General Graphic Card	3D Graphic Card (nVidia 9600 or above)
			NVidia Total Solution

For more information on available 3D products, please refer to the Available 3D Products page.

Also visit our web site: Additional Video Demos and How-to Documents .

Viewing Methods for 3D Stereo Media

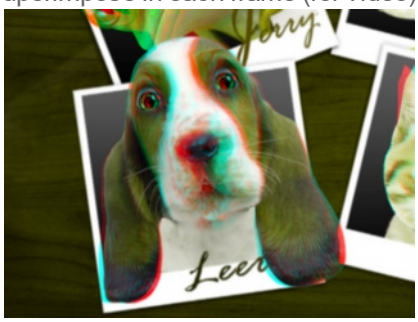
Viewing with Any Device
Viewing with Specific External Devices
Viewing with Bare Eyes
Viewing on YouTube

Viewing with Any Device

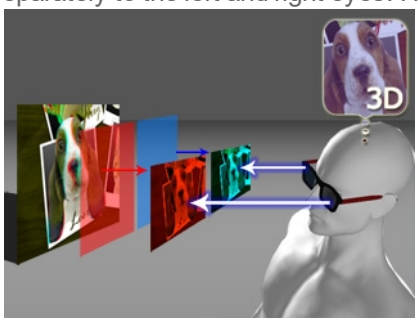
If you would like to view your 3D Stereo image or video with any common device, then you may export the media in **Anaglyph** format. The only equipment needed is a pair of **Red-Cyan** glasses.

Anaglyph (Red/Cyan) Method

This method employs anaglyph media and anaglyph filters. Anaglyph media can be videos or images made of two color layers. These two layers, containing differently filtered colored images for left and right eyes (as described above), superimpose in each frame (for video) or image.



In order to produce the sensation of depth, you must use two identical color filters (**Red-Cyan** glasses) to pass images separately to the left and right eyes. However, this method can result in color-loss issues due to the colored filters.

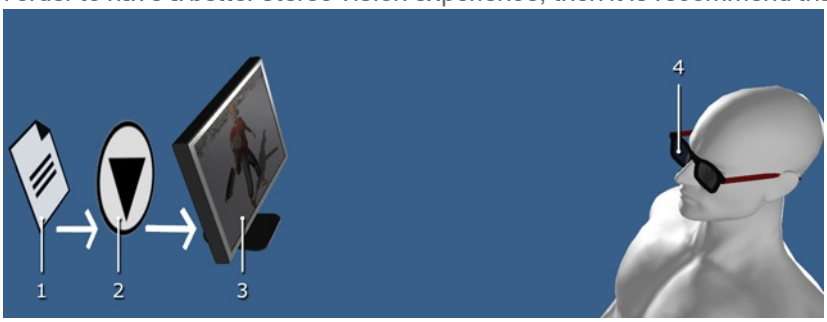


Viewing with Specific External Devices

If you would like to view your 3D stereo media without any color loss present in the anaglyph solution, then you may choose to export your media in **Side by Side** format. This method however, requires specific playback devices for viewing.

Side by Side Method

In order to have a better stereo vision experience, then it is recommend that users employ the following prerequisites:



1. Side by side media (exported from **CrazyTalk**).
2. Specialized player (for creating alternating-frame sequencing or superimposed video).
3. Specialized display.
4. Filtering devices (for separately filtering images to the left and right eyes).

The interval time to playback the left and right images are rather short. The human brain takes the paired images and synchronizes them together in order to generate the feeling of depth.

For more details about players, displays and filter devices, please refer to the Environment for Viewing 3D Stereo Media section.

Viewing with Bare Eyes

Side by Side Method - Without Equipment

This method utilizes media that consists of a pair of side-by-side offset frames (for video) or images. You do not need any special device to view this type of media, you only need to adjust the focus of your binocular vision so that the images from both sides overlap with each other.

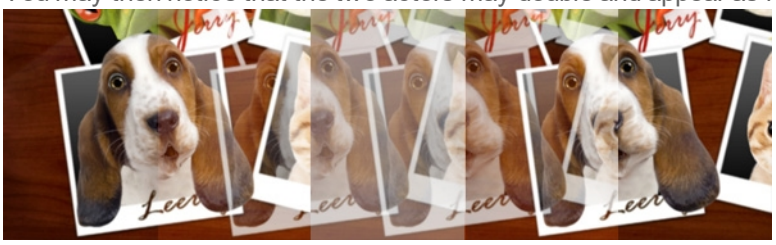


In order to overlap the paired frames or images, and sense the depth of the media, you may employ your bare eyes with the **Parallel Viewing** technique.

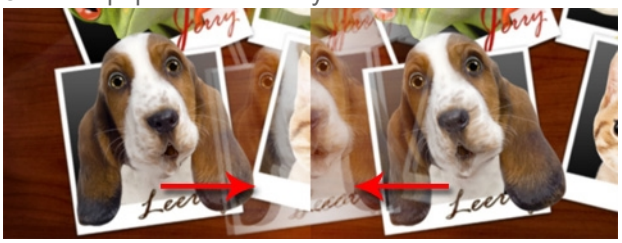
Parallel Viewing Method

You may need to practice in order to learn how to use this viewing technique:

1. Look at any far away object that is beyond your display device.
2. You may then notice that the two actors may double and appear as four.



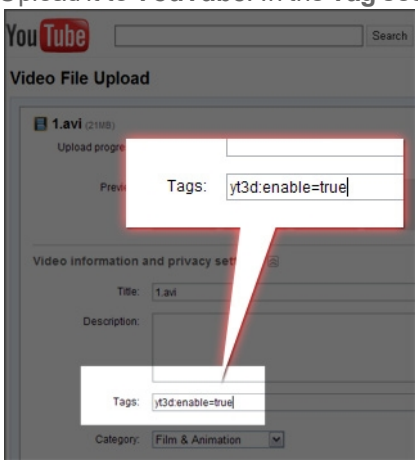
3. Then adjust your eyes so that the two actors, in the middle, overlap with each other. Eventually you will see the 3D actor pop-out in front of you.



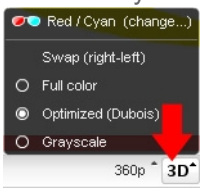
Uploading to YouTube

If your 3D stereo media is in **Anaglyph** format, then you may simply upload it to **YouTube** with any conventional method. If you would like to upload your 3D stereo media onto **YouTube** in **Side-by-Side** 3D format, then follow the steps below:

1. Prepare your 3D stereo media.
2. Upload it to **YouTube**. In the **Tag** section, type in "**yt3d:enable=true**".



3. Visitors may use **YouTube** as a 3D player by selecting the media type in the drop-down list.



Note:

Note:

- If the 3D result is not correct, then you may add "**yt3d:swap=true**"to fix the issue.
- If you choose any type other than the two-color methods in Step 3, then you must have specific display devices to perceive the correct 3D stereo effect.

Global Shortcuts

On-screen Display

Function	Shortcut (Windows)	Shortcut (Mac)
FPS Display	Ctrl + F	Command + F
Grid On/Off	Ctrl + G	Command + G
World Axis On/Off	Ctrl + A	Command + A
Show/Hide Content Manager	F4	F4
Show/Hide Scene Manager	F5	F5
Show/Hide Timeline	F3	F3
Show Project Settings	Ctrl + Shift + P	Command + Shift + P
Show Preference	Ctrl + P	Command + ,
Show Online Help	F1	F1
Show Pop-up Menu	Right-Mouse Button (Character, Prop, Special Effect, Text)	Right-Mouse Button or Ctrl + Mouse Button

Working Area - Quick Capture

Function	Shortcut (Windows)	Shortcut (Mac)
Transparent Png	F7	F7
Animated Gif	F8	F8
Transparent Mov	F9	F9

Working Area - Camera Manipulation

Function	Shortcut (Windows)	Shortcut (Mac)
Quick Camera Positioning	F - Frame Selected (Focus Object) Home - Default Camera Position	F - Frame Selected (Focus Object) Fn + Left Arrow Key - Default Camera Position
Camera Manipulation Switch	Z - Zoom X - Pan C - Roll	Z - Zoom X - Pan C - Roll
Manipulating Camera in Object Editing Mode	Move Camera - Alt + Left-Mouse Button Zoom Camera - Alt + Both-Mouse Button or Mouse Wheel	Move Camera - Option + Mouse Click Zoom Camera - Option + Both-Mouse Button
Roll X-Z	Right-mouse button (3D View Only)	Ctrl + Mouse Click (3D View Only)
Zoom in/out	Mouse wheel	Mouse Scroll Up/Down
Zoom in/out	Right + Left-mouse buttons	Option + Both Mouse Buttons
Toggle Orthographic/Perspective Camera	O	O

Tips - Speed movement:

Holding the **Shift** key while rolling the mouse wheel will increase the zooming speed by 10x.

Working Area

Function	Shortcut (Windows)	Shortcut (Mac)
Undo	Ctrl + Z	Command + Z
Redo	Ctrl + Y	Command + Shift + Z
Play / Pause	Spacebar	Spacebar
Duplicate Items	Ctrl + Drag Item	Command + Drag Item
Delete Object	Delete	Delete
Show Actor 3D Motion Settings	Select Character + Ctrl + Shift + O	Select Character + Command + Shift + O
Show Runtime Composer	Select Character/Prop + Ctrl + R	Select Character/Prop + Command + R
Show Render Style	Select Character/Prop + R	Select Character/Prop + R
Show 3D Motion Key Editor	Select Character + M	Select Character + M
Show Action Menu	Select Character/Prop + A	Select Character/Prop + A
Show Sprite Editor	Select Character/Prop/SFX + S	Select Character/Prop/SFX + S
Show Puppet Editor	Select Character + U	Select Character + U
Show Face Puppet Editor	Select Character + Ctrl + U	Select Character + Command + U
Show 2D Motion Key Editor	Select Character/Prop + K	Select Character/Prop + K
Show Face Motion Key Editor	Select Character + Ctrl + K	Select Character + Command + K
Show Prop Key Editor	Select Prop + K	Select Prop + K
Show Layer Editor	Select Character + L	Select Character + L
Show Lips Editor	Select Character + J	Select Character + J
Show Text Editor	Select Text + T	Select Text + T
Preview Rendering Result (Current Frame)	F10	Command + F10
Full screen mode	F11	Command + F11
Full screen mode without safe area	F12	Command + F12
Fix SWF Broken Issues	Ctrl + L	Command + L
Import Model	Ctrl + M	command + Shift + M
Import Animation	Ctrl + I	Command + I
Exit	Ctrl + Q	Command + Q

Item Transform

Function	Shortcut (Windows)	Shortcut (Mac)
Move along X Axis	Left/Right Arrow Keys	Left/Right Arrow Keys
Move along Y Axis	Up/Down Arrow Keys	Up/Down Arrow Keys
Move Along Z Axis	Ctrl + Up/Down Arrow Keys	Command + Up/Down Arrow Keys
Rotate by Z Axis	Ctrl + Left/Right Arrow Keys	Command + Left/Right Arrow Keys
Vertical, horizontal and diagonal move	Shift + Drag	Shift + Drag

File

Function	Shortcut (Windows)	Shortcut (Mac)
Open Project	Ctrl + O	Command + O
New Project	Ctrl + N	Command + N
Save Project	Ctrl + S	Command + S
Save As Project	Ctrl + Shift + S	Command + Shift + S

Snap

Function	Shortcut (Windows)	Shortcut (Mac)
Toggle Angle Snap On/Off	Ctrl + E	Command + E
Toggle Snap to Grid On/Off	Ctrl + W	Command + Shift + W

Content Manager

Function	Shortcut (Windows)	Shortcut (Mac)
Switch View Mode	Ctrl + 1	Command + 1

Timeline Shortcuts

Timeline Function	Shortcut (Windows)	Shortcut (Mac)
Copy Keys or Clips	Ctrl + C	Command + C
Cut Keys or Clips	Ctrl + X	Command + X
Paste Keys or Clips	Ctrl + V	Command + V
Delete Keys or Clips	Delete	Delete
Go to Start Frame	Home	Fn + Left Arrow Key
Go to End Frame	End	Fn + Right Arrow Key
Go to Previous Frame	Left Arrow Key	Left Arrow Key
Go to Next Frame	Right Arrow Key	Right Arrow Key
Jump to Next Key or Clip	Tab	Tab
Jump to previous Key or Clip	Shift + Tab	Shift + Tab
Zoom in the Timeline	+	+
Zoom out the Timeline	-	-
Add key Frame	V	V
Break Motion Clip	Ctrl + B	Command + B
Actor Angle Key	] (45 degrees rightward)	] (45 degrees rightward)
Actor Angle Key	[(45 degrees leftward)	[(45 degrees leftward)

Shortcuts in Editors

Stage Mode

3D Motion Key Editor

Function	Shortcut (Windows)	Shortcut (Mac)
Angle	] (45 degrees rightward)	] (45 degrees rightward)
	[(45 degrees leftward)	[(45 degrees leftward)
Move	W	W
Rotate	E	E

Runtime Composer

Function	Shortcut (Windows)	Shortcut (Mac)
Show/Hide Bone	B	B

Layer Editor

Function	Shortcut (Windows)	Shortcut (Mac)
Multiple Select/Deselect Sprites (Including Child Sprites)	Ctrl + Shift + Select Sprite	Command + Shift + Select Sprite
Multiple Select/Deselect Sprites	Ctrl + Select Sprite	Command + Select Sprite

Puppet Editor

Function	Shortcut (Windows)	Shortcut (Mac)
Preview Start/Stop	Spacebar	Spacebar
Record Start	Ctrl + Enter	Command + Enter

Composer Mode

Working Area

Function	Shortcut (Windows)	Shortcut (Mac)
Undo	Ctrl + Z	Command + Z
Redo	Ctrl + Y	Command + Shift + Z
Show Validate Multi-Angle Setup	Select Sprite + M	Select Sprite + M
Show Actor Proportion	P	P
Show Render Style	R	R
Show Sprite Editor	Select Sprite + S	Select Sprite + S
Angle	] (45 degrees rightward)	] (45 degrees rightward)
	[(45 degrees leftward)	[(45 degrees leftward)
Show/Hide Bone	B	B
Mirror Selected Sprite	Ctrl + Shift + M	Command + Shift + M
Mirror to Actor Left	Ctrl + Left Arrow Key	Command + Left Arrow Key
Mirror to Actor Right	Ctrl + Right Arrow Key	Command + Right Arrow Key

Actor Proportion

Function	Shortcut (Windows)	Shortcut (Mac)
Focus on Specific Profile	Up/Down/Left/Right Arrow Keys	Up/Down/Left/Right Arrow Keys
Apply Profile to Current Actor	Enter	Enter

Vector Grouping Tool

Function	Shortcut (Windows)	Shortcut (Mac)
Focus on Desired Group Name (Group Name Selection Pane)	Up/Down Arrow Keys	Up/Down Arrow Keys
Focus on Desired Item (Style List Pane)	Up/Down Arrow Keys	Up/Down Arrow Keys

Validate Multi-angle Setup

Function	Shortcut (Windows)	Shortcut (Mac)
Preview/Stop Bone Rotation	Spacebar	Spacebar

Sprite Editor

Function	Shortcut (Windows)	Shortcut (Mac)
Preview/Stop Animated SWF (must click on the preview button first)	Spacebar	Spacebar
Add Full Angle	Ctrl + N	Command + N
Add Current Angle	Ctrl + Shift + N	Command + Shift + N
Replace Full Angle	Ctrl + R	Command + R

Replace Current Angle	Ctrl + Shift + R	Command + Shift + R
Copy to All Angles	Ctrl + O	Command + O
Copy to Current Angle	Ctrl + Shift + O	Command + Shift + O
Delete Current Sprite	Delete	Delete
Delete Full Angle	Ctrl + Delete	Command + Delete
Delete Current Angle	Ctrl + Shift + Delete	Command + Shift + Delete
Show/Hide Full Angle Setting Panel (Must focus on the Sprite Editor first)	T	T

Mask Editor

Function	**Shortcut (Windows)**	**Shortcut (Mac)**
Undo	Ctrl + Z	Command + Z
Redo	Ctrl + Y	Command + Shift + Z
Zoom in/out	Mouse wheel	Mouse Scroll
Zoom In	+	+
Zoom Out	-	-
Zoom Fit	*	*
Zoom Real Size	/	/
Brush Size	[to decrease] to increase	[to decrease] to increase
Switch Front/background Brush	B	B
Color Range	Mouse Click + Shift to increase Mouse Click + Alt to decrease	Mouse Click + Shift to increase Mouse Click + Option to decrease
Brush	B	B
Eraser	E	E
Blur	R	R

Face Fitting Related Steps

Function	**Shortcut (Windows)**	**Shortcut (Mac)**
Undo	Ctrl + Z	Command + Z
Redo	Ctrl + Y	Command + Shift + Z
Zoom In	+	+
Zoom Out	-	-
Zoom Fit	*	*
Zoom Real Size	/	/
Preview/Stop (for Face Orientation step only)	Spacebar	Spacebar

Eye Settings

Function	**Shortcut (Windows)**	**Shortcut (Mac)**
Preview/Stop	Spacebar	Spacebar
Left Eye	=	=
Right Eye	-	-
Check Eye	.	.

Miscellanea

Function	**Shortcut (Windows)**	**Shortcut (Mac)**
Fix SWF Broken Issues	Ctrl + L	Command + L
Import Model	Ctrl + M	Command + Shift + M