



USERS MANUAL

ANIME STUDIO®

Create Your Own Cartoons and Animations

DEBUT | 10

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Welcome



*This manual includes embedded video files that help demonstrate features that are more easily explained in video format. If you receive a warning about Acrobat not being able to connect to a flashserver while trying to play the file, please refer to **"Using the Embedded Media Files" on page 1** in your **Anime Studio Tutorial Manual** for instructions on how to disable the warning.*

Chapter 1: Introduction Demo Limitations

Anime Studio is a complete animation system for creating 2D anime and cartoons. This document is the user's manual, containing useful information to get you started, as well as a detailed reference to all of Anime Studio's features.

If you're just getting started using Anime Studio, the best place to begin is with the quick start tutorials, which appear in **"Quick Start" on page 3 in your Anime Studio Tutorial Manual**. Choose **Help > Tutorials** to open the manual in PDF format. This section will give you a quick overview of how Anime Studio works, and what you can do with it. Even if you've used Anime Studio in the past, you might want to give the tutorials a quick read to see what's changed in this version.

If you've been using Anime Studio for a while now, and you want more information on some specific feature or interface element, choose the section that interests you from the table of contents.

Finally, if you're having a problem that just isn't answered in this document, please see **"Appendix B: Technical Support" on page 295**. We want to do everything we can to make using Anime Studio a fun and productive experience.

Chapter 1: Introduction

If you haven't purchased a copy of Anime Studio, then the program will be running in demo mode. While in demo mode, Anime Studio still allows you access to all features of the program. Anything you can do in the full version you can do in the demo. Also, any files you create with the demo version of Anime Studio will still work fine if you purchase the full version.

The demo version has just three limitations: First, you can only run the demo version of Anime Studio for 30 days. Second, you cannot import any external file formats including images and movies. Third, you cannot export your animations to other formats (QuickTime, AVI, Flash, etc.).

To purchase Anime Studio, go to <http://store.smithmicro.com/>.

New Features in Anime Studio 10

Major New Features

- **Transform Bones Tool:** A single tool now allows you to translate, rotate, and scale bones. See ["Transform Bone"](#) on page 68 for more information.
- New Drawing Tools, include:
 - **Blob Brush Tool:** The new Blob Brush tool allows you to quickly and easily create vector shapes and outlines by painting on the screen. See ["Blob Brush"](#) on page 42 for more information.
 - **Eraser Tool:** Allows you to erase portions of a selected shape. See ["Eraser"](#) on page 44 for more information.
 - **Point Reduction Tool:** Allows you to reduce the number of points in a selected object by painting over the areas you want to optimize. See ["Point Reduction"](#) on page 45 for more information.
- **Transform Points Tool:** The Translate Points, Rotate Points, and Scale Points tools have been combined into a single tool. See ["Transform Points"](#) on page 29 for more information.
- **Freehand Tool:** Points are automatically hidden when you use the Freehand tool so that you can get a more accurate preview while you draw. See ["Freehand"](#) on page 36 for more information.
- **Multiple Document Support:** Anime Studio now allows you to open more than one document at a time, and switch from one to another in a tabbed interface. See ["Open..."](#) on page 231 and ["Show Document Tabs"](#) on page 273
- **Keyboard Shortcut Editor:** The [Help > Edit Keyboard Shortcuts](#) command allows you to create and save your own keyboard shortcut configurations. See ["Edit Keyboard Shortcuts"](#) on page 280 for more information.
- **Multiple Shape Selections:** The Select Shape tool now allows you to select multiple shapes so that you can change fill, stroke, or both simultaneously. Basic color controls have also been added in the options bar. See ["Select Shape"](#) on page 48 for more information.
- **Frame Zero and Sequencer:** Each layer now has its own "frame zero", allowing you to perform actions normally confined to frame zero when the start point of a layer has been moved to a negative frame value.

- **Hide Points and Bones** to reduce clutter in your document window, with the following commands:
 - The **Draw > Hide Selected Points** command hides selected points so that you do not accidentally select them while editing other nearby points. The objects associated with those points are still visible in the document window. See [“Hide Selected Points” on page 261 for more information.](#)
 - The **Draw > Show All Points** command unhides points that have previously been hidden. See [“Show All Points” on page 262 for more information.](#)
 - The **Bones > Hide Selected Bones** command allows you to hide selected bones to make it easier to focus on specific bones in your scene. See [“Hide Selected Bones” on page 265 for more information.](#)
 - The **Bones > Show All Bones** command unhides bones that have previously been hidden. See [“Show All Bones” on page 265 for more information.](#)
- **Paint Bucket Tool:** The Paint Bucket tool now allows you to fill closed shapes that are not welded. The fill is created as a separate object. See [“Paint Bucket” on page 54 for more information.](#)
- **GPU Acceleration** allows higher quality display of strokes and transparencies in images.
- **Multiple Layer Editing:** Select multiple layers, including layers of different types, and apply changes to multiple layers at the same time. See [“Editing Multiple Layers” on page 129 for more information.](#)
- **Variable Width Curves:** Line widths are now calculated based on percentage values. See [“Line Width” on page 59 for more information.](#)
- **Particle Layers:** Particle layers can now use arbitrary shapes to generate particles. See [“Particle Layers” on page 122](#) and [“Particles Tab” on page 221.](#)
- **Blur improvements and Threshold:** Any feature that uses blur (layer blurs, shadows, shading, various fill effects) now accepts floating point blur radius values. This allows for blurs that can be animated more accurately between keyframes. Threshold works in conjunction with blur. Thresholds can be applied to layers, shadows, and shading to produce smoother transitions in corners. You'll find new Threshold options in Layer Shadows, Layer Shading, and in some of the fill effects.



Blur and threshold options are found in the following sections: "Layer Shadow" on page 142; "Layer Shading" on page 142; "Shaded Fill Effects" on page 169; "Soft Edge Fill Effects" on page 170; "Shaded Fill Effects" on page 169; and "Drop Shadow" on page 173

- **Colorization of layers:** The new Colorize Layer feature allows you to overlay a color on a layer. See "Colorizing" on page 137.
- **Media Plugins/Export Animation:** More video formats are supported in Windows and Macintosh versions. See "Export Animation..." on page 240 for more information.
- **Content Library Updates:** The Library palette now uses the same color scheme that you specify in Preferences.
- **Preview image saved with project:** When saving documents, a preview thumbnail is saved with the project. See "Save" on page 231.
- **Automatic Update checking:** See "Automatic Update Checking" on page 11 for more information.

- **Activation, Serial, and License Management:** Anime Studio now prompts you to activate and serialize your software. See "Activating Anime Studio" on page 6

System Requirements

Windows:

- Windows® 7, 8, 8.1 or newer
- 1.3 GHz Pentium 4 or newer, Athlon 64 or newer
- 2 GB RAM recommended
- 700 MB free hard drive space minimum
- OpenGL enabled GPU recommended
- 1024x768 display (1280x800 recommended)
- DVD-ROM drive (physical version only)
- Internet connection for product activation recommended
- Windows® Internet Explorer® 9 or newer

Macintosh:

- Macintosh® OS X 10.8, 10.9 or newer
- 64-bit OS required
- 1.3 GHz Intel Processor or newer
- 2 GB RAM recommended
- 700 MB free hard drive space minimum
- 1024x768 display (1280x800 recommended)
- DVD-ROM drive (physical version only)
- Internet connection for product activation recommended



During installation, the Anime Studio installer checks to see if a previous installation of the same installer exists on your system. The installer will prompt you to uninstall the previous version before continuing (recommended).

Activating Anime Studio

After you install Anime Studio, you will be prompted to enter your serial number and activate your Anime Studio license. If the product has not yet been activated, will be prompted to activate your Anime Studio installation at launch time. If you do not activate your serial number, the product will deserialize.



After you enter your serial number, your license must be activated within seven days.



Activation requires an internet connection

A product that has not been activated will run in trial mode until the trial period expires. If the trial period has expired, you must activate it in order to use the product.

Getting Started

After you install Anime Studio, you might want to familiarize yourself with the many features contained in the program.

When you start Anime Studio, a splash screen presents the following options:

- **Introductory Tutorial:** Opens the Tutorial Manual, which you can also open using the **Help > Tutorial Manual** command from the Anime Studio menu.
- **Bonus Content Pack:** Opens your Web browser to the Content Paradise web site, specifically to the Anime Studio bonus content page. A Content Paradise account and valid Anime Studio serial number are required to add the free content to your shopping cart. You can also navigate to this page by choosing the **Help > Download Bonus Content Pack** command from the Anime Studio menu.
- **Register Your Product:** Opens your Web browser to the Smith Micro registration page, where you are prompted to enter registration information for your Smith Micro software products. You can also navigate to this page by choosing the **Help > Register Your Product** command from the Anime Studio menu.
- **ContentParadise.com:** Opens your Web browser to the Content Paradise home page, where you can order content for Anime Studio and other Smith Micro software products. You can also navigate to this page by choosing the **Help > Buy Content** command from the Anime Studio menu.
- **Don't Show This Again:** Choose this command to prevent the splash screen from opening each time you start Anime Studio.



ANIME STUDIO DEBUT | 10
 Create Your Own Cartoons and Animations

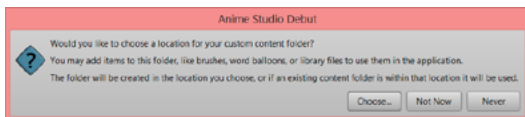
Version 10.0, Build 12014 (32-bit)

Splash Screen

Creating a Content Folder

When you first start Anime Studio, you will be asked if you want to create a folder to store your custom content.

After the content folder is created, a hierarchy of folders appears beneath it. Any content stored in these locations will appear in the “My ...” folders in the Library (such as “My Characters” in the Characters library and so on). This allows you to store user-created word balloons, brushes, and other custom items that you can use in Anime Studio. In addition, the support files for the Tutorial manual can also be found in the Custom Content folders.



Choosing a content folder.

The choices are as follows:

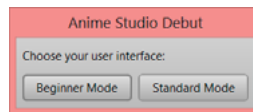
- Choose:** Select this option to browse to the folder that you want to use for your Anime Studio content. After you select/create the folder, choose OK.
- Not Now:** Choose this option if you want to set up the folder at a later time. You will be prompted with this dialog the next time you start Anime Studio.
- Never:** Choose this option if you do not want to set up a folder, and no longer want to receive this prompt when you start Anime Studio.



*If you choose to never show the dialog that prompts you to create a content folder, you can choose the **Help > Set Custom Content Folder** command at any time to specify a content folder location.*

Choosing Your Startup Mode

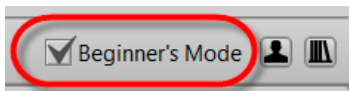
When you first start Anime Studio Debut, you are asked if you want to start in Standard Mode, or Beginner Mode.



Choosing your startup mode.

You can also switch to and from Beginner Mode by checking or unchecking the Beginner Mode option in the upper-right corner of the Anime Studio user interface. When you check that option, the tool box on the left side

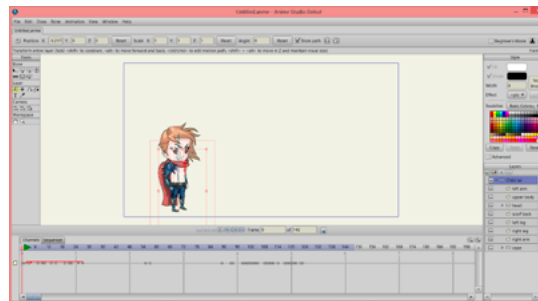
displays the most commonly used tools as shown in the next figure.



Beginner Mode option

Standard Mode

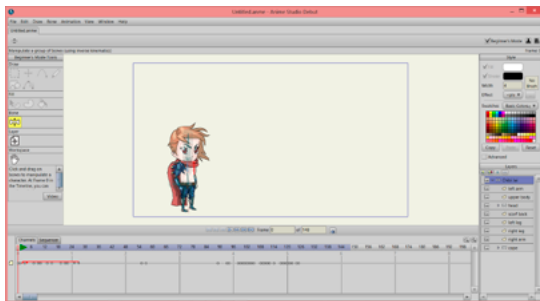
If you choose Standard mode, various tools appear in the tool bar at the left side of the interface. If the number of tools feels overwhelming to you as a new user of Anime Studio, you can configure Anime Studio to display the most commonly used tools, along with introductory videos that show you how to use them.



Standard UI

Beginner Mode

If you are new to Anime Studio, you may find that the beginner's interface will be a good place to start.

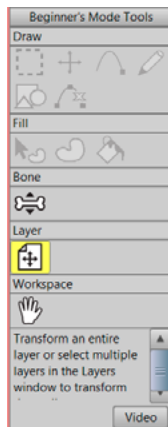


Beginner Mode UI

When in the Beginner Mode, the tool box displays the following:

- **Draw Tools:** Displays the **Select Points**, **Transform Points**, **Transform Points**, **Add Point**, **Freehand**, **Draw Shape** and **Delete Edge** tools. For more information on these tools, see "Chapter 3: The Draw Tools" on page 25.
- **Fill Tools:** Displays the **Select Shape**, **Create Shape**, and **Paint Bucket** tools, all discussed in "Chapter 4: Fill Tools" on page 48.
- **Bone Tool:** Displays the **Manipulate Bones** tool, discussed in "Chapter 5: Bone Tools" on page 65.
- **Layer Tools:** Displays the **Transform Layer** tool, discussed in "Chapter 7: Layer Tools" on page 87.
- **Workspace Tools:** Displays the **Pan** tool, discussed in "Chapter 9: Camera and Workspace Tools" on page 116.
- **Tool Tip:** As you hover the mouse over any tool, a Tool Tip displays the name of the tool, along with a keyboard shortcut that you can use to select the tool at any time.
- **Tool Help:** When a tool is selected, an extended description of the tool appears in the lower section of the tool box. The description also includes basic instructions on how to use the selected tool.
- **Video Button:** Click the **Video** button in the extended description area to watch a video that shows you how to use the selected tool.

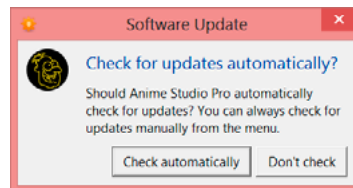
Chapter 1: Introduction



Beginner Mode Tools

Automatic Update Checking

The first time you start Anime Studio, you will be asked if you want to be notified of automatic updates. The dialog options are as follows:



Software Update dialog

- **Check Automatically:** Anime Studio will automatically check for software updates upon startup.
- **Don't Check:** Select this option if you do not want to be notified of updates. You can update Anime Studio at any time by choosing the **Help > Check for Updates** command.



You can change your update notification preference at any time in the Options tab of the Preferences dialog. See "Options Tab" on page 252 for more information.

Chapter 2: License

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Version: 20140129-AnimeStudio/AnimeStudio

Anime Studio Tools

Chapter 3: The Draw Tools

Draw tools are used to draw and modify vector artwork. The following tools are available when you're working with a vector layer. Most of these tools are used by selecting them from the toolbar then clicking and dragging in the working area of the main window - a few are used simply by clicking on them, and this is noted below. If you hold the mouse over a tool, a tooltip will appear with the name of the tool if you need a quick reminder. Also, most tools have a shortcut key that can be used to activate them. If a tool has such a shortcut, this will show up in the tooltip as well.

If a tool has the following symbol next to it: , then it can be used for animation - using the tool at different frames in the timeline will cause the object you adjust to change over time.

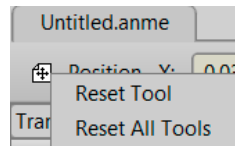


Anime Studio has a smart tool palette, which shows and hides tools based on their need.

The position of the tool shown in the screenshots may differ, depending on the selected layer in the Layers palette, and the current time in the timeline.

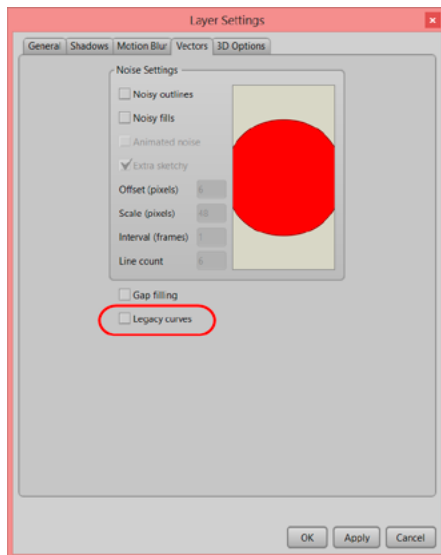


Click the tool icon in the properties bar to display a submenu. Choose **Reset Tool** to reset the current tool to its default settings. Choose **Reset All Tools** to reset all tools to their default settings.



Reset tool options.

When drawing with the draw tools, you can manually choose to use legacy curves (such as those used in Anime Studio 6 and earlier) in the **Layer Settings** dialog. Select the layer you want to change in the Layers window, and open the Layer Settings dialog to the Vectors tab. Check the **Legacy Curves** option to use the old method of rendering curves.



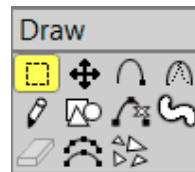
You can choose legacy curves for compatibility with older scenes created in Anime Studio 6 and earlier.



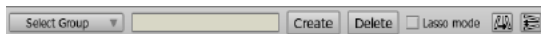
Normal curves (left) vs Legacy curves (right).

Select Points

Shortcut: G



Select Points



Select Points options

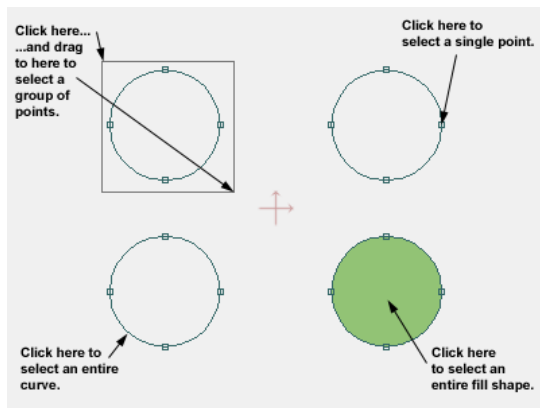
Select Points Tool Options

- **Select Group:** Used to select a group that was previously created with the Select Points tool.
- **Text Field:** Assigns a name to the currently selected group of points.
- **Create:** Creates a group from the selected points.
- **Delete:** Deletes the currently selected group from the selection list.
- **Lasso Mode:** When checked, allows you to draw a lasso around the points you want to select. When unchecked, selects a rectangular area.
- **Flip Horizontally:** Click this button to flip horizontally.
- **Flip Vertically:** Click this button to flip vertically.

Using the Select Points Tool

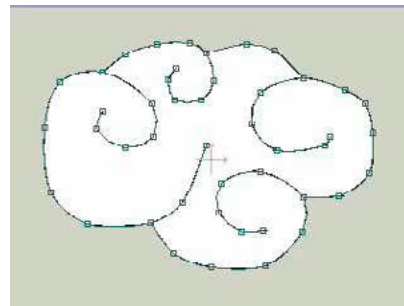
Many of the following tools work only on the currently selected points. This is the tool you use to select/de-select points. This tool can be used in a few different ways.

The most basic way to select points is to drag a rectangle around them. Also, using this tool you can click on a single point to select it. The third method of selection is to click on a curve to select the entire curve. Finally, clicking on a filled-in area will select an entire object. Each of these selection methods is illustrated below:



Selection methods

Below is a short movie clip showing the different ways to select points using the Select Points tool.



Different methods of point selection (SWF file)

Modifier keys:

By holding the **Shift** key, you can add to a selection. Otherwise, you will always start a new selection when using this tool.

- Holding the **Alt** key will prevent this tool from selecting curves or shapes when you click on them (sometimes when things get crowded it's hard not to click on a shape by accident).

- If you hold down the **Ctrl** key (Windows) or **Cmd** key (Mac), this tool will work in lasso style. (You can also activate lasso style selection by turning on **Lasso mode** in the tool options area.)

The selection commands in the Edit menu are also very useful for managing selections. These are described in ["Chapter 19: Edit Menu" on page 250](#).

The currently selected points may be deleted by pressing the **Delete** or **Backspace** keys.



Transform Points

Transform Points

Shortcut: T

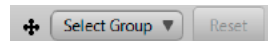


The Transform Points tool is used to move, scale, or rotate a group of selected points. It operates only on the currently selected points, unless fewer than two points are selected - then it operates on the nearest point to where you clicked.

It's important to note that this tool, like most of the Anime Studio drawing tools, modifies points, not curves. If you select all the points in an object and use this tool, the entire object will move, scale, or rotate. However, if you only select some of the points, then you'll end up distorting the object (which can be very useful).

General Options

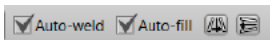
The following options appear in the left portion of the options toolbar when the Transform Points tool is selected:



Transform Tool general options

- **Select Group:** Used to select a group that was previously created with the Select Points tool.
- **Reset:** If pressed at Frame 0, resets a layer back to its default value. If pressed at any other frame, resets the layer to the value or values set at frame 0.

The following options appear in the right portion of the options toolbar when the Transform Points tool is selected:

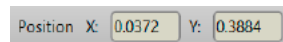


Transform Tool general options

- **Auto Weld:** When checked, automatically welds a new point to an existing point. The existing point is highlighted when the mouse hovers over a point that can be welded.
- **Auto Fill:** When checked, automatically fills a closed shape when you create it.
- **Flip Horizontally:** Click this button to flip horizontally.
- **Flip Vertically:** Click this button to flip vertically.

Translating Points

The following toolbar options are associated with translating points:

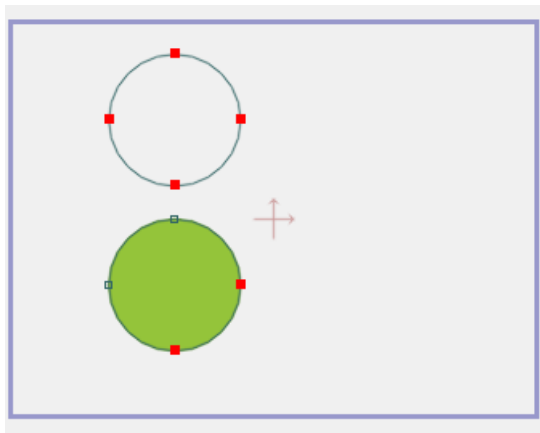


Transform Points options for translating

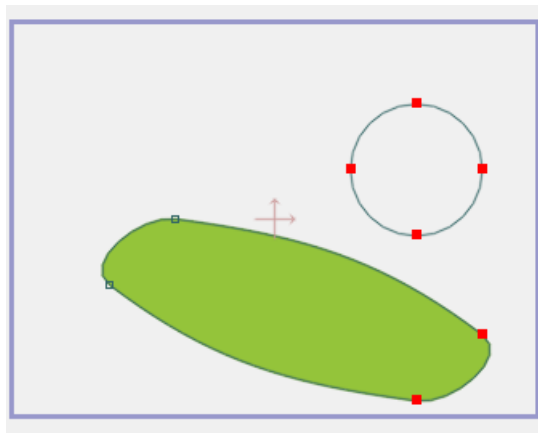
- **Position X:** Allows you to numerically enter a value for the X coordinate.
- **Position Y:** Allows you to numerically enter a value for the Y coordinate.

In the pictures below, the selected points are highlighted in red. Notice the effect of using the Transform Points tool on these points.

- **To constrain vertically or horizontally:** Hold the Shift key while dragging the selected points left, right, up, or down.
- **To nudge:** You can nudge the selected point(s) by small increments by holding down the **Ctrl** key (Windows) or **Cmd** key (Mac) and pressing the arrow keys. Hold down **Shift** in addition to **Ctrl/Cmd** to nudge the point(s) by a greater increment.



Top circle fully selected. Bottom circle partially selected

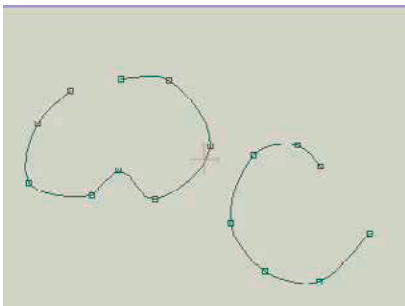


After translation

- **To weld points:** The steps differ depending on whether the Auto Weld option in the toolbar is enabled or disabled:
 - **When Auto Weld is off:** To weld two points together, use the Transform Points tool to drag one point on top of another (you must drag just one point to weld, not a group of points). While dragging the

first point on top of the second, press the spacebar to weld them together into one point.

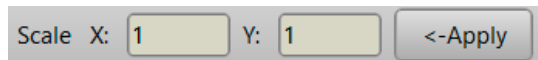
- **When Auto Weld is on:** Anime Studio can automatically weld points for you. Only the endpoint of a curve can be automatically welded. To automatically weld the endpoint of a curve, just drag it on top of another point and let go of the mouse. Below is a movie demonstrating auto-welding. After dragging each endpoint into place, it becomes welded to the existing point, and the two can be moved around



Using Transform Points and auto-weld (SWF file)

Scaling Points

The Transform Points tool also allows you to scale the currently selected group of points. Two or more points must be selected. The following toolbar options are associated with scaling points:



Transform Points options for scaling

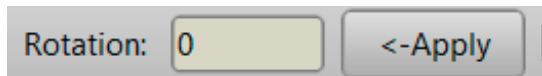
- **Scale X:** Allows you to enter a numeric value for scaling along the X axis.
- **Scale Y:** Allows you to enter a numeric value for scaling along the Y axis.
- **Apply:** Click to apply the values entered in the Scale X and Scale Y fields

When this tool is active, a red box will appear around the currently selected group of points. The handles around the edges of this box allow you to resize the points. Drag a corner handle in and out to scale the points while maintaining their proportions. Drag one of the side handles to change the horizontal scale, or the top or bottom handle to change the vertical scale.

If you hold the **Alt** key while dragging a side handle, Anime Studio will resize the selected points in such a way to maintain the overall volume of the object - this can be useful for squash and stretch.

Rotating Points

The Transform Points tool can also rotate the currently selected group of points. Two or more points must be selected to use this tool. The following toolbar options are associated with rotating the selected points:



Transform Points options for rotating.

- **Rotation:** Allows you to enter a numerical value for rotation.
- **Apply:** Click to apply the value entered in the Rotation field

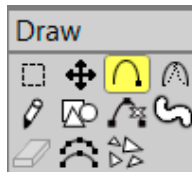
Click near the outer boundary of the selected group of points. Next, drag the mouse in a circle around the selection to rotate the points. Holding the **Shift** key while

using the Transform Points tool will constrain the rotation to 45 degree increments.

Add Point

Shortcut: **A**

The Add Point tool is what you use to draw most curves in Anime Studio. Just click and drag in the working area of the main window to create a new curve segment. There are four variations to using the Add Point tool - they differ in where the original click takes place.



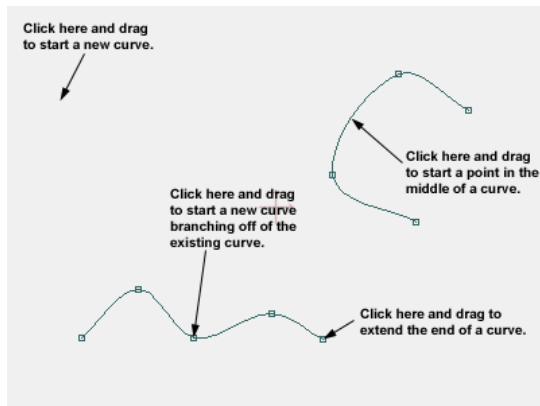
Add Point

The first way to use this tool is to click in empty space and drag - this will start a new curve.

The second technique is to click on the end of an existing curve to add another segment to that curve.

Third, click on a curve segment to add a point there, then drag it to the final desired position.

Finally, click on a curve midpoint to add a new branching curve that is welded to the existing point. Each of these uses of the Add Point tool is shown below.

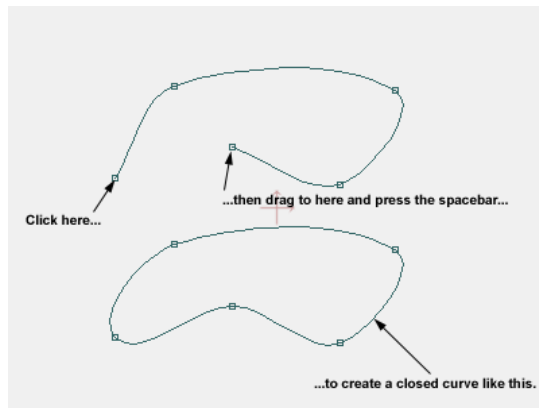


Uses of the Add Point tool

The Add Point tool can also be used to weld two points. Click and drag in one of the ways described above to add a new point.

Chapter 3: The Draw Tools

Drag the new point on top of an existing point. If Auto Weld is enabled the new point will weld to the existing point. If Auto Weld is off, press the spacebar before releasing the mouse. An example is shown below. (This works just like the Transform Points tool, above. Read about that tool for more details on welding.)



Closing a curve

To prevent the Add Point tool from adding on to an existing curve regardless of where you click, hold the **Alt** key to force the tool to start a new line segment.

The movie below demonstrates the Add Point tool. Notice how clicking on different parts of an existing curve causes the new point to be added in different ways.




Using the Add Point tool (SWF file)

Add Point Tool Options



Add Point Options

- **Select Group:** Used to select a group that was previously created with the Select Points tool.
- **Auto Weld:** When checked, automatically welds a new point to an existing point. The existing point is highlighted when the mouse hovers over a point that can be welded.
- **Auto Fill:** When checked, automatically fills a closed shape when you create it.
- **Sharp corners:** When checked, creates sharp corners when changing the angle of a line. When unchecked, creates smooth transitions when changing the angle.
-  If you hold down the Command key (Mac) or Ctrl key (Windows) while you add a new point, it will reverse the Sharp Corners option that you have selected in the Options toolbar. This allows you to change between peaked and smoothed points without interrupting your workflow.

Curvature

Shortcut: C



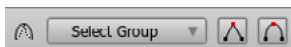
This tool works on the currently selected points, or on the nearest point if less than two points are selected.

It adjusts the level of smoothness of the curves passing through the selected points. Drag to the left to make the curves less smooth, and drag to the right to make the curves rounder.



Curvature

Curvature Tool Options



Curvature Options

- **Select Group:** Used to select a group that was previously created with the Select Points tool.

- **Peak:** Creates a peaked (or hard) transition between the curves at the point that you click.
- **Smooth:** Smooths the transition between the curves at the point that you click.

Freehand

Shortcut: F

The Freehand tool lets you draw complex shapes by just dragging the mouse around. After using the Freehand tool, you will often want to go back and use the Delete Edge tool to delete unwanted lines. You can also use the Transform Points tool to modify the result, delete unnecessary points, and weld points together. If you have a drawing tablet, the Freehand tool can also use the pen pressure from your tablet to control the thickness of the lines you draw.

The Freehand tool has been enhanced, such that you don't have to draw shapes precisely while using the tool. If you cross a line, the new line automatically welds to the line that is crossed if the Auto Weld option is selected. This allows you to quickly sketch out shapes without worrying about stopping your stroke at precise locations. Later, you can use the Delete Edge tool to remove the hanging

edges. For more information about the Delete Edge tool, see “Delete Edge” on page 41.

When you're using the Freehand tool, you are primarily interested in seeing an accurate display of what you are drawing. For this reason, control points are automatically hidden when Freehand tool is selected so that you can focus on your drawing. You'll also see a more accurate preview of the strokes that you draw, especially when drawing wider strokes. When you release the mouse, you'll notice the strokes change slightly due to automatic smoothing.



To display the control points, select one of the other tools, such as the Transform Points tool,



Freehand

Freehand Tool Options



Freehand Options



The Freehand tool has been improved to give much smoother looking curves. As you draw with the Freehand tool it looks like you are creating a lot of points, but as you let go it only keeps the points that are necessary to represent the curve smoothly.

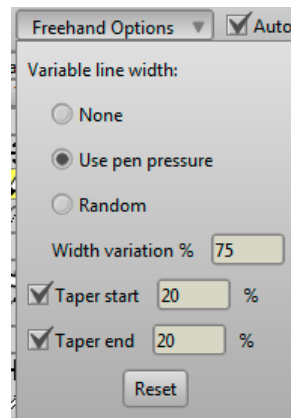


You don't have to be concerned with ending a line exactly on a point, or using the Transform Points tool to weld points together. Instead, sketch as you normally would sketch with a pencil. Any lines that cross will automatically weld together, easily allowing you to create closed shapes. You can then use the Delete Edge tool to delete the unwanted straggling ends that cross the lines you want to weld. This allows you to create closed shapes quite easily that you can fill later.

Click the Freehand Options button in the Options toolbar to display the Freehand Tool options dialog. The options are as follows:

- **Freehand Options:** Click this button to display the following options
 - **Variable line width:** When set to None, does not vary line width between the start and end of the line. You can also vary line width based on pen pressure when using a pen tablet, or randomly. The line width will vary between the minimum and maximum width settings that you specify.
 - **Width Variation:** Controls the amount of difference between the narrowest part of the stroke and the widest part of the stroke.
 - **Taper Start:** When checked, tapers the start of the line. Enter the starting width of the line in the field provided. The taper will be applied after you release the mouse.
 - **Taper End:** When checked, tapers the end of the line. Enter the ending width of the line in the field provided. The taper will be applied after you release the mouse.
 - **Reset:** If pressed at Frame 0, resets a layer back to its default value. If pressed at any other frame,

resets the layer to the value or values set at frame 0.



Freehand options

- **Auto Weld:** When checked, automatically welds a new point to an existing point. The existing point is highlighted when the mouse hovers over a point that can be welded. When you draw two lines that cross, the point at which they cross will automatically be welded together when this option is on.

- **Auto Fill:** When checked, automatically fills a closed shape when you create it.
- **Auto-stroke:** When checked, automatically creates a stroke around the shape that you create. Uncheck this option to create a shape that has no outline.
- **Auto close:** When unchecked, closes a shape when the cursor is released over the beginning of the shape. When checked, connects the shape from the current position to the start point when you release the mouse button.



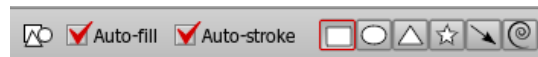
Draw Shape

Draw Shape

Shortcut: E

The Draw Shape Tool provides a way to quickly draw commonly used shapes: squares, ovals/circles, triangles, stars, arrows, and spirals. Each of the shape options are shown later in this section.

Draw Shape Tool Options



Draw Shape Options

- **Auto Fill:** When checked, automatically fills a closed shape when you create it.
- **Auto-stroke:** When checked, automatically creates a stroke around the shape that you create. Uncheck this option to create a shape that has no outline.

Rectangle



Rectangle

The Rectangle tool is a shortcut for creating a rectangular shape. Just click and drag to draw a rectangle. Hold the **Shift** key to constrain the shape to a square. Hold the **Alt** key to make the click point the center of the rectangle, instead of one of its corners. There's nothing special about rectangles created with this tool - they're just four points and four curve segments and can be manipulated just like anything else. You could create the same shape with the Add Point tool, but for a simple rectangle, this tool is quicker.

Oval



Oval

The Oval tool is a shortcut for creating an oval shape. Just click and drag to draw an oval. Hold the **Shift** key to constrain the shape to a circle. Hold the **Alt** key to make the click point the center of the circle. There's nothing special about ovals created with this tool - they're just four points and four curve segments and can be manipulated just like anything else. You could create the same shape with the Add Point tool, but for a simple oval, this tool is quicker.

Triangles



Triangles

The Triangle tool is a shortcut for creating a triangle shape. Just click and drag to draw a triangle. Hold the **Shift** key to constrain the shape to an equilateral triangle.

Stars



Stars

The Stars tool is a shortcut for creating a star shape. Just click and drag to draw a star. The star will be drawn from the upper point of the star, and all five points of the star will be equal in size.

Arrow



Arrow

Click and drag to draw an arrow shape. Press the **Shift** key to constrain the arrow to a horizontal or vertical line.

Spirals



Spirals

Click and drag to draw a spiral shape. The number of windings increase as you drag outward. By default the

spiral radiates in a clockwise direction from the center. Press the **Alt** key to create a counter-clockwise spiral.

Delete Edge

Shortcut: D

It's easy to delete points - just select them and press backspace or delete. However, sometimes you may want keep two points, but break the curve connecting them. To do this, use the Delete Edge tool. Just use it to click on the curve segment you want to delete and it will disappear.

You can use the Delete Edge tool to delete unwanted lines. For example, you can use the Freehand tool to quickly sketch out shapes, and the Freehand tool will automatically weld crossed lines together as you draw. You can then later clean up the shapes by deleting unwanted hanging lines with the Delete Edge tool.



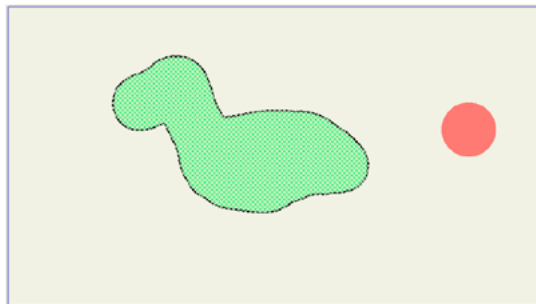
If the edge you delete makes up part of the outline of a fill shape, that shape will also be deleted.



The Delete Edge tool is also useful when used in conjunction with the Freehand tool. Due to the improved welding capabilities of the Freehand tool, you can freely sketch a character without having to worry about exact placement of lines. Any lines that cross will be welded together. You can then use the Delete Edge tool to remove unwanted straggling ends, simply by clicking on them with the Delete Edge tool.



Delete Edge

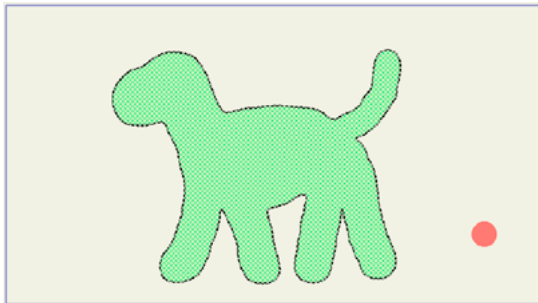


The first pass of the Blob Brush Tool

You can add additional strokes to refine or add to the shape. In the following example, additional strokes with different brush sizes add legs and arms to the previous shape.

Blob Brush

The Blob Brush tool allows you to block shapes out very quickly. For example, you can start by blocking in part of the character as shown below.




Additional passes of the Blob Brush Tool add to the previous shape.

You'll get an accurate preview of the shape as you draw. When you release the mouse, a vector outline will be generated for the shape. When you choose this tool, a red circle gives you a preview of the brush size.

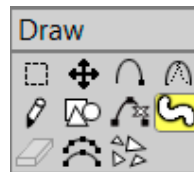
The following keyboard shortcuts can be used with the Blob Brush tool:

- You can adjust the size of the brush by using the Brush Radius setting in the tool options area, or by pressing the **Alt** key and dragging to resize the brush.

- If you hold down the **Command/Ctrl** key you can erase from the shape, or use the Eraser tool. See "Eraser" on page 44 for more information.
-  The brush tool can create a lot of extra points. You can use the new Point Reduction Tool to reduce the number of points. See "Point Reduction" on page 45 for more information.



You might notice the viewport jump at times when using the Blob Brush tool. This happens when you extend your drawing outside the boundary of the work area. The viewport resizes to bring that additional area into view to ensure that the object that you drew will fit on the screen.

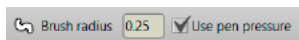


Blob Brush

Chapter 3: The Draw Tools

Blob Brush Tool Options

- **Brush Radius:** Sets the radius of the brush. A red circle gives you a preview of the brush size. You can also adjust the radius by pressing the **Alt** key and moving your mouse left or right.
- **Use Pen Pressure:** Check this option if you are using the brush with a pressure-sensitive stylus and tablet.

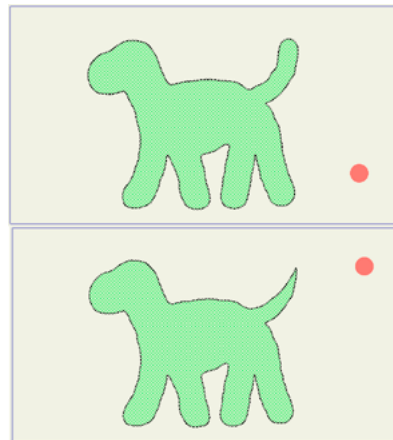


Brush Options

Eraser

The Eraser tool allows you to cut holes in any shape. Simply select the shape that you want to modify with the Select Shape tool (described in ["Select Shape" on page 48](#)). Then, switch to the Eraser tool to erase portions of the selected shape.

In the following example, the Eraser Tool is used to modify the shape of an animal's tail.



*The Eraser Tool is used to modify the shape of an animal's tail.
Before (top) and after (bottom)*

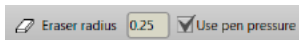


You might notice the viewport jump at times when using the Eraser tool. This happens when you extend your drawing outside the boundary of the work area. The viewport resizes to bring that additional area into view to ensure that the object that you drew will fit on the screen.

*Delete Edge*

Eraser Tool Options

- **Eraser Radius:** Sets the radius of the eraser. You can also adjust the radius of the brush by pressing the **Alt** key and moving your mouse left or right.
- **Use Pen Pressure:** Check this option if you are using the eraser with a pressure-sensitive stylus and tablet.

*Eraser Options*

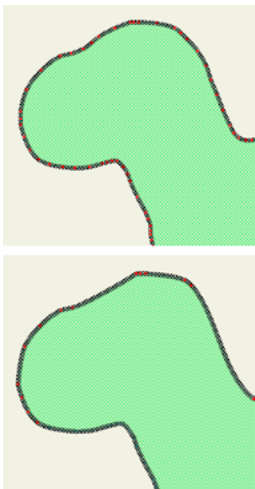
Point Reduction

The Blob Brush, Eraser, and Paint Bucket tools can generate a lot of extra and unnecessary points. The Point Reduction tool helps you reduce the point count in any vector object so that the shapes are easier to animate.

*Delete Edge*

When the Point Reduction tool is selected, the red circle gives you a preview of the brush size. You can set the radius in the options toolbar, or press the **Alt** key while dragging to resize the brush.

To use the tool, simply paint along the area where you want to reduce the number of points. As you paint, the brush will leave a trail behind where you have painted. The areas that you paint over will be simplified.

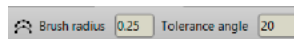


Before (top) and after (bottom) Point Reduction

Point Reduction Tool Options

- **Brush Radius:** Sets the radius of the brush.

- **Tolerance Angle:** If you want to reduce the number of points but not change the shape so much, reduce the tolerance angle. Lowering the tolerance angle will not remove as many points, but it will keep the shape closer to what you originally drew.



Point Reduction Options

Scatter Brush

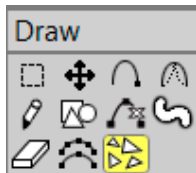
The Scatter Brush allows you to spray shapes into your scene. There are a number of preset shapes, or you can also copy any shape to your clipboard and spray multiple copies of that shape into your scene.

To use the Scatter Brush tool, try the following:

Copy a vector object into your clipboard, or select one of the preset options from the Preset menu.

1. Choose the vector layer that you want to paint into.
2. Set the Min and Max Width settings appropriately for the scale of the objects.

3. Set other options in the Scatter Brush Options panel if you want to increase or decrease variation in the angle, spacing, or color of the objects you are spraying.



Scatter Brush

Scatter Brush Tool Options



Scatter Brush Options

- **Spacing:** Specifies the minimum amount of space between the objects that you spray.
 - **Color Jitter:** Specifies the maximum amount of color variation for the objects that you spray.
 - **Flip X:** Check this option to flip the objects being sprayed along the X axis.
 - **Flip Y:** Check this option to flip the objects being sprayed along the Y axis.
 - **Preset Menu:** Click the Preset menu to choose from a number of different presets that you can spray into your scene. If you choose Use Clipboard, the Scatter Brush tool sprays the contents of your clipboard into the scene.
 - **Min Width** and **Max Width:** Sets the minimum and maximum width of the objects that you spray. If you want all of the objects to be the same size, set both values the same. Higher values create larger objects.
- **Scatter Brush Options:** Click this button to display the following options
 - **Angle Jitter:** Specifies the maximum amount of angle variation in the objects that you spray.

Chapter 3: The Draw Tools

Chapter 4: Fill Tools

Using the Fill tools for vector layers, you take the drawings you created with the Draw tools, and you tell Anime Studio which areas should be filled with color, where outlines should be placed, and what fill and line styles to use.

The drawings created with Draw tools are only guides. As far as Anime Studio is concerned, they're invisible and they won't show up in the final rendered output. That's where Fill tools come in. Draw tools define the **shape** of objects, while Fill tools define the **appearance** of those objects. Of course, you're always free to switch back and forth between any of Anime Studio's editing tools at any time.

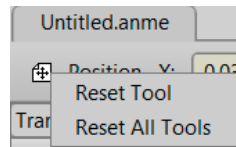


Anime Studio has a smart tool palette, which shows and hides tools based on their need.

The position of the tool shown in the screenshots may differ, depending on the selected layer in the Layers palette, and the current time in the timeline.



*Click the tool icon in the properties bar to display a submenu. Choose **Reset Tool** to reset the current tool to its default settings. Choose **Reset All Tools** to reset all tools to their default settings.*



Reset tool options.

Select Shape

Shortcut: Q

This tool is used to select one or more existing shapes (fills or outlines).

To select a shape, just click on the desired shape and it will be selected.

- **To select additional shapes**, press the **Shift** key while you click and drag the mouse over each additional shape to add to the selection.
- **To deselect a shape**, press the **Alt** key while you click the shape(s) you want to remove from the selection.

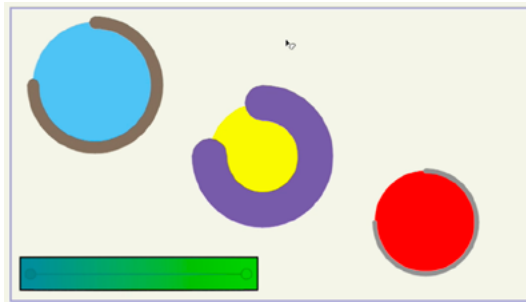
After your shape or shapes are selected, you can press the **Delete** or **Backspace** keys to delete the shapes, or adjust

their properties in the Style Window (see “[Chapter 13: Style Window](#)” on page 163). Options also appear in the properties bar to change the color of the fill or stroke in the selected shapes.

After clicking on a shape to select it, you then have the option to select shapes lower in the stacking order. Just hold down the **Ctrl** key (Windows) or **Cmd** key (Mac) and press the down arrow key to select the next shape lower down at the point you clicked the mouse. Hold **Ctrl/Cmd** and press the up arrow key to select the next shape higher in the stacking order at that same point.

When you change the properties of multiple selected shapes, the changes that you make will be applied to all selected shapes. For example, you can select shapes that have different color fills, and then change the fill color in the style window so that all of the shapes are filled with the same color.

To illustrate, the following figure shows four different shapes, each with different fill and stroke properties.



Four different layers, each with objects that have different shape properties.

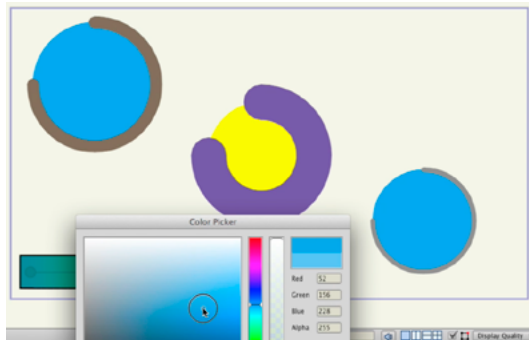
If you click on one of the shapes with the Select Shape tool, the Style window updates to display the fill and stroke properties of the shape that you clicked (color, stroke width, brush settings and effects, and so on).

If you hold down the **Shift** key while using the Select Shape tool, you can select multiple shapes. Pressing the **Alt** key will remove a shape from the selection.

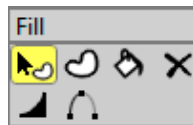


Multiple shapes selected with the Select Shape tool.

The properties of the first shape that you selected will appear in the Style window. Any changes that you make in the Style window will be applied to all of the selected shapes. The preview window will update as you make your style selections.

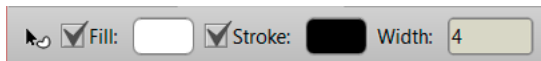


The preview updates as you make changes in the Style window.



Select Shape Tool

Tool Options



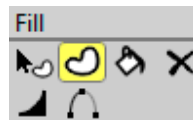
Create Shape Options

- **Fill:** Check this option to change the fill of the selected shape(s).
- **Fill Color:** Click the color square to select a fill color for the selected shape(s).
- **Stroke:** Check this option to change the stroke of the selected shape(s).
- **Stroke Color:** Click the color square to select a stroke color for the selected shape(s).
- **Width:** Allows you to set a numerical value for the width of the stroke. Fractional values are allowed.

Create Shape

Shortcut: U

The Create Shape tool is used to select a region to be filled with color, or a set of edges to be drawn as an outline. It operates exactly like the Select Points tool described in "Select Points" on page 26.



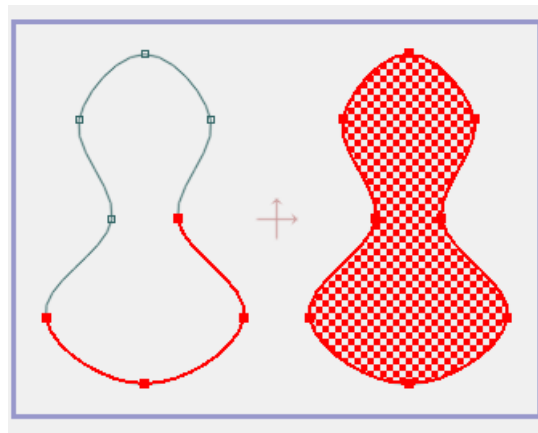
Create Shape Tool

Using the Create Shape tool, select all the points that form the outer border of the shape you wish to create. If you select a set of edges that completes an enclosed shape, a highlighted checkerboard will show you the extent of the region you are creating. Otherwise, you will just see a highlighted outline on the selected edges.

When you have the desired region selected, press the spacebar or press the Create Shape button in the status bar to actually create a shape from the selected edges. The Style Window (see "Chapter 13: Style Window" on page 163) can now be used to choose the shape's color, line width, style, etc. **This is a very important step - until you press the spacebar or use the Create Shape button, you**

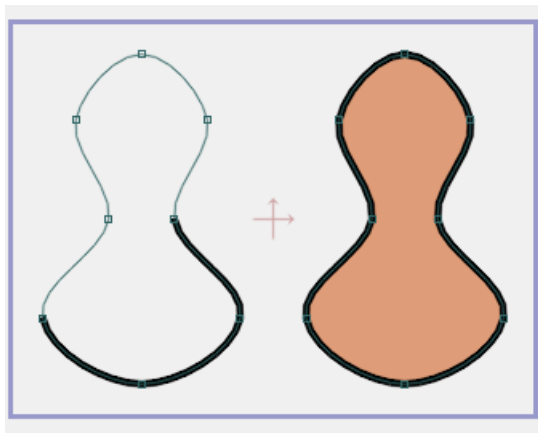
are only preparing the selection. A shape is only created when the spacebar or button is pressed.

The picture below shows a selection in progress using the Create Shape tool. Note that the figure on the left is not filled with a checkerboard because its border points are not all selected. The checkerboard area indicates the region that would be filled if the user hit the spacebar at this particular moment. The left figure would only receive a partial outline and no fill, since then entire border has not been selected.



Selecting the curves to make up a shape

The next figure shows the result of pressing the spacebar to actually create the two shapes that were being prepared in the figure above.



The two resulting shapes

After creating a shape, if you decide that you only want a fill, and not an outline, you can uncheck the **Stroke** box in the Style window. Similarly, uncheck the **Fill** box in the Style window to make your shape have only an outline, and no fill color.

Chapter 4: Fill Tools

Tool Options



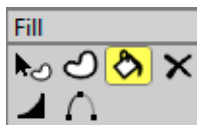
Create Shape Options

- **Select Group:** Used to select a group that was previously created with the Select Points tool.
- **Create Shape:** Press the Create Shape button to complete the shape. This is the same as pressing the Spacebar after your selection is made.
- **Lasso Mode:** The Create Shape tool selects a rectangular area by default. Check this option to select points by drawing a lasso around the desired area.
- **Fill:** Select this option if you only want to change the fill of the selected object(s).
- **Stroke:** Select this option if you only want to change the stroke of the selected object(s).
- **Both:** Select this option if you want to change both the fill and stroke of the selected object(s).

Paint Bucket

Shortcut: P

The Paint Bucket tool is used to fill a closed area with color. Just click inside a closed shape to fill it with the current combination of colors and styles. This can make it much easier and quicker to fill shapes than with the Create Shape tool, but keep in mind you're still working with the same requirements - a shape must be completely closed in order to be filled.

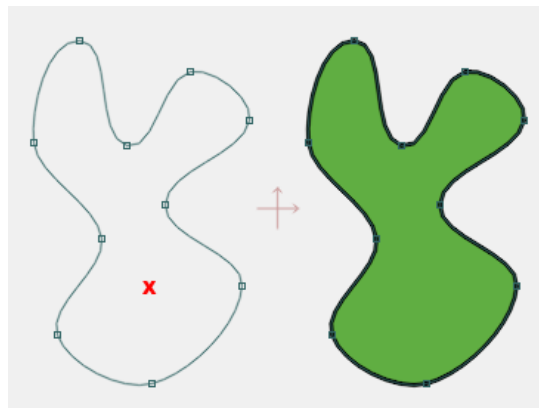


Paint Bucket

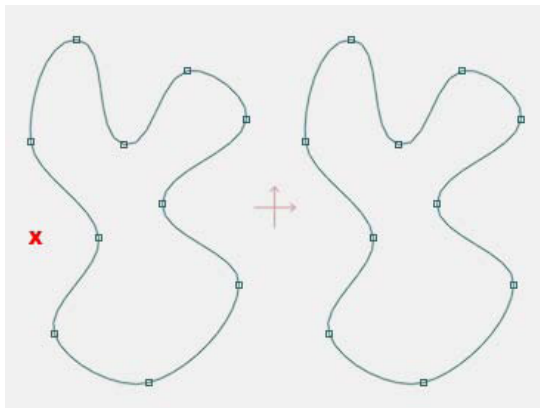


In Anime Studio 10 and later, the lines that create the closed shape do not have to be welded. For example, you can draw four overlapping lines with the Freehand tool with Auto Weld off, and then fill the inside of the lines with the Paint Bucket tool.

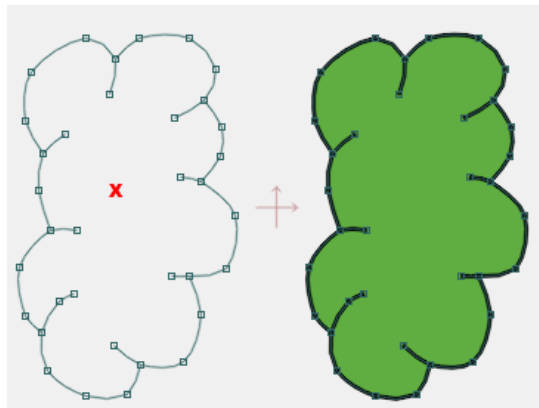
Below are some examples of sets of curves in Anime Studio, where the user might click with the Paint Bucket tool, and the resulting fills. In each case, the shape on the left is the starting shape, the red X indicates the point where the user clicked with the Paint Bucket tool, and the result is the shape on the right:



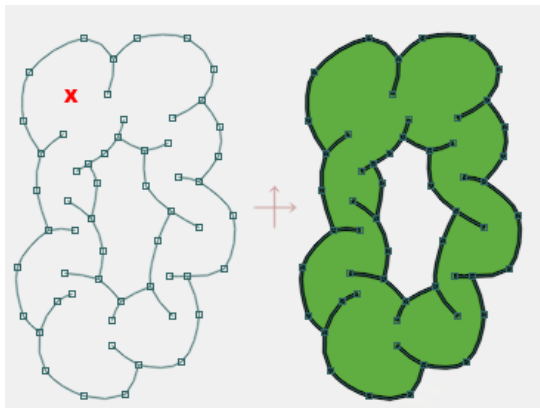
Filling a basic closed outline



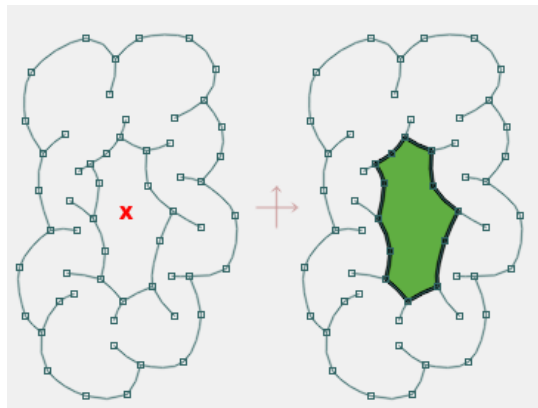
Clicking outside a closed outline (nothing happens - no fill).



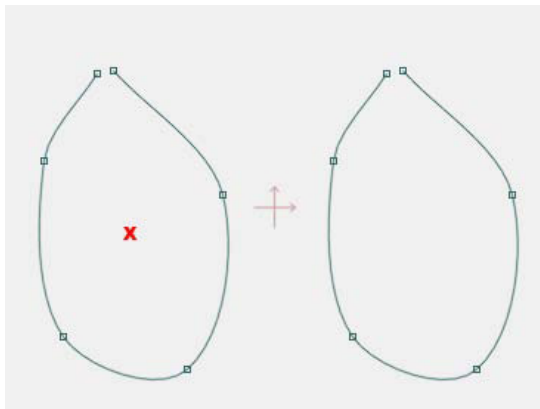
A more complex shape. There are some dead-end curves, but the overall shape is still closed.



A shape with a hole in it.

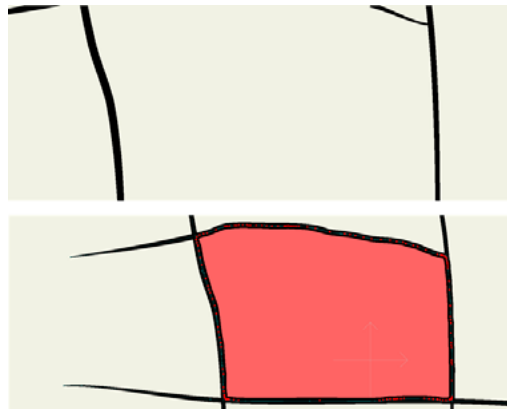


Clicking inside the hole fills just the hole



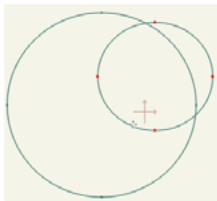
The shape is not closed (close, but not good enough) - no fill is created

If part of the shape is cut off on the edge of the editing window, the viewport will change to display the entire filled shape after you fill it with the Paint Bucket.



The viewport adjusts to display the entire filled shape after using the Paint Bucket.

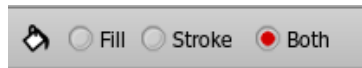
You can also draw shapes that overlap, and use the Paint Bucket tool to fill within areas that overlap. This allows you to quickly create complex boolean shapes.



Two overlapping shapes are filled with the Paint Bucket to create a boolean shape.

Chapter 4: Fill Tools

Tool Options



Paint Bucket Options

- **Fill:** Select this option to affect fill only.
- **Stroke:** Select this option to affect stroke only.
- **Both:** Select this option to affect both fill and stroke.

Delete Shape

To use the Delete Shape tool, click on a fill or outline to delete it from the project. Remember, in Anime Studio, the **shape** of an object is separate from its **appearance**. If you use this tool to delete a fill, the underlying points and curves will remain. If you want to delete those as well, go back to the Draw tools to work with the points and curves.



Delete Shape Tool

Line Width

Shortcut: W

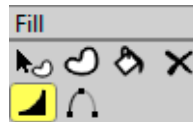
The Line Width tool is used to adjust the width of a line as it passes through a particular point. Using this tool, you can create lines that taper at the ends, get thinner in the middle, or change width several times along their length.



Line widths are stored internally in Anime Studio as percentage values. For example, a value of 100% represents the original line width, and a value of 200% represents double line width. The width of the line smoothly varies from the 100% (no custom width) value.



You can superimpose two strokes, each with a different line width, to create parts for characters that are made of very few points, making them much easier to animate. For more information refer to “**Tutorial 2.4: Varying Line Widths**” on page 70 in your Anime Studio Tutorial Manual.

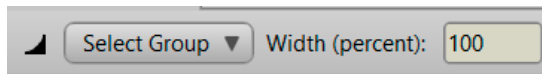


Line Width Tool

To use it, just click on the point you want to adjust, and drag the mouse left and right to adjust line thickness. (Be sure you first either set up an outline through the point, or a fill shape with a non-zero line width - otherwise this tool won't do you much good.)

You can adjust more than one point at a time by selecting multiple points with the Select Points tool from the Draw tool group.

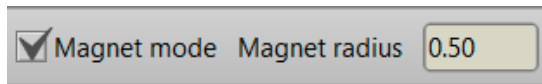
Tool Options



Line Width Options

- **Select Group:** Used to select a group that was previously created with the Select Points tool.
- **Width:** Allows you to enter a numerical value for the line width.

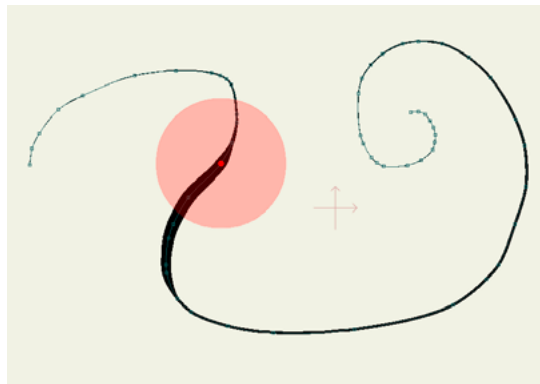
You can also enable the Magnet Mode option and enter a radius that determines the area that the magnet will affect.



Line Width Magnet Mode Options

- **Magnet Mode:** Check this option to display the cursor as a red semi-transparent circle.

- **Magnet Radius:** The points that appear within the red circle area will be affected when you use the Line Width tool. Use the Magnet Radius setting to increase or decrease the affected area.

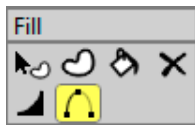


You can set a magnet radius to affect all vertices beneath the magnet.

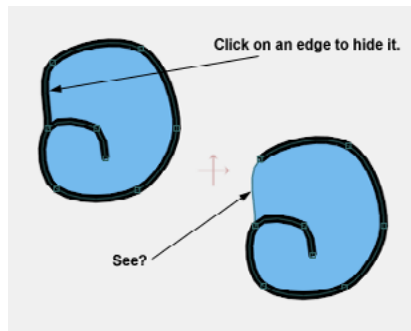
Hide Edge

Shortcut: H

Sometimes, you will have the need to create a fill shape with only a partial outline. The Hide Edge tool makes it easy to accomplish this. After creating the fill shape and setting the desired line width, simply click on the edge(s) that you want to hide - those edges will simply disappear from the outline, without affecting the fill. Below is a before and after example:



Hide Edge Tool



The Hide Edge tool in action

Working with Fills

To define a region to be filled, you must first select all the points along its boundary. That's what defines a fill region - the set of points along its outer edge. We'll take a look at some examples later. You can also create outlines using these tools. Outlines are less restrictive than fills - an outline is not a set of points along an outer boundary. Instead, an outline can be any set of points you choose. The curve

segments between these selected points will form the outline.

Fills and outlines are stacked on top of each other in the order you create them. This determines which fill or outline will be visible when two or more overlap. There are tools that allow you to change the stacking order of fills and outlines, but you'll learn that you can save yourself a lot of time by planning ahead and creating fills in the proper order to begin with.

There are a number of different ways to fill shapes in Anime Studio:

- Use the Select Shape tool to select the shape you want to change. The color and fill properties will be "picked up" in the Style window. You can then change the fill colors in the Style window.
- Use the Create Shape tool to fill closed outlines that do not have any fill. You will need to select the points in the outlines before you use the Create Shape tool.
- You can also use the Paint Bucket to fill shapes that do not yet have a fill. For example, you can use the Add Point or Freehand tool to create a shape that has a stroke only, and then later use the Paint Bucket tool to add a fill.

- You can also change colors with the Eyedropper. Use the Eyedropper to select a color from any of the shapes that use the color you want to apply. Then press the Alt key and click other objects with the Eyedropper to push the selected color to other shapes.

Color Picking

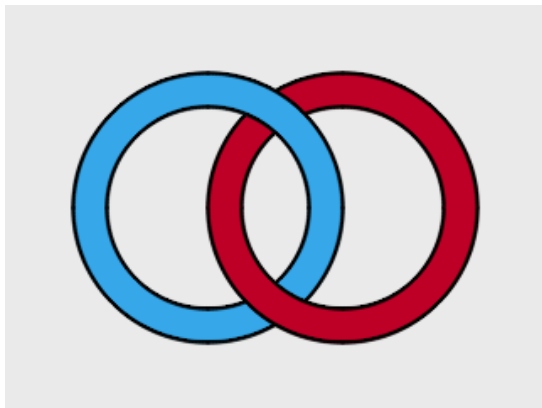
If the **Select Shape** or **Create Shape** tools are active and a shape is selected, you can quickly set the shape's color by picking it from another shape in the current layer. Just hold down the **Alt** key and click on the shape you want to copy the color from. The color (and style) will instantly be applied to the currently selected shape.

You can also push a shape's color and style onto other shapes. If you hold down **Alt + Ctrl** (Windows) or **Alt + Cmd** (Mac) and click on a second shape, the selected shape's color will be pushed onto the shape you click on. This is an easy way to propagate one shape's color and style onto several other shapes in the same layer.

There's no limit to the kinds of shapes you can create this way. By adding more boundary curves, you can create more and more complex fills - feel free to experiment.

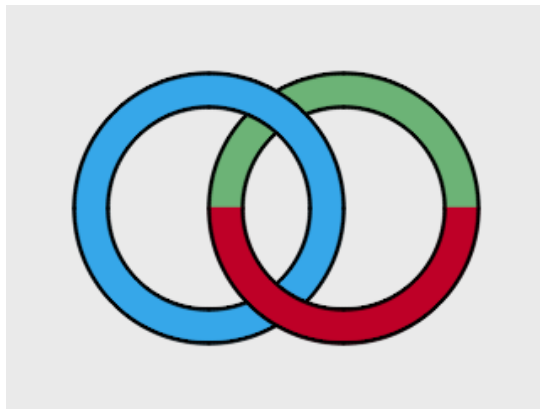
A Trick: Using Two Fills Instead of One

Sometimes you may want to create an object with parts that overlap in complex ways. Consider the image below:



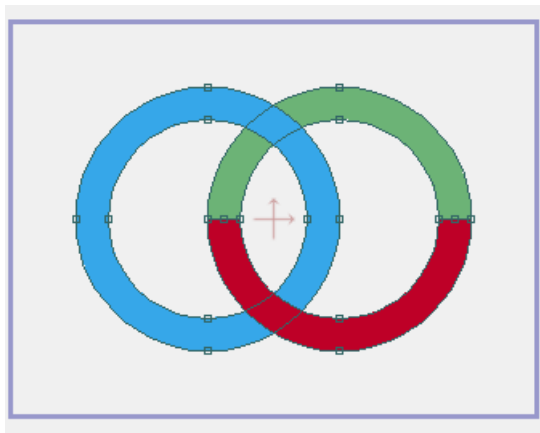
Two interlocking rings

The red ring is in fact two objects - one behind the blue ring, and one in front of it. The next image shows the same object, but colored differently so that the two parts of the red ring stand out.



The coloring shows three different shapes

It takes a little more work to set up an object when you have to split it into two (or more) parts, but sometimes it's the only way to achieve a certain effect. The picture below shows the project in an Anime Studio window, so that you can see the arrangement of points and curves. Note how the ring on the right has some extra curves set up so that it can be split into two fills.




Point and curve arrangement.

This technique is also useful in animation, for when you want an object to bend backwards and overlap itself. Normally, this would cause the fill that defined the object to get seriously distorted, or even to break holes in itself. However, by building the object out of two or more parts and stacking them properly, you can achieve this type of effect with no problem.

Chapter 5: Bone Tools

The following tools are available when working with Bone or Switch layers.

If a tool has the following symbol next to it: , then it can be used for animation as well. In general, tools that are used for bone setup can only be used when the time is set to frame 0 - others can be used at any time.

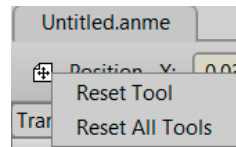


Anime Studio has a smart tool palette, which shows and hides tools based on their need.

The position of the tool shown in the screenshots may differ, depending on the selected layer in the Layers palette, and the current time in the timeline.



*Click the tool icon in the properties bar to display a submenu. Choose **Reset Tool** to reset the current tool to its default settings. Choose **Reset All Tools** to reset all tools to their default settings.*

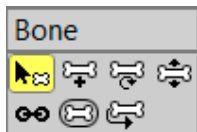


Reset tool options.

Select Bone

Using this tool, you can click a bone to select it. You can also draw a marquee or a lasso around multiple bones to select more than one bone with the Select Bone tool.

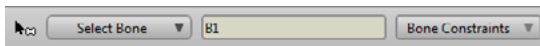
You might want to select a bone in order to delete it (press the **Delete** or **Backspace** keys - all of its children will be deleted too). You also might want to select a bone in order to add new child bones to it. Click anywhere besides a bone to de-select all bones.



Select Bone Tool

Tool Options

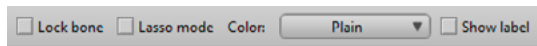
The following options appear in the Options toolbar when the Select Bone tool is active:



Select Bone Options (Part 1)

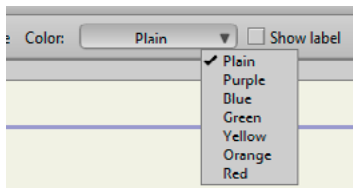
- **Select Bone:** Use the Select Bone dropdown list to select a bone by name.
- **Bone Name field:** Displays the name of the selected bone. You can edit the bone name in this field.

- **Bone Constraints:** Opens the Bone Constraints dialog, described in [“Bone Constraints” on page 67](#).



Select Bone Options (Part 2)

- **Lock Bone:** When checked, prevents accidental changes to the current bone.
- **Lasso Mode:** When checked, allows you to select multiple bones by drawing a lasso around them. When unchecked, you can select multiple bones by drawing a rectangular selection around them.
- **Color:** Click the Color selector to choose a representative color for the bones: **Plain, Purple, Blue, Green, Yellow, Orange, or Red**. These colors can be representative of any category you choose and are provided for project organization. The keyframes for colored bones will show up in the timeline in specially colored channels that match the colors you assign.



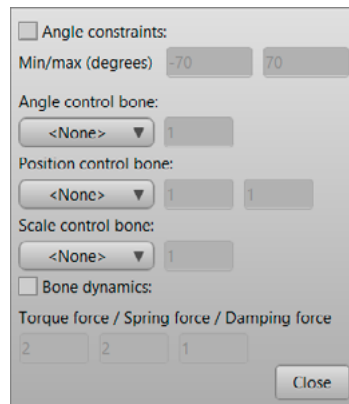
Color options

Bone Constraints

With the Select Bone tool selected, click the Bone Constraints button in the options bar to open the Bone Constraint options dialog shown below.



For detailed instructions and examples of the options in this dialog, refer to the Angle Constraints section in “Tutorial 3.2: Bone Constraints” on page 92 in your **Anime Studio Tutorial Manual**.



Bone Constraints Options

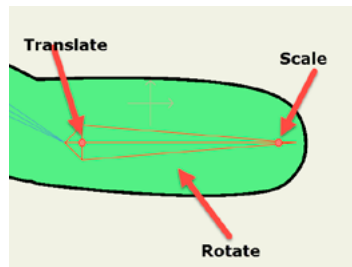
- **Angle constraints:** Check this option if you want to limit the movement of the bone within certain angles.
- **Min/max degrees:** Enter the maximum and minimum angle range that you want the bone to rotate. For example, if you only want the bone to rotate 10 degrees in either direction, enter -10 in the **Min** field, and 10 in the **Max** field.

- **Angle/Position/Scale control bone:** Allows one bone to control the motion of another. Click to select the bone that you want to be affected, and then use the drop-down menu to select the bone that you want to use as the controller. Enter the desired control angle (positive and negative values are accepted) in the Angle field, the X and Y coordinates in the Position fields, or the desired scale factor in the Scale field.
- **Bone dynamics:** Tells Anime Studio to move the selected bone automatically, based on values entered in the **Torque Force**, **Spring Force**, and **Damping Force** values entered. See **"Tutorial 3.3: Bone Dynamics"** on **page 102 in your Anime Studio Tutorial Manual**.
- **Close:** Closes the Bone Dynamics palette.

Transform Bone

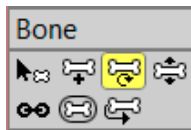
The Transform Bone tool allows you to translate, rotate, or scale a selected bone.

When the Transform Bone tool is selected, two dots appear at the ends of each bone. In addition, the cursor will change to display the type of transformation that will be applied:



Transform Bone tool indications

- To rotate a bone: Click near the bone, but outside of the handles. A rotate cursor will provide indication when the mouse is placed correctly. Then drag the mouse to rotate the bone.
- To translate a bone: Click and drag the dot at the base of the bone.
- To scale a bone: Click and drag the dot at the end of the bone.



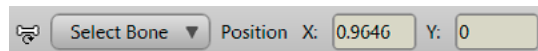
Transform Bone Tool

The following key combinations work while the Transform Bones tool is selected:

- Holding the **Shift** key will cause the bone to only translate horizontally or vertically relative to its parent (if you click near the base)
- Holding the **Shift** key while rotating will constrain the rotation to 45 degree increments.
- You can nudge the selected bone by small increments by holding down the **Ctrl** key (Windows) or **Cmd** key (Mac) and pressing the arrow keys. Hold down **Shift** in addition to **Ctrl/Cmd** to nudge the bone by a greater increment.
- If any objects in other layers have been bound to the bone, they will not move if the current frame is 0. At frame 0, you are modifying the bone layout - at later

frames you are animating with this tool, and bound objects will move with the bone.

Tool Options



Transform Bone Options (part 1)

- **Select Bone:** Click this menu button to select a bone by name.
- **Position X:** Allows you to numerically enter a value for the X coordinate.
- **Position Y:** Allows you to numerically enter a value for the Y coordinate.



Transform Bone Options (part 2)

- **Length:** Allows you to view or enter a numerical value for the length of the bone.

Chapter 5: Bone Tools

- **Reset:** If pressed at Frame 0, resets a layer back to its default length. If pressed at any other frame, resets the layer to the value or values set at frame 0.
- **Scale:** Allows you to view or enter a numerical value for the scale of the bone.
- **Reset:** If pressed at Frame 0, resets a layer back to its default scale. If pressed at any other frame, resets the layer to the value or values set at frame 0.
- **Angle:** Allows you to view or enter a numerical value for the angle of the bone.
- **Reset:** If pressed at Frame 0, resets a layer back to its default angle. If pressed at any other frame, resets the layer to the value or values set at frame 0.

Add Bone

Use the Add Bone tool to add new bones to a skeleton. The location you click will be the base of the bone (the point it rotates about), and where you drag to will be the endpoint.

When you add a new bone, Anime Studio automatically assigns a name to it. By default, the first bone you add is named B1, the second B2, and so on.

Chapter 5: Bone Tools

If another bone is selected before you click and drag, it will be the parent of the new bone you create. Otherwise, the new bone will be parentless, a root bone.

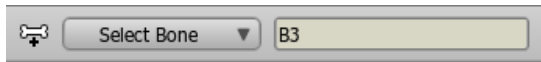


Add Bone Tool

Hold the **Shift** key to constrain the new bone to point in a direction that is a multiple of 45 degrees.

Note that bones don't have to be touching to have a parent-child relationship. In the example shown in "**Tutorial 3.4: Character Setup**" on page 109 in your **Anime Studio Tutorial Manual**, the upper arm bones are children of the spine, even though they are separated from it by a small distance. This will often be the case - arms should rotate about the shoulders, not the neck, even though they move when the spine moves.

Tool Options



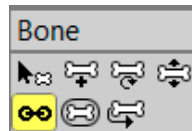
Add Bone Options

- **Select Bone:** Click this menu button to select a bone by name.
- **Text Field:** Allows you to assign a name to the currently selected bone, or to edit the name of the bone as automatically assigned by Anime Studio.

Reparent Bone

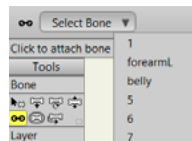
Sometimes when building a skeleton, you may accidentally add bones to the wrong parent. Later, when you discover the error, deleting bones and adding new ones is just too much work. Instead, use the Change Parent tool to change a bone's parent. First, select the bone whose parent you want to change (using the Select Bone tool). Then, using this tool, click on the new parent bone. (The new parent will become highlighted in blue.) If you want to turn the selected bone into a root bone (one that has no parent), just click on the background.

Chapter 5: Bone Tools



Reparent Bone Tool

Tool Options



Reparent Bone Tool

- **Select Bone:** Click this menu button to select a bone by name.

Bone Strength

When using bones to control the points in a vector layer or to warp an image layer, by default every bone has some degree of influence over every point in the vector layer (or image). The Bone Strength tool lets you adjust how much influence each bone has. When this tool is activated, a semi-transparent region appears around each bone - this region indicates the strength of the bone. If you drag side to side on a bone with the Bone Strength tool, you cause the region of influence to shrink or grow. Points that are closer to the center of this region move more when the bone itself is moved.



Bone Strength Tool

Although by default, all bones have some influence over some points, you can change this behavior. In the Layer Settings dialog, under the Bones tab, there are two options, **Flexible binding** and **Region binding**. Flexible binding means that every bone will influence every point. Region

binding, on the other hand, means that a point will only move under the influence of the bone(s) in whose region of influence it lies. If that point only lies in one bone's region, it will only move with that bone - if the point is overlapped by the regions of two bones, it will move with both of those bones.

Flexible binding is the default setting for new bone layers because it works reasonably well almost automatically. The downside is that it leads to rubbery movement of the attached vector artwork. Region binding will give you cleaner movement, but takes a little more work to set up. **"Tutorial 3.4: Character Setup" on page 109 in your Anime Studio Tutorial Manual** shows you how to use the Bone Strength tool together with both types of binding to quickly set up a character's skeleton.

Tool Options



Bone Strength Options

- **Select Bone:** Click this menu button to select a bone by name.

- **Bone Strength:** Allows you to view or enter a numerical value for bone strength.

Manipulate Bones



The Manipulate Bones tool has two purposes. First, when the current frame is set to 0, it is used to test whether a skeleton is set up and working properly. Although it moves bones and points around, the changes it makes are only temporary. When you switch to another tool, the skeleton is reverted back to its original shape.



When working inside a Smart Bone action, the Manipulate Bones tool can introduce extra unwanted bone motion in the Smart Bone action. For this reason, the Manipulate Bones tool will be disabled.



Manipulate Bones Tool

The second use of this tool is at frames greater than 0. If the current frame is greater than 0, then this tool will move the skeleton in the same way, but the move will introduce a keyframe for animation.

To manipulate a skeleton, just click and drag the various bones that make it up. If points or other layers have been bound to the bones, they will move as well. The way the skeleton and the bound points move with this tool is exactly the same whether at frame 0 or a later frame. If some part of the skeleton doesn't move correctly, you can find out with this tool and fix it before you start animating.

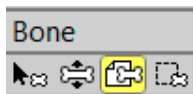
Note: If you only want to rotate a single bone, it's better to use the Rotate Bone tool. The Manipulate Bones tool will move a whole chain of bones, which is definitely **not** what you want if you plan to rotate a single bone.

Bind Layer

Other layers can be contained within a bone layer. For example, you could create a hand layer and place that within an arm layer. To bind the hand to the arm, use this tool. Just click on the bone in the parent layer that you want to connect to, and the entire layer will move with that bone. In the arm/hand example, you would click on the bone nearest the wrist to bind the hand to the end of the arm.

Use this tool to bind an entire layer to a single bone. If you would rather bind certain points in a vector layer to certain bones, then you should use the Bind Points tool instead.

For more information on how to use the Bind Layer tool, see the Layer Binding section of **“Tutorial 3.1: Bone Binding” on page 83 in your Anime Studio Tutorial Manual.**

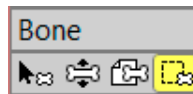


Bind Layer Tool

Bind Points

The Bind Points tool operates exactly like the Select Points tool described in **“Select Points” on page 26**. Use it to select a group of points to bind to a bone. In order to use this tool, you must be on Frame 0, and a bone must first be selected. When a bone is selected, the points that are currently bound to it are automatically selected as well. Use this tool to add or remove points from that selected group. When the correct group of points is selected that you want to bind to the bone, press the spacebar - this tells Anime Studio to perform the binding. This technique is

demonstrated in **“Tutorial 3.1: Bone Binding” on page 83 in your Anime Studio Tutorial Manual**



Bind Points Tool



We don't usually recommend using the Bind Points tool. Instead, the best way to attach points to bones is to use automatic bone binding, together with the Bone Strength tool.

Offset Bone

The Offset Bone tool lets you add an extra amount of bone movement starting at frame 1 of your animation. The reason you might want to do this is to simplify the setup of a complex character. Often, parts of a character such as arms and legs overlap, making it difficult to set up bones and attach the proper parts of the character's body to them. The Offset Bone tool lets you draw the parts of a character in disconnected positions, set up bones, and then move them all back into position.

It's difficult to describe the usefulness of this tool without a hands-on example, so look in **"Tutorial 3.1: Bone Binding"** on page 83 in your Anime Studio Tutorial Manual.



Offset Bone Tool

- **Animation Offset Y:** Allows you to numerically enter a value for the amount of offset on the Y axis.
- **Reset:** If pressed at Frame 0, resets a layer back to its default value. If pressed at any other frame, resets the layer to the value or values set at frame 0.

Tool Options



Offset Bone Options

- **Select Bone:** Click this menu button to select a bone by name.
- **Animation Offset X:** Allows you to numerically enter a value for the amount of offset on the X axis.

Chapter 6: Layer Types

Drawings in Anime Studio are vector-based. Vector drawings are different from pixel-based images (like a photograph) in that they use lines and curves to represent a picture, rather than a grid of colored pixels. This difference makes a lot of things easy in Anime Studio that would be difficult or impossible to do with a pixel-based image.

First of all, since an Anime Studio drawing is represented as a bunch of curves, you can reshape the curves at any time, without ever losing precision. Also, Anime Studio projects are relatively small, even for complex animations - this means Anime Studio doesn't require much memory even when working on a long movie. Vectors also have benefits when it comes to animation. By moving just a few points, you can totally change the shape of an object over time.

You're not restricted to vector artwork, though - Anime Studio also has Image Layers. Using this type of layer, you can work with regular images within an Anime Studio project. So, Anime Studio is not strictly vector-based, but you will probably still use mostly vector layers, as image layers are not as flexible when it comes to animation.

Of course, most standard image and movie formats are not vector-based, so when you're done working on a Anime Studio project, it must be rendered to create a traditional pixel-based image. During the rendering process, Anime Studio can apply various effects to the objects, such as shading and blurring.

Anime Studio is designed in such a way that projects are split into layers. You can have many, many layers in a Anime Studio project, each representing a different element in a scene or animation, such as background scenery, a character, or a title. Some layers can even contain other layers, so a more complex object, such as a character, might contain separate layers for each arm and leg.

Layer Types

Anime Studio currently supports the following types of layers:

- **Vector Layers** are used to hold vector-based artwork. These are the main type of layer you will use to create drawings. [See "Vector Layers" on page 77 for more information.](#)

Image Layers can be used to bring in images from other applications. Image files created in 3D programs or photo editing applications can be used in Anime Studio with Image Layers. See "Image Layers" on page 78 for more information.

Bone Layers contain skeletons that are used to control the artwork in your vector and image layers. You manipulate skeletons as if they were "puppets" by bending arms and legs to make a character move. See "Bone Layers" on page 79 for more information.



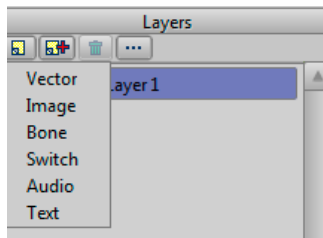
Right-click a Bone layer in the Layers window to quickly convert it into a Switch layer.

Switch Layers are just like Bone layers, except they will only display one of their sub-layers at a time. Switch layers are an excellent way to perform lip-sync animation. Which sub-layer gets displayed is controlled by a switch data file. You can create this data file by hand, or better yet, use a lip-syncing program like Papagayo. See "Switch Layers" on page 82 for more information.

- **Audio Layers** allow you to add a sound file to your project. When adding an audio layer you will be prompted to select an audio file.

Vector Layers

Vector layers are the most common layer in Anime Studio projects. Artwork that you create in Anime Studio is always contained in a vector layer. Tools are available for drawing and editing curves, setting up fills and outlines, and connecting your drawings to bones.



Vector Layers

The tools available for working with vector layers essentially make up a 2D drawing program. You can draw lines and curves, re-shape existing curves, and manipulate objects in various ways. There are a couple ways that Anime Studio differs from other drawing programs. First, everything you draw in Anime Studio is a set of points and curves. In many programs, when you draw a circle, you get a circle object, or you may type some text to create a text object. In Anime Studio, once you've created the circle or the text, there's no difference between them whatsoever - they're both collections of curves. One happens to be in the shape of a circle, and the other in the shape of some text. There are advantages in treating all objects the same: first, you never have to worry about what type of object you're working with - the answer is always the same: a set of points and curves. The other advantage is that any operation you can perform on hand-drawn curves can be performed on text, or a circle, or whatever.

The other feature of Anime Studio's drawing mode that is different from many other drawing programs is the concept of welding. In Anime Studio, two points can be welded together into a single point. In fact, any number of points can be welded together. When points are welded together, moving one of them moves them all, along with any curves that pass through that point. This is particularly useful when you start to animate objects. For example, if you want to move a character's nose, then welding it to

the face might not be a bad idea. That way, however you distort the nose or the face, they'll always stay connected.

Image Layers

Image layers are a way of importing artwork into Anime Studio that was created in other programs. Any program that can produce image files can be used together with Anime Studio this way. For example, a painting program, photo editor, or 3D modeling program can produce images that can be used in an Anime Studio image layer. You can't edit the pixels of one of these images in Anime Studio, but you can move, resize and rotate image layers, and attach them to skeletons for more complex animation.



When an image layer is first selected, the default tool is set to the Transform Layer tool.

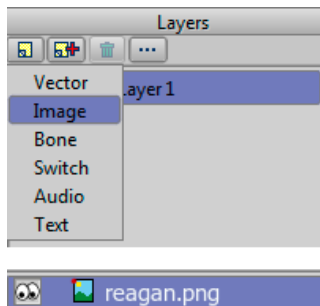


Image Layers

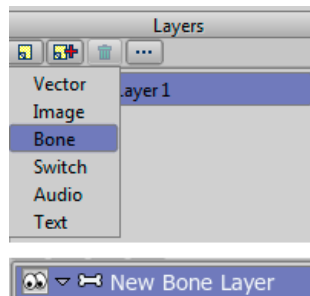
The best image format to use with Anime Studio is PNG. PNG files have high quality, good compression, and support full alpha channels for transparency effects. Although PNG is the preferred format for use with Anime Studio, you can also use JPEG, BMP, Targa, or GIF images.

Image layers can also be used to bring external movies into Anime Studio. Instead of selecting a still image, select a movie file when creating a new image layer. Anime Studio can import QuickTime (Windows and Mac OS) or AVI (Windows only) movies as image layers. When importing a movie file, Anime Studio will use the movie's

alpha channel (if present) to composite the movie with other elements in the scene.

Bone Layers

Bone layers are similar to Group layers - they can both group together multiple sub-layers that can then be manipulated as a single object. However, bone layers have an additional feature: In a bone layer, you can set up a skeleton that can be used to manipulate your artwork. A skeleton is exactly what it sounds like - an internal structure that can move the outer, visible portion of your artwork.



Bone Layers

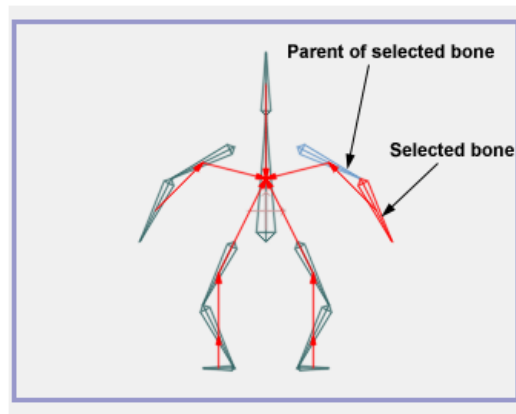
Setting up bones is sort of a pre-animation phase. You don't draw shapes in Bone layers, you set up controls that will help you animate later on. The purpose of setting up bones is exactly what you might think: creating a rigid skeleton inside your drawing. Later on, during animation, when you want to move an object, bones make the job easy. By moving a single bone in the arm of a character, for example, the whole arm will move with it. Around the elbow, the drawing of the arm will bend and stay smooth (as long as the bones were set up well with the Bone editing tools).

Bones by themselves don't really do much of anything: you can move them around, but they're invisible in the final Anime Studio output. To really make use of bones, they need to be attached to objects in other layers. This process is covered in **"Bones" on page 83 in your Anime Studio Tutorial Manual**, and also **"Chapter 5: Bone Tools" on page 65**.

When you create a skeleton out of a group of bones, the bones have a hierarchical relationship. Each bone has a single parent (or maybe no parent at all, in which case it's called a root bone), and each bone may have multiple children. The relationship between parent and children is that when a parent bone is moved, all of its children move with it. When a child bone is moved however, it's parent remains unchanged.

Chapter 6: Layer Types

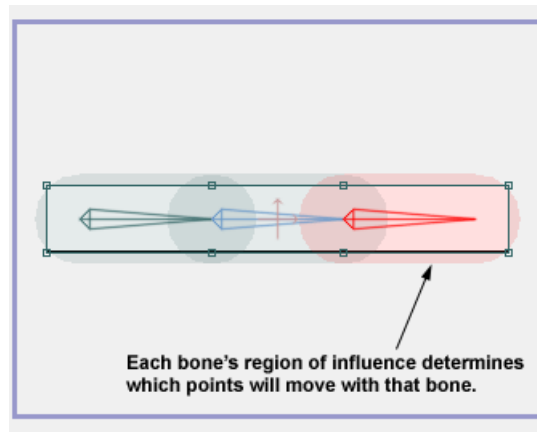
Below is a picture of a skeleton created in Anime Studio. Red arrows have been added that point from each bone to its parent (the spine has no parent and is referred to as the root of the skeleton). Note that the currently selected bone is highlighted in red, and its parent (if it has one) is highlighted in blue, as shown below.



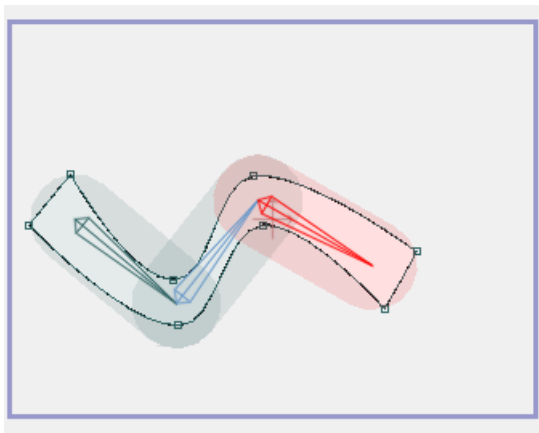
A skeleton hierarchy

When you use bones with a vector layer, you need to consider how the bones and curve control points will

interact. When a bone moves, it moves the points around it as well. Each bone has a region of influence (which you can adjust). Points move mostly with the bone whose region of influence they fall within, although other bones can still have an effect on them. Below is a picture of some points and bones. Notice the region of influence around each bone. The second picture shows the same object after the bones have been moved. Notice how the points follow the bones according to regions of influence (and how the curves pass smoothly through the points, wherever they move to).



A bone and vector setup

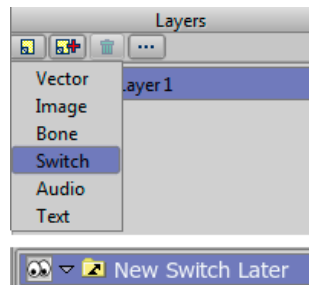


Moving bones moves the curve control points

Switch Layers

Switch layers are used to group together multiple layers, much like Group layers. However, switch layers have an interesting twist: only one of their sub-layers can be displayed at a time.

Chapter 6: Layer Types



Switch Layers

One reason you might want to do this is for lip-sync animation. In this case, each of the sub-layers would correspond to a mouth shape for a particular sound.

Many of the characters in the Library provide switch layers for the visemes that Anime Studio supports. For example, if you load Jace from the Version 6 character library and expand the Mouth layer, you'll see support for the following visemes and mouth positions: **Rest**, **Etc**, **FV**, **L**, **MBP**, **O**, **E**, **AI**, **U**, and **WQ**.

Anime Studio includes powerful automatic lip-syncing which is a big time saver .

- Anime Studio Debut uses the volume of the audio track to determine which mouth shape to use. When the audio is quiet, the mouth is more closed. When the audio is louder, the mouth is more open.
- Anime Studio Pro uses a production sync library that analyzes the audio track to determine the phonemes (the basic components of speech) that are being used. Results are improved when you enter the spoken words into Anime Studio. After the production sync analysis is done, Anime Studio Pro applies the matching mouth shape.

The mouth shapes supported by the Anime Studio lip syncing features follow standards developed by Preston Blair, an animator from the early days of Disney.



To set up a mouth that can lip sync, you will need to create a switch layer that contains at least ten sub-layers with different mouth shapes. Shapes should be created for the appearance of the mouth when at rest, and when speaking each of the 9 before-mentioned phonemes. The Preston Blair mouth shapes are discussed in more detail at http://minyos.its.rmit.edu.au/aim/a_notes/mouth_shapes_01.html.



For examples of how lip syncing is used, see “Tutorial 5.1: Automatic Lip-Sync” on page 140 in your Anime Studio Tutorial Manual and “Tutorial 5.2: Phoneme Lip-Sync” on page 142 in your Anime Studio Tutorial Manual.

If you prefer more control over lip-syncing than what the automatic built-in lip-syncing offers, you can take full manual control over the process using a separate, and free, tool called Papagayo (see <http://www.lostmarble.com/papagayo/>). In Papagayo, you type in the words that are being spoken. Papagayo then uses a phoneme dictionary to break down the words into spoken phoneme components. These are lined up on a timeline, along with the audio waveform.

Initially, the lineup on the timeline in Papagayo is rough and the phonemes are spaced evenly. You then shift words and phonemes along the timeline so that they line up better with the actual sounds you hear. The final result is saved out as a “switch data file” that can be imported into Anime Studio.

You can also create a switch data file by hand. To do this, the data file should look like this:

```
MohoSwitch1
```

```
1 A
```

```
2 A
```

10 B
 22 A
 37 C
 40 C

- The first line is a header that just tells Anime Studio that the file is a switch data file.
- The following lines contain two items each:
- The first item is a keyframe.
 - The second item is the name of one of the switch group's sub-layers. (In this example, the switch layer should have three sub-layers, named "A", "B", and "C".)

If you make changes to the switch data file outside of Anime Studio, and you want to incorporate those changes, you will need to re-load the data file. To do this, double-click the Switch layer in the Layers window, and in the dialog that opens up, go to the Switch tab, press **Source Data** and re-select the data file.

You don't have to use a data file to work with Switch layers - you can also control them manually from within Anime Studio. To control which sub-layer is displayed at any frame in your animation, just right-click on the Switch layer in the Layers window. A pop-up menu will appear that lets you choose which sub-layer to display.

Anime Studio includes several sample mouth sets for doing lip-sync with Papagayo - take a look at those files to see how a switch layer should be set up. Also, check out the lip-sync tutorials included in this manual.

Switch layers have a feature that allows for smooth switching. To use this feature, all the sub-layers need to be Vector layers, and they need to have the same number of control points. Then, when switching, Anime Studio can smoothly transition between sub-layers. To enable this feature, turn on **Interpolate sub-layers** in the Switch layer's properties dialog. An example of using this feature is included in one of the mouth sets mentioned above.

Switch layers can be set up with skeletons, just like bone layers. More accurately, a switch layer **is** a bone layer, just a specialized one. If you add bones to a switch layer, you can use them (for example) to change the shape of a mouth as it speaks, bending it into a smile or a frown.

Don't feel restricted to lip-sync animation with switch layers. They have a lot of potential uses (controlling eyes, syncing to music & sound effects, switching between different hand gestures, etc.).

Improvements to switch layers now include behaviors that will make them work better for frame-by-frame animation. These improvements include the following changes and enhancements:

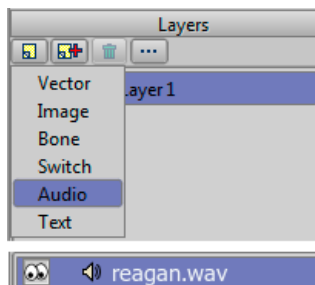
- You no longer need to select a switch layer's active child in the Layers palette. You can now simply **ALT+COMMAND/CTRL+Right-click** on it in the workspace.
- When a layer is added to an empty switch group, it becomes the active child at frame 0.
- When a new layer is created inside a switch group, Anime Studio will assign a unique name (which is necessary for proper switch group functionality).
- When a layer inside a switch group is renamed, the switch animation channel is updated to use the new name to preserve existing switch animation.
- When a new layer is created inside a switch group at a frame other than zero, that new layer is not marked invisible prior to that time. (The switch layer takes care of its visibility, so setting it separately is redundant and makes it difficult to re-time the frame-by-frame effect.)
- When a new shape is drawn in a vector layer inside a switch group at a frame other than zero, that shape will not be set invisible prior to that time. (Same reasoning as for new layers.)



If the children of a switch layer have layer colors assigned to them (as described in "Using Layer Colors" on page 128), the corresponding keys in the timeline will have the same color when those children are active. This makes it easier to see at a quick glance what switch layer is active at what time.

Audio Layers


Audio layers allow you to add an audio file to your project. You will be prompted to select a file after choosing this layer type. A graphic representation of the audio file appears in the timeline after the file is selected.



Audio Layers

Chapter 7: Layer Tools

The following tools are available to be used with any type of layer. Their purpose is to modify an entire layer, not just an individual object in that layer.

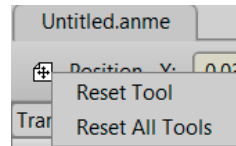
If a tool has the following symbol next to it: , then it can be used for animation - using the tool at different frames in the timeline will cause the object you adjust to change over time.



Anime Studio has a smart tool palette, which shows and hides tools based on their need. The position of the tool shown in the screenshots may differ, depending on the selected layer in the Layers palette, and the current time in the timeline.



*Click the tool icon in the properties bar to display a submenu. Choose **Reset Tool** to reset the current tool to its default settings. Choose **Reset All Tools** to reset all tools to their default settings.*



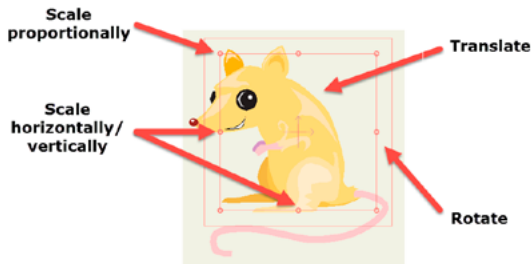
Reset tool options.

Transformation



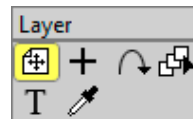
Use this tool to translate, rotate, or scale the entire layer. It doesn't matter what objects are selected - **everything** in the layer will move when you use this tool.

When the contents of the layer are selected, a pair of rectangles will surround the items in the layer.



Transformation rectangle

- Hold the **Shift** key while rotating to snap the rotation to 45 degree angles.
- **To scale a layer:** Click one of the corner handles to scale the layer uniformly. Drag a handle on the top, bottom, right, or left edge of the rectangle to scale the object horizontally or vertically.
- Press the **Alt** key while scaling to maintain the volume of the object while you scale ... in other words, if you increase the height of an object, the width will decrease; or if you increase the width of an object, the height will decrease.
- **To translate a layer:** Click anywhere inside the inner rectangle to move the layer to a new location.
- Hold the **Shift** key while translating to constrain the movement to straight horizontal or vertical movement.
 - Hold the **Alt** key while translating to move the layer on the Z (depth) axis.
- **To rotate a layer:** Click in the area between the inner and outer rectangles, and drag up, down, left, or right to rotate the layer around its origin point.



Transformation



When you are working with a 3D camera, the original plane of the object might not be the best place to move the object. You can use the Pan and Tilt camera tools to position the camera along the plane in which you want to move the object, and then use the Transform Layer tool to move the object along the plane of the camera's current view.

If the **Show Path** box in the tool options area is checked, then the motion path for the current layer will be displayed in the working area when this tool is active. This makes it easier to visualize and plan out the motion of a layer.

Direct Path Editing: To edit the motion path directly, hold down the **Ctrl** key (Windows) or **Cmd** key (Mac), then click and drag anywhere on the motion path to adjust the curve that the layer will follow through space.

Nudging: When this tool is active, you can nudge a layer by small increments by holding down the **Ctrl** key (Windows) or **Cmd** key (Mac) and pressing the arrow keys. Hold down **Shift** in addition to **Ctrl/Cmd** to nudge the layer by a greater increment.

Chapter 7: Layer Tools

Tool Options (for Translating)

Transformation Options for Translating

- **Position X:** Allows you to numerically enter a value for the X coordinate.
- **Position Y:** Allows you to numerically enter a value for the Y coordinate.
- **Position Z:** Allows you to numerically enter a value for the Z coordinate.

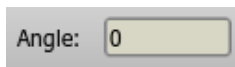
Tool Options (for Scaling)

Transformation Options for Scaling

- **Scale X:** Allows you to enter a numeric value for scaling along the X axis.

- **Scale Y:** Allows you to enter a numeric value for scaling along the Y axis.
- **Scale Z:** Allows you to enter a numeric value for scaling along the Z axis.
- **Reset:** If pressed at Frame 0, resets a layer back to its default value. If pressed at any other frame, resets the layer to the value or values set at frame 0.
- **Show Path:** Check this option to display the motion path on the layer. Uncheck the option to turn the motion path display off.

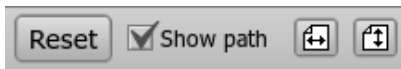
Tool Options (for Rotating)



Transformation Options for Rotating

- **Angle:** Allows you to enter a numerical value for rotation along the Z axis.

Tool Options (Other)



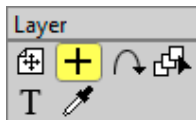
Other Transformation Options

- **Flip Layer Horizontally:** Click this button to flip horizontally.
- **Flip Layer Vertically:** Click this button to flip vertically.

Set Origin



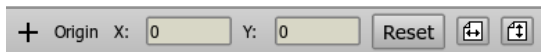
With the Set Origin tool selected, click anywhere in the layer to set the origin to that point. The origin of a layer is indicated by the crosshair displayed when editing that layer. The origin is the point that the layer rotates around when using the Rotate Layer tool, and the point that the layer resizes around when using the Transform Layer tool. The location of the origin can also define how a layer will move when it is attached to a group of bones.



Set Origin

Although you can change the origin at any time, the position of a layer's origin is not animated. We recommend setting the layer's origin just once, and then leaving it alone for the rest of the animation - otherwise unpredictable movement can occur. In most cases, you will never need to change the origin of a layer at all.

Tool Options



Set Origin Options

- **Origin X:** Allows you to view or enter a numerical value for the X origin

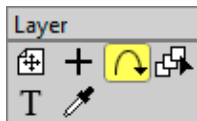
- **Origin Y:** Allows you to view or enter a numerical value for the Y origin
- **Reset:** If pressed at Frame 0, resets a layer back to its default value. If pressed at any other frame, resets the layer to the value or values set at frame 0.
- **Flip Layer Horizontally:** Click this button to flip horizontally.
- **Flip Layer Vertically:** Click this button to flip vertically.

Follow Path

This tool allows you to assign any layer to follow a path in your scene. You will need two layers, one with the path, and the other with the object that will follow the path.



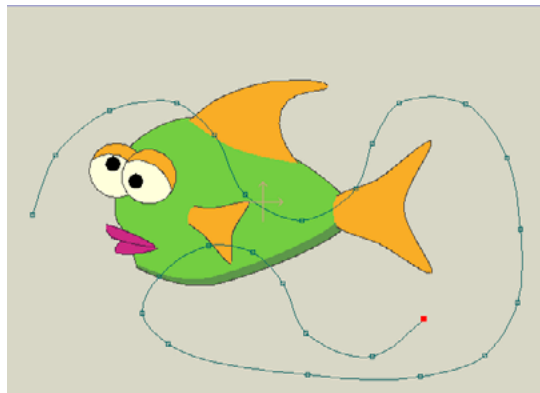
Previously, there was no indication that a layer was set to follow a path. This could make it very confusing when opening a file you weren't familiar with (or hadn't used in a while). Certain layers might move in unexpected ways. Now, layers that follow a path get a little extra squiggly line (indicating path following) on top of their icon in the Layers palette.



Follow Path



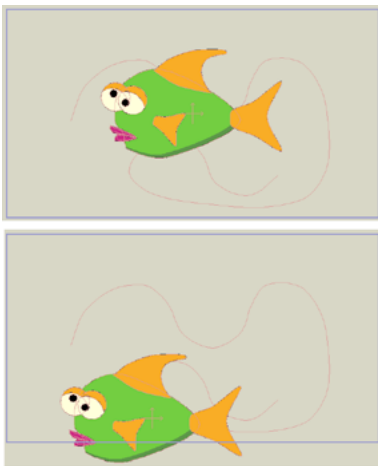
If a layer follows a path, an extra squiggly line will appear on top of their icon in the Layers palette.



Two layers, one with a path, and another with a character or object

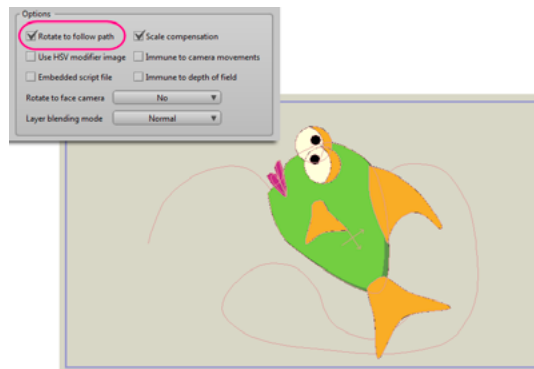
To use the tool, select the layer that contains object that you want to follow the path. Then select the **Follow Path** tool from the Layer section of the toolbox. The path appears in the scene after you select the Follow Path tool. Click the path in the scene to reposition the object to the beginning of the curve.

You can click and drag left or right with the Follow Path tool to position the object along the curve at any point. You can then move to a later frame in your animation and set the object to a new position. This allows you to animate the object travelling along the path.



The fish before and after it is placed on the path with the Follow Path tool

You can set the object to rotate so that it follows the path. Double-click the object's layer in the **Layers** window, which opens to the **General** tab. Check the **Rotate to follow path** option in the **Options** section of the Layer Settings dialog and click **OK**. This causes the object to automatically orient itself to follow the path to which it is assigned.



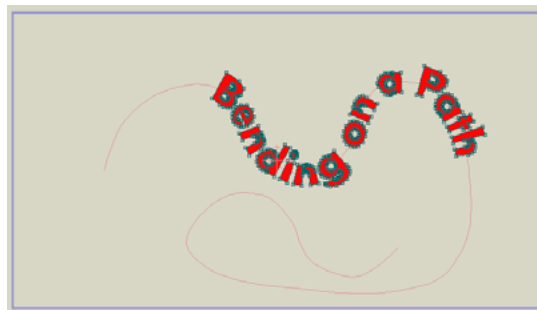
Check the Rotate to Follow Path option in the Layer Settings dialog to orient the object to the path



You can also combine path following with the Stroke Exposure tool, and expose the stroke of the curve while the object moves along the path.

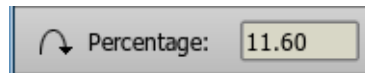


If you hold down the **Alt** key while clicking on a curve, the object will now bend along the curve. This allows for text bending, characters that warp along a path (like a snake), and so on. You can animate this effect. For example if you go to another point in the timeline, you can Alt-click somewhere else on the curve.



Press the **Alt** key while using the Follow Path tool to bend the object along the path

Tool Options



Follow Path Options

- **Percentage:** Allows you to enter a numerical value for the position of the object on the path. A value of 0 places the object at the beginning of the path, while a value of 100 places the object at the end.

Layer Selector

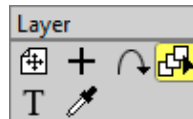
The Layer Selector helps you quickly find and edit the vector, image, and 3D content in your layers. It is very helpful, especially when you have dozens or hundreds of layers in your project and can't remember which layer a specific shape appears on.



This tool can be also be used by Alt+Right-clicking on the object that you want to select.

You can Alt+Right click any layer type that has visible contents. If you click a shape that appears in a Bone group, for example, it will select the vector layer that appears within that Bone group.

There are no options for this tool. Simply click on the object you want to select, and its layer is automatically selected for editing. If there are multiple objects in the layer, the object that you click on is the selected object.



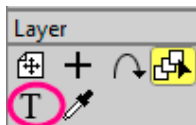
Layer Selector

Inserting Text and Word Balloons

Anime Studio allows you to enter text in your projects. While doing so, you have the option to automatically create a word balloon that encloses the text.

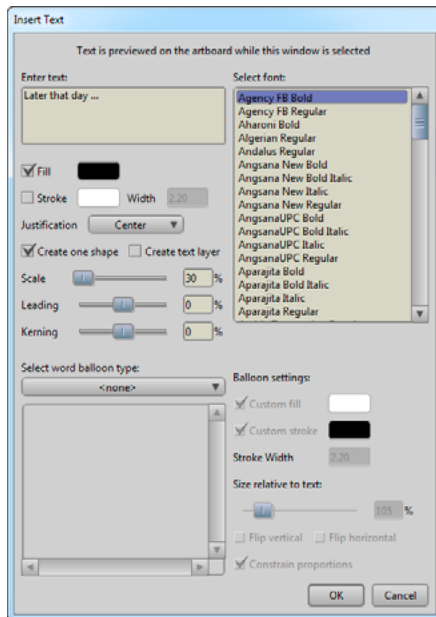
The following example explains how you can add text and a word balloon inside a project:

1. Choose one of the following to open the Insert Text dialog:
 - Click the **Insert Text** Tool, located in the Layer Tools section.



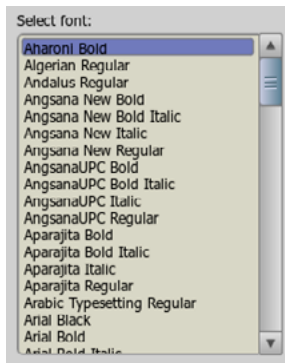
Insert Text

- Choose **Draw > Insert Text**
- Use the keyboard shortcut **COMMAND/CTRL+T**. The Insert Text dialog appears.



Insert Text Options

- The Select Font list displays all of the fonts on your system. Select the font that you want to use from the list.



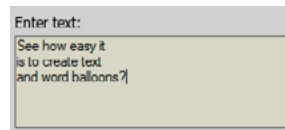
Select Font list

- Enter the text in the Text field. The project window will update as you type.



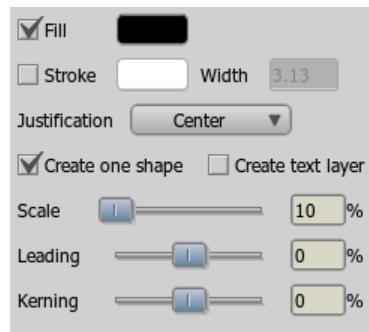
Word balloons will automatically resize to accommodate the text. If you want to break the text into multiple lines, you will need to press the Enter key where you want a line break to occur.

Chapter 7: Layer Tools




Enter your text in the text field.

- Use the remaining settings to set additional text properties as follows:



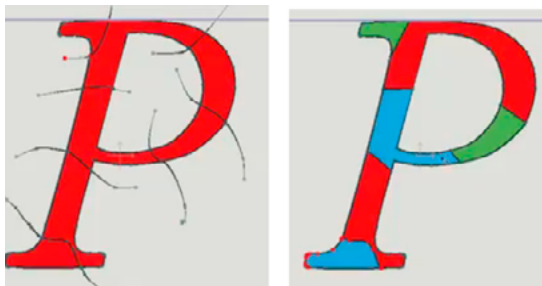
Select fill, stroke, and other font options.

- **Fill:** Check this option if you want your text to be filled with a solid color. Uncheck the option if you want your text to only use an outline stroke (described next). For filled text, click the color swatch to select the fill color.
- **Stroke:** Check this option if you want your text to have an outline. Click the Color swatch to select the outline color.
- **Width:** Enter the desired pixel width for the outline stroke in the **Width** field.
- **Justification:** Click the justification type that you want to apply to the text. Choices are **Left**, **Center** (the default), or **Right**.
- **Create One Shape:** With this option checked, your text object will be added to the currently selected layer. This text will be added as a vector object and will not be editable.
-  If you leave the Create Text Layer option unchecked, your text object can be manipulated just like anything else. This includes using any of the drawing tools to distort its shape, or to add new points in the middle of a character. This also means that in order to move or rotate a text object, you need to select all the points in the object. This is easy to do using the Select Points tool

- just click on the filled in area of the text to select all of it.



If your text is added as a vector object, you can use the Freehand tool and Delete Edge tool to create uniquely colored text. First, create your text as normal, making sure that there is a stroke on the text. Then use the Freehand tool (with its Auto Weld option on) to slice the text or letter up into shapes that you can color differently. Finally, use the Delete Edge tool to remove the lines that hang out from the edges of the text. See ["Freehand" on page 36](#) and ["Delete Edge" on page 41](#) for more information on how to use those tools.

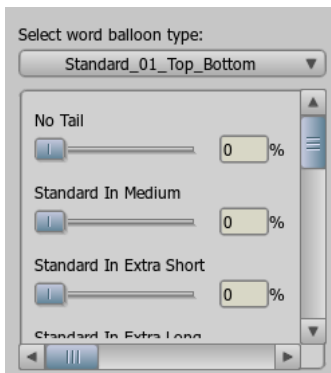


Create colorful text using the Freehand and Delete Edge tools with the Insert Text tool.

- **Create Text Layer:** With this option checked, a new text layer will be created, and you can easily edit the text afterward. To do so, open the Layer Settings dialog and click the Text tab to make your changes.
- **Scale:** Use the Scale slider to increase or decrease the text size, or enter a scale value in the Scale field.
- **Leading:** Use the Leading slider to adjust the spacing that appears between multiple lines of text. Move toward the left to decrease space,

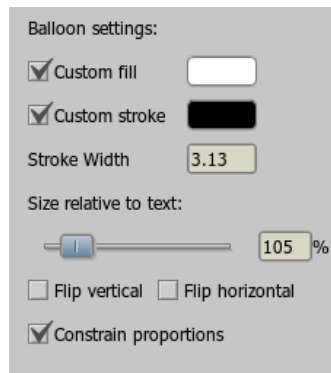
and toward the right to increase space. Negative values are also valid.

- **Kerning:** Use the Kerning slider to adjust the amount of space between letters. Move toward the left to decrease space, and toward the right to increase space. Negative values are also valid.
5. If you want to use a word balloon to enclose your text, select one of the word balloons from the **Select word balloon type** list. Otherwise, choose **<none>** if you do not want to use a word balloon.
 6. Additional word balloon options (custom for each word balloon type) appear beneath the selection. These options allow you to change the appearance of the word balloon. For example, you might find options that affect the appearance and placement of the balloon tail, or whether the outer edges of the balloon are smooth or cloud-like. Each of these balloon morphs are set to zero, initially. You can move the dials in any combination to change the appearance of the balloon. The preview window updates as you make your changes. The text will appear in your document, pre-filled with the current fill color and style, and it can be resized and positioned just like any other object.



Choose a word balloon type, if desired, and use the balloon morphs to customize its appearance.

7. Use the following settings to determine the color and size of the word balloon:

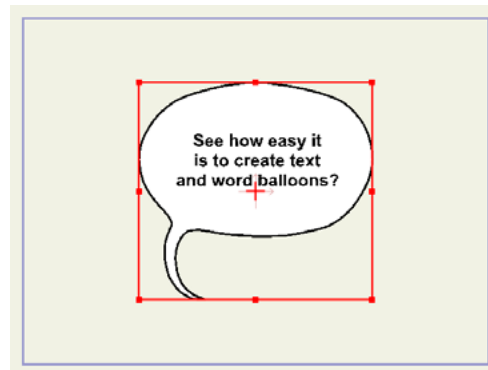


Choose a word balloon type, if desired, and use the balloon morphs to customize its appearance.

- **Custom Fill:** Check this option if you want to select a fill color for the word balloon. Click the color swatch to choose the desired fill color.
- **Custom Stroke:** Check this option if you want to select a stroke (outline) color for the balloon. Click the color swatch to choose the desired stroke color.

- **Stroke Width:** Enter the width of the stroke used for the word balloon in pixels.
- **Size Relative to Text:** Use this slider to increase or decrease the amount of white space that appears between the text and the outer edges of the balloon. Move the slider toward the left to decrease the amount of space, and toward the right to increase the amount of space.
- **Flip Vertical:** Check this option to flip the object vertically. For example, if the tail is on the bottom of the balloon by default, it will place the tail on the top.
- **Flip Horizontal:** Check this option to flip the object horizontally. For example, if the tail is on the left side of the balloon by default, it will flip the balloon so that the tail is on the right side.
- **Constrain Proportions:** Check this option if you want to keep an equal amount of white space around the width and height of the balloon. When unchecked, the height of the balloon will be closer to the text, and the width of the balloon will have more white space.

8. Press OK to add the text to your project.



Text added as a text layer.

Eyedropper

To use the Eyedropper, click on a shape to copy its parameters.

Hold the ALT key to push the current color.

- Press the COMMAND/CTRL key down while you click to pick up the properties of the underlying object. This

is not limited to vector layers. For example, if you have a Bone Layer active in the Layers palette but click over a gradient shape on the stage, the properties of the gradient shape will be copied to the clipboard in a Web color format. You will then be able to paste that property into the Color Picker to assign that color to a fill, stroke, or project background color.



Eyedropper Tool

Chapter 8: Special Tools

Anime Studio includes a number of special tools that are available in specific circumstances. These tools appear in the Special section of the tool palette when the conditions are met. The sections that follow describe how these special tools are uses.

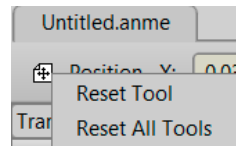


Anime Studio has a smart tool palette, which shows and hides tools based on their need.

The position of the tool shown in the screenshots may differ, depending on the selected layer in the Layers palette, and the current time in the timeline.



Click the tool icon in the properties bar to display a submenu. Choose Reset Tool to reset the current tool to its default settings. Choose Reset All Tools to reset all tools to their default settings.

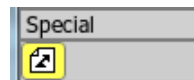


Reset tool options.

Switch Layer



This is a specialized tool for use with Switch layers only. This tool has no effect if you click and drag in the workspace. What it does is supply a popup menu in the tool options area that lists all the sub-layers of a switch group. You can change the active layer by selecting it from the menu.



Switch Layer

Tool Options



Switch Layer Options

- **Active Child:** Use this menu to select the active layer for the switch function

Image Masking

Many Anime Studio users do not use Photoshop or other similar programs, making it difficult to create images with transparent backgrounds. The Image Masking tool assists with this task. This tool helps you clear out and remove background areas from images that you import into Anime Studio.

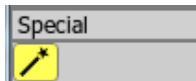
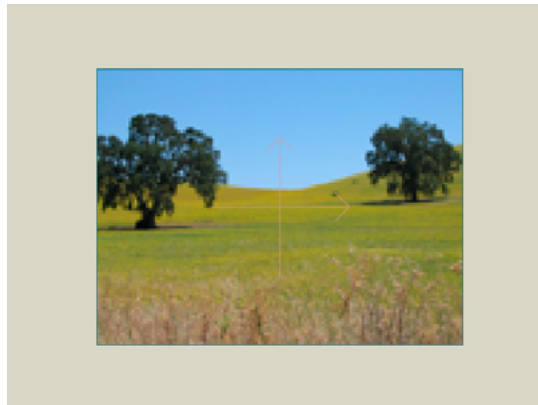


Image Masking tool

Tool Options

- **Clear Mask:** Click the Clear Mask button to remove all areas from the mask and restore the image to its unmasked state.



Import an image into your Anime Studio scene

After you import an image, select the Image Masking tool from the Layers section of the tool box. Click on an area that you want to remove from the background. Click and

drag left or right to control the sensitivity of the tool. Drag toward the left to decrease the sensitivity, and toward the right to increase it. Release the mouse button when you have masked out the desired area.



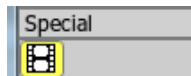
Click with the Image Masking tool to mask out areas of the image that you want to hide

Video Tracking

To use the video tracking feature, you need to have a movie file in your project. Either import a movie into an existing project or open a movie file from scratch. The following sections describe the process of how the video tracking feature works

Adding Tracking Points

Assume that you have imported a video, and you want to eventually add an object that will follow the position and rotation of a person's thumb and wrist. The first step of the process is to add tracking points that identify the two points you want to follow. The Primary tracking point controls the position of the object's origin. The Secondary tracking point controls the angle or scale of the object. To add the tracking points, select the Video Tracking tool from the Layer panel.



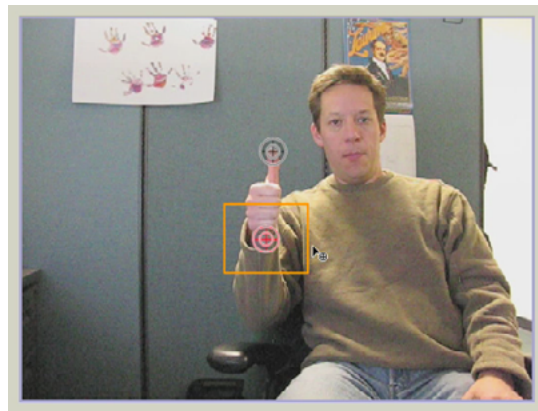
Video Tracking tool

Click on the first point you want to track. You can click, and then drag to position the point exactly where you want to place it. It is optional, but recommended, that you name the tracked point in the Tracker Name field of the status bar. For example, since we are tracking a thumb here, we name the tracking point **Thumb**.



The first tracking point is added to the thumb

Now we add the second tracking point for the wrist, and name it (appropriately) **Wrist**.

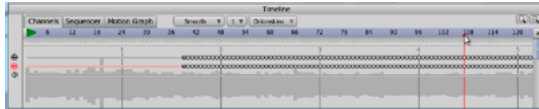


The second tracking point is added to the wrist

After you place your tracking points, make sure the Video Tracking Tool is still selected. Play the video back and watch the tracking points follow the points you selected. Playback runs a little slower during video tracking.

As you play the video back, you'll notice keyframes being added to the timeline. While the video is playing, watch for any problem spots in the way that the tracking

points follow the items you want to track. When you see a problem, don't worry ... there are ways to fix them!



After the tracking points are added, keyframes are generated in the timeline

Fine-tuning Marker Positions

You might notice some places where the tracking points seem to drift away from the marker, or stop following it entirely. If this happens, stop the video playback. Go back to the beginning of the movie. Zoom in more closely to the video and use the Video Tracking tool to reposition the markers that need to be adjusted.

Choose **View > Reset** to reset the zoom level of the video back to the default. Play the video again and watch for any other problems. Keep making adjustments until you are happy with the results. The following movie shows our markers after they have been adjusted.



Markers after they are adjusted (SWF file)

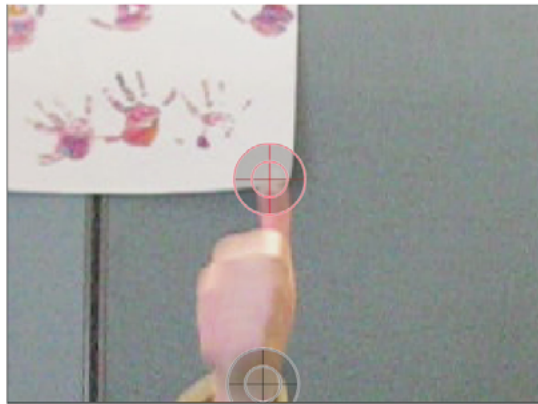
Re-syncing Tracking Points

You may also find instances where the tracking points go out of sync with the tracked object. The most likely cause for this is when the tracked area touches or passes over another area in the video that is very close in color. For example, when the tip of the thumb goes in front of the paper on the wall, there are similar colors in the paper that cause the tracking point to go out of sync with the thumb. Fortunately, there is a way to fix that. The next movie shows one of those problem areas.



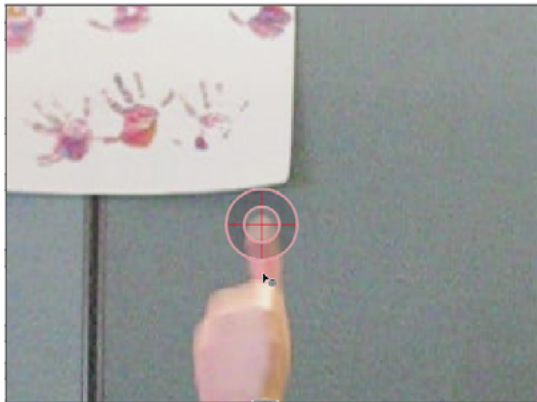
The tracking point loses focus after reaching the paper on the wall (SWF file)

To fix this type of problem, you scrub through the timeline until you find the point where it loses track. In the next figure you see the spot where the thumb appears to blend in with the paper. This is the area that causes the tracking point to lose sync with the thumb.



Find the point where the point loses focus

After you find the problem frame, advance ahead a couple of frames until you reach a point where there is more contrast. Then drag the tracking point to position it where it should be. When you press Play, the tracking point will continue tracking from there.



Advance the video to a clear spot and adjust the tracking point

Sometimes color similarities occur for a period that is longer than a couple of frames. For example, in our video there is a segment where the thumb passes across the face. This is a much larger area where there is very little color contrast between the tracked object and the area it passes over.

The solution here is slightly different. You can use interpolation to calculate the path between two good

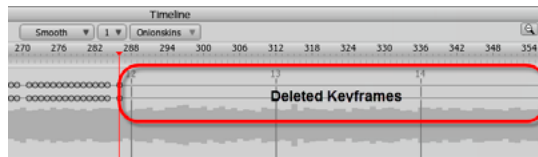
points. First, move back to find the last good point before the thumb crosses the face. Delete the keyframes from that point until the thumb passes across the face and reaches the other side.



You can use the **Animation > Clear Animation > From Layer After Current Frame** or **Animation > Clear Animation > From Document After Current Frame** commands to delete keyframes from the current frame to the end of the project.

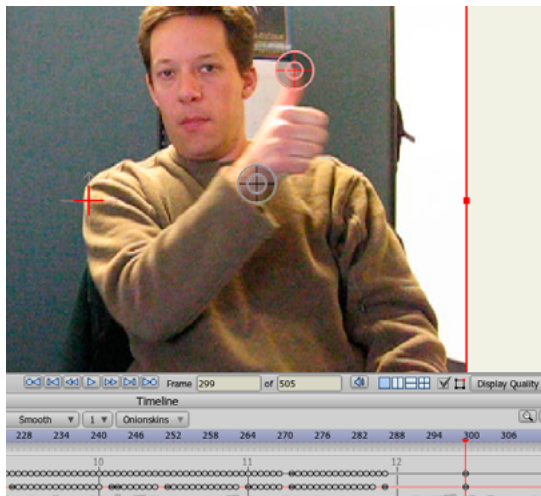


Here we move to the point just before the thumb passes over the face ..



... and we delete the keyframes that occur until the thumb reaches the other side of the face

Jump ahead in the video to a point after the thumb passes over the face and reposition the tracking point. When you play the video back, Anime Studio will interpolate the motion between the keyframes that are missing.

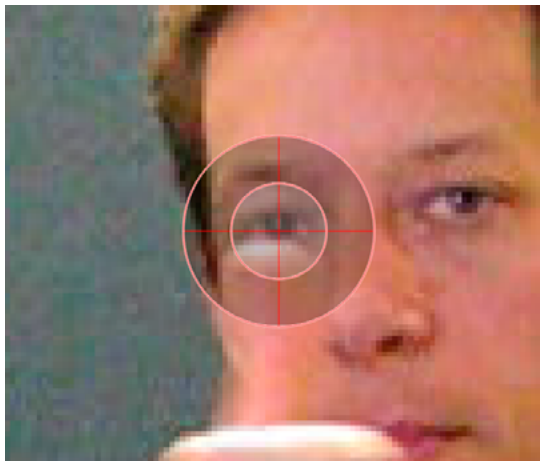


On the other side of the face, we reposition the tracking point to a good spot

Adjusting Tracking Point Sensitivity

When you add tracking points, you can change the sizes of the inner and outer rings to adjust the falloff. Click and drag on the edge of the rings to change the size. The inner ring defines the region that you are trying to track. For example, if you are trying to track an eye, adjust the inner ring so that it surrounds the eye.

The outer ring represents how fast the object can move. From one frame to the next, the outer ring represents the maximum distance that you want the object to move. If you have a fast-moving object you may need to increase the size of the outer circle for tracking. Expanding the search area too much can lead to further errors, so you want to keep it as narrow as possible. The default settings are generally sufficient for most cases.



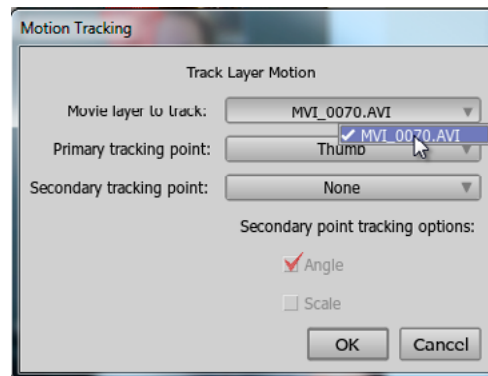
Two rings control the sensitivity of the tracking point

Assigning the Tracked Layer

After you set the two points on the object you want to track, you can then assign the layer that will track those points. In our example, we returned to Frame 0 and added

an exclamation point to a new layer. Now we want the exclamation point to follow the hand in the video.

To assign the layer that will track the points, choose **Animation > Track Layer to Video**. The Motion Tracking dialog lists the videos in your scene (in this case, there is only one).



Select the movie to track, then choose the primary and secondary tracking points

First we'll assign the Primary Tracking Point, which is associated with the origin point of the tracked layer. We

want the origin of the exclamation point to track the Wrist point. So, we select **Wrist** here and choose OK. When we play the result, the origin of the exclamation point (represented by the crosshairs) tracks the wrist.

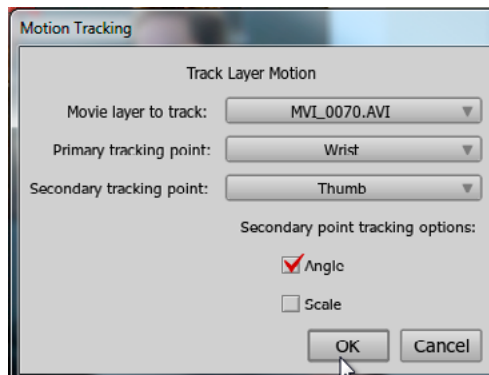


The crosshairs of the exclamation point, representing the origin, now follow the primary tracking point

The secondary tracking point is optional. You can use it to control either the angle or scale of the tracked layer. In our case, we want the thumb to control the direction of the exclamation point, so we select the thumb as the

Chapter 8: Special Tools

secondary tracking point. Then we check the option to control Angle.



The secondary tracking point can control the angle or scale of the tracked layer. We want the thumb to control the angle of the exclamation point

The following movie shows the results of our selections. Now when you play the movie, the origin of the exclamation point follows the wrist, and the angle of the exclamation point follows the angle line from the wrist (primary tracking point) to the thumb (secondary tracking point).



The exclamation point now follows the wrist, and points in the same direction as the thumb (SWF file)

Offsetting the Origin

You can use the Transform Points tool in the Draw panel to move the tracked object away from the origin. The origin still tracks to the two tracking points, but the object that you are tracking can be offset.



You can offset the object from its origin with the Transform Points tool


Once you have applied video tracking points to another layer, the two layers are totally independent. The tracking feature creates standard keyframes. You can edit, add or remove keyframes to the tracked object. You can also hide or delete the video layer that was used to initially create the tracking points and keyframes. The layer that was tracked to the video will still continue to follow the

motion. This allows you to use a video file as a reference whether or not you want to see the video in your final project.

Chapter 9: Camera and Workspace Tools

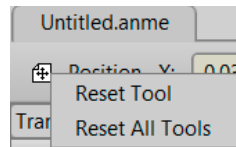
Camera Tools

The following tools let you move a virtual camera around in a scene. Although layers in Anime Studio are primarily 2D, Anime Studio's camera can be moved around in true 3D space. The camera tools affect all layers in the document, not just the currently active layer.

If a tool has the following symbol next to it: , then it can be used for animation - using the tool at different frames in the timeline will cause the object you adjust to change over time.



Click the tool icon in the properties bar to display a submenu. Choose Reset Tool to reset the current tool to its default settings. Choose Reset All Tools to reset all tools to their default settings.



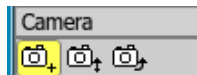
Reset tool options.

Track Camera

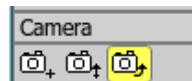


This tool moves the camera up and down, and side-to-side. By giving the project's layers different depth values, you can create parallax (depth) effects. Holding the **Shift** key while using the Track Camera tool will constrain the camera to only move vertically or horizontally. Holding the **Alt** key will move the camera forward and back.

If the **Show Path** box in the tool options area is checked, then the motion path for the camera will be displayed in the working area when this tool is active. This makes it easier to visualize and plan out the motion of the camera. (The camera's motion path is only visible when the Orbit Workspace tool has been used to view the scene from outside the camera.)



Track Camera Tool

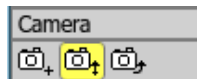


Roll Camera Tool

Zoom Camera



This tool zooms the camera in and out on the scene, just like the zoom control on a real camera. Technically, the Zoom Camera tool is changing the field of view angle (or focal length) of the virtual camera.



Zoom Camera Tool

Roll Camera



This tool rolls the camera side to side. Try tilting your head side to side, and you'll understand this tool immediately.

Workspace Tools

Change your view of the workspace

The last group of tools in the toolbar is always available, regardless of the current layer type or the current selected object. These are the Workspace tools, and are used to control your view of the project, but don't actually modify the project itself.

Pan Workspace

When the Pan Workspace tool is selected, you can click and drag in the working area to move the project side to side and up and down. Note that this isn't the same as moving the objects in your project - only your view of them is changing, not where they appear in the final image. A shortcut for the Pan Workspace tool is to click and drag in the working area using the right mouse button - it's a

quick way to pan, regardless of what tool is selected in the toolbar.



Pan Workspace Tool

Zoom Workspace

The Zoom Workspace tool is similar to the Pan Workspace tool: it moves your view of the project, without modifying the objects themselves. With this tool, dragging the mouse **left** or **right** zooms your view of the project in and out.

A shortcut for the zoom tool is to click and drag left or right in the working area using the right mouse button while holding down the shift key - it's a quick way to zoom, regardless of what tool is selected in the toolbar.



Zoom Workspace Tool

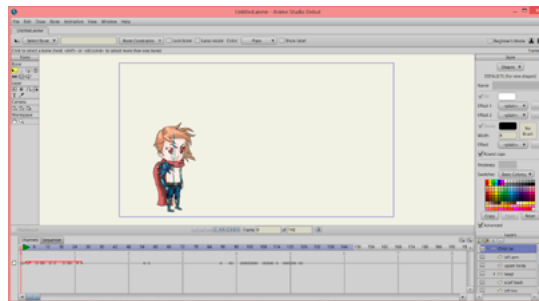
Anime Studio Windows

Chapter 10: Anime Studio's Main Window

Overview

The Anime Studio interface has various windows that are used for controlling different aspects of a Anime Studio project. In this chapter we'll briefly describe some general components of the Anime Studio project window.

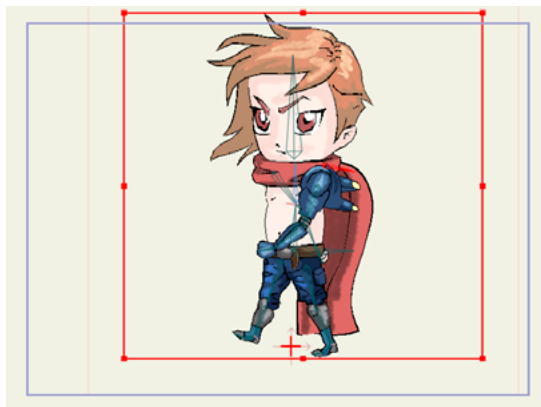
The more complex parts of the Anime Studio interface, such as the Layers window, have their own chapters that follow this one. Although this chapter will describe how the main window works, it won't go into detail about creating a drawing or animation.



Anime Studio Debut interface

Working Area

Most of the Anime Studio project window is taken up by the working area. This is the region where you will create and view your drawings and animations. In every project, even an empty one, two items will be displayed in this area. The first is a cross marking the center of the currently active layer. The second is a blue rectangle that indicates the visible region of the project. Only objects that are within this rectangle will appear in your final animation.



Working Area

Although every project has a fixed image size (for example 640x480 pixels), the working area is basically an endless flat space on which you can draw and animate. The blue visibility rectangle mentioned above indicates the actual image area for the project. While working, you may want to zoom in or out to see more or less detail in your project. A quick way to do this is by using your right mouse button. By dragging the right mouse button in the

working area, you can move around from side to side. If you hold down the shift key while right-clicking and then drag left or right, you can zoom in and out. If you want to restore a reasonable overall view in the working area, press the Escape or Home keys, or choose Reset from the View menu (see “[Chapter 24: View Menu](#)” on page 272).

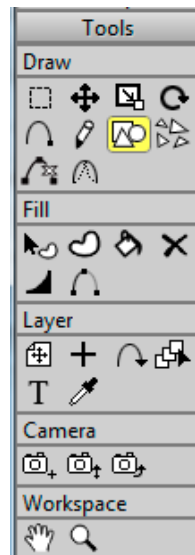
The background of the working area is usually just a blank color, but if you drag an image file into the working area, it will appear in the visibility rectangle. This is a helpful feature meant to allow you to trace the image with the drawing tools.

The **real** work that happens in the working area is not covered here, but is described in the sections “[Anime Studio Tools](#)” on page 24, and “[Anime Studio Windows](#)” on page 119.

Toolbar

The toolbar to the left of the main Anime Studio window is where you select which tool you want to work with. The available tools will change depending on whether you’re currently animating, which objects are selected, and what type of layer is currently active. The purpose and use of each tool is described in the following chapters:

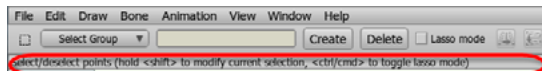
- **Draw Tools:** See “Chapter 3: The Draw Tools” on page 25
- **Fill Tools:** See “Chapter 4: Fill Tools” on page 48
- **Bone Tools:** See “Chapter 5: Bone Tools” on page 65
- **Layer Tools:** See “Chapter 7: Layer Tools” on page 87
- **Camera Tools:** See “Chapter 9: Camera and Workspace Tools” on page 116
- **Workspace Tools:** See “Chapter 9: Camera and Workspace Tools” on page 116



Anime Studio Debut Tools (some tools not shown)

Status Bar

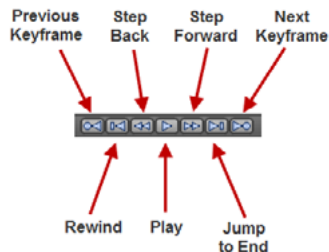
The status bar along the top of the Anime Studio window displays a short description of the currently active tool in the toolbar. If you don't know what a tool does, the best thing is to read this manual. However, if you just need a quick reminder, the status bar can be helpful.



Status Bar

Playback Buttons

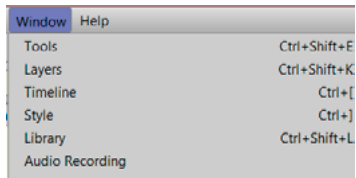
Near the bottom-left of the main Anime Studio window are a set of playback buttons that allow you to play/stop/rewind/etc. your animation.



Playback controls

Docking and Undocking Windows

You can dock and undock the windows that appear at the sides and bottom of the Anime Studio interface to maximize the area that the document window uses. The windows that you can dock and undock appear in the upper portion of the Windows menu as shown in the following figure:



Playback controls

Windows that are normally docked (the **Tools**, **Layers**, **Timeline** and **Style** windows) will become undocked if you choose the Window menu command associated with that window. Choose the command again to redock the windows in their default space.

Windows that are normally hidden (Actions, Library, and Audio Recording) will open undocked when choosing the command. Choose the respective command again to close the window.

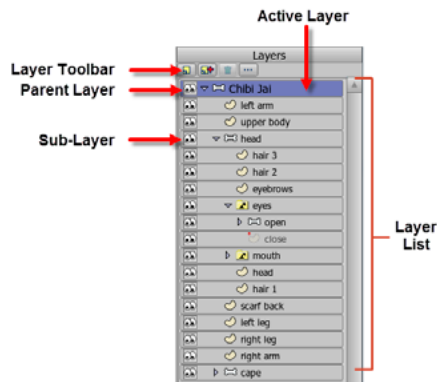
Chapter 11: Layers Window

An Anime Studio document is composed of **layers**, each of which can be independently edited and animated. Layers can be thought of as transparent sheets of plastic. You can draw separately on each of these sheets, and the final picture is the composition of all the sheets stacked on top of one another.

Layers can be added, removed, copied, and re-ordered. The Layers window is where all these operations take place in Anime Studio, and is the topic of this section.

Overview

The Layers window has two sections of interest. As seen below, these consist of the toolbar and the layer list.



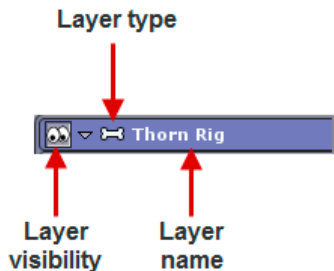
The Layers window

The Layer List

Most of the Layers window is taken up with the layer list. This is a vertical scrolling list of all the layers in the document. The layers are stacked in order from bottom to top. That is, when the project is displayed, the lowest layer in the list is drawn first, followed by the second from the bottom, and

so on up to the top. When two layers contain objects that overlap, this ordering determines which object is in front and which is behind.

Each layer is represented in the list with an entry that looks something like this:



A single layer in Anime Studio

Only one layer can be edited at a time in the Anime Studio working area. The layer currently selected for editing (the active layer) is displayed in a highlighted color. To select a different active layer, just click on its entry in the layer list. A layer's entry provides you with three pieces of information: what type of layer it is, its name, and whether the layer is visible.

Chapter 11: Layers Window

At the left side of a layer's entry in the list is a visibility control, which controls whether a layer is visible or not. If a pair of eyes is visible in this box, any objects drawn in the layer will appear in the main Anime Studio window, as well as in any rendering of the project. If you click this box, the layer will turn invisible and will not appear in the main Anime Studio window. This can be a convenient way to remove clutter in the main window when you don't need to see all the layers at once. Also, only visible layers will appear when you render a view of the project or export an animation - you can generate test movies much quicker if you turn some layers invisible that don't involve what you're currently working on. Note: the visibility box of the currently active layer behaves differently. The currently active layer is always visible (how could you edit it if it wasn't?), and clicking its visibility box (while holding the **Alt** key) will turn all the other layers at the same level visible or invisible.

To the right of the visibility control is an icon that indicates what type of layer each entry in the layer list is. The different types of layers include vector, image, group, bone, switch, particle, 3D, and note layers.

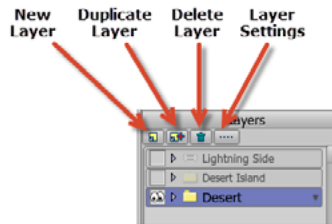
Certain types of layers act as groups, and can contain other layers within them. (You can think of them like folders on your hard drive.) These layers have a triangle on their left side. Clicking this triangle opens and closes these group layers, allowing you to access or hide the sub-layers they contain.

Layers can be re-ordered simply by dragging one layer above or below another layer. Just click and drag the layer you want to move - you will see a red insertion bar indicate where the layer will be placed when you drop it. When the insertion bar appears at the location you choose, just drop the layer and you're done. You can also use this method to drag sub-layers into or out of group layers.

The last thing you can control in the layer list is the property set of any layer. By double-clicking a layer in the list, a dialog will appear with various options controlling the appearance and behavior of the layer. This dialog is described in the Layer Settings section below.

Layer Toolbar

At the top of the Layer panel is a toolbar that provides several layer operations. The buttons in the toolbar are described below:



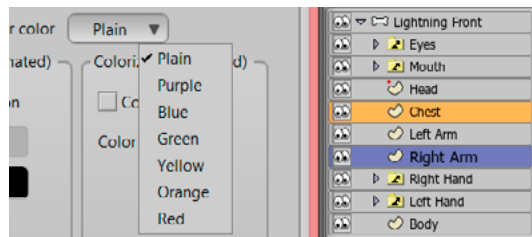
Layer Toolbar

- **New Layer:** Adds a new, empty layer to the project. A popup menu allows you to choose the type of layer you want to add. The new layer is placed directly above the current active layer.
- **Duplicate Layer:** Makes a copy of the current active layer and adds it to the project. This new copy is placed directly above the current active layer. If you duplicate a group layer, all of the sub-layers inside it will be duplicated also.
- **Delete Layer:** Deletes the current active layer. This operation cannot be undone, so you will be asked to verify if this is really what you want to do.

- **Layer Settings:** This command brings up a dialog with various controls to modify the layer's appearance and behavior. The next section, Layer Settings, goes into detail about these options. The Layer Settings dialog can also be invoked by double-clicking the current active layer in the layer list.

Using Layer Colors

If you have many different layers in your Layers window, you can assign colors to them to help find specific content more easily. To do so, double-click the layer in the Layers window to open the Layer Settings dialog. In the General tab, choose a color for the layer from the Layer Color drop-down selector. The layer will then be displayed in the color that you choose.



Choosing a layer color

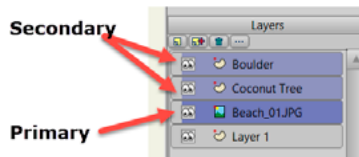
Chapter 12: Layer Settings

The Layer Settings dialog can be invoked either by double-clicking a layer in the layer list, or by selecting a layer, then clicking the Layer Settings button in the layer toolbar. The various controls are grouped into tabs that we'll describe in order.

Click the **Apply** button to apply changes in settings. The Layer Settings window will remain open so that you can make additional changes.

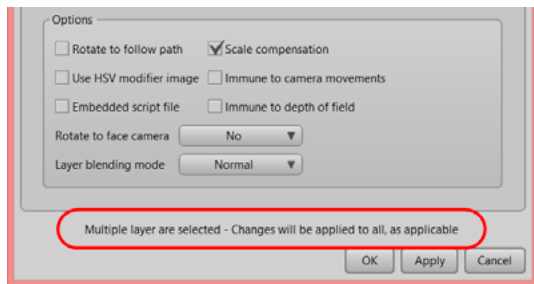
Editing Multiple Layers

When you select a layer in the Layers palette, you can view the settings for that layer in the Layer Settings dialog. In Anime Studio 10, you can use the Shift or Command/Ctrl keys to make multiple selections in the Layers palette. The layers that you select don't have to be the same type of layer. For example, you can select an image layer and a vector layer as shown in the following figure:



Use the Shift or Command/Ctrl keys to select multiple layers in the Layers palette.

When multiple layers are selected, the last layer that you select becomes the primary layer. The primary layer is displayed in a slightly darker shade in the layers palette. Secondary layers are displayed with a slightly lighter colored highlight. In addition, a message appears at the bottom of the Layer Settings dialog to indicate that multiple layers are selected.



The Layer Settings window displays a message when multiple layers are selected.

The following rules apply when you are making changes to multiple selected layers:

- If different layer types are selected, the Layer Settings window will only display the tabs that apply to the primary layer. For example, if your primary layer is a vector layer but you have image layers as secondary layers, the Image tab will not be displayed. However, you will be able to edit settings that are common to image and vector layers in the Vectors tab.
- When you change a setting that is common to all selected layer types, those common changes will be applied to all of the selected layers when you click the Apply or OK button in the Layer Settings dialog. In other words, you can change the Blur or Opacity setting in the Vectors tab, and then apply that change to all of the layers in the selection, whether they are vector or image layers.
- If you make settings that are specific to the primary layer type, they will not be applied to sublayers of a different type. For example, if your primary layer is an Image layer and you make changes in the Images tab, those changes will not be applied to the vector layers in your selection.
- Where settings are grouped, any change to one of those grouped settings will cause all settings within that group to change on all of the selected layers. For example, the Outline section of the General tab groups three settings together: **Outline On**, **Width**, and **Color**. If you change the outline color, Anime Studio will also update the outline state (on or off) and outline width to all of the layers when you click **Apply** or **OK**. Settings are grouped as follows:
 - **Outline** ("**General Tab**" on page 131): Outline On, Width, and Color.

Chapter 12: Layer Settings

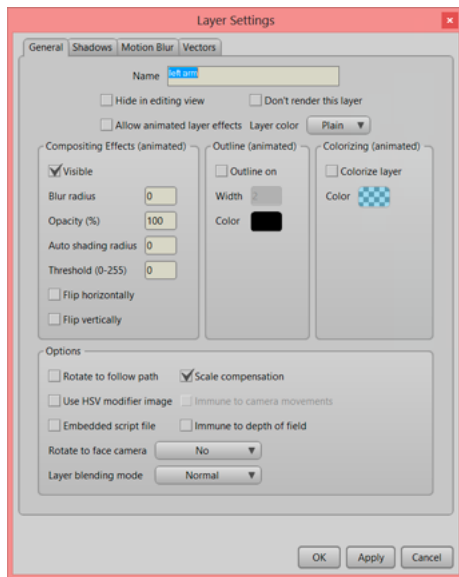
- **Colorizing** ("General Tab" on page 131): Colorize Layer, and Color.
- **Layer Shadow** ("Shadows Tab" on page 141): Shadow On, Offset, Blur, Shadow color, Shadow threshold, Expansion, and Shadow direction.
- **Layer Shading** ("Shadows Tab" on page 141): Shading On, Offset, Blur, Shading threshold, Shading color, Contraction, Inverted, and Shading direction.
- **3D Shadow** ("Shadows Tab" on page 141): Perspective shadow on, Blur, Shadow threshold, Scale, Shear, and Color.
- **Motion Blur** ("Motion Blur Tab" on page 145): Motion blur on, Frame count, Frame skip, Start opacity, End opacity, and Blur radius.
- **Depth Sorting** ("Depth Sort Tab" on page 154): Sort layers by depth, Sort by true distance, Enable animated layer order.
- **Toon Settings** ("Image Tab" on page 155): Toon effect, Edge level, Gray level, Black level, Saturation, Lightness, Quantization.



If you make any settings in the Image tab that apply to videos, they will only be modified in secondary image layers that have video files as their sources.

General Tab

This tab is available for all layer types, and controls general layer properties.



General Layer Settings

- **Name:** This field allows you to change the name of the layer. You can type in any name for the layer you want

Chapter 12: Layer Settings

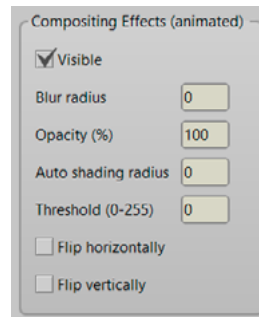
here, and the name will appear in the layer list after you click the OK button. Good names make working with large projects much easier. Examples of layer names might be **Background**, **Body**, or **Head**.

- **Hide in editing view:** Turn on this checkbox to hide the layer while editing. The layer will still appear in rendered output, but will be invisible in Anime Studio's edit view. This can be useful to reduce clutter and improve performance. Things you might consider hiding in the editing view are background details, texture and detail layers, or special effects like particle layers. Note that if a hidden layer is the currently active layer, it will temporarily un-hide itself so that you can edit whatever it contains.
- **Don't render this layer:** If this box is turned on, then the layer will not appear in any rendered/exported movies. This option is usually used for some kind of helper layer. For example, you might draw a layer with some guide lines to help you draw and animate a scene, but you don't want those guides to appear in the final output. Note layers have this option turned on by default.
- **Allow animated layer effects:** When checked allows you to animate layer effects by varying settings through the timeline. When unchecked, layer effects do not animate.

- **Layer Color:** Layer colors are used to help you categorize the content in your project using colors of your choosing. Use the Layer Color selector to choose a color for the current layer. **Plain** will display the layer in the normal Anime Studio interface color. Other choices for categorizing your layers are **Purple, Blue, Green, Yellow, Orange, and Red.**

Compositing Effects

This group of controls allow you to change certain layer properties over time. When you modify any of these at a frame greater than 0, you will add a keyframe to the corresponding layer effects channel. For example, if you go to frame 1 and uncheck **Visible**, then go to frame 20 and re-check Visible, that layer will not appear in the final animation until frame 20.



Compositing Effects

- **Visible:** Controls whether a layer is visible in the final output. It is important to note that this checkbox is totally independent of the visibility box displayed in the layer list: **these are two separate notions of visibility, and don't affect each other at all.** The visibility control in the layer list is meant for your editing convenience: you can turn one layer off while you work on another. The visibility checkbox in this dialog is meant to allow certain effects during an animation. For example, if you had a layer with a drawing of a glowing lightbulb, you could uncheck the visibility of this layer at frame 1,

then turn it on at frame 10, off at frame 20, on at frame 30, etc. to create the effect of a blinking light.

- **Blur radius:** Lets you apply a blur (in pixels) to an entire layer to simulate such effects as camera focus. The blur can be animated over time to make a layer look like its coming in and out of focus. Decimal values are allowed to provide smoother transitions during animation.
- **Opacity:** Allows you to modify the transparency of an entire layer. An opacity value of 100 will not affect the layer at all, while a value of 0 will make it totally transparent. By changing the value from 0 at frame 1 to 100 at frame 10, the layer will seem to gradually appear out of nowhere, which in some cases is more desirable than the type of on/off visibility provided by the **Visible** checkbox.
- **Auto shading radius:** Allows you to simulate 2D ambient occlusion effects. Double-click the desired layer, or highlight a layer in the layers panel. Turn the Auto Shading option on and set the radius to a value other than zero. A good starting point is somewhere between 8 and 16 pixels.



Without Auto Shading



With Auto Shading

- **Threshold:** Works in conjunction with blur, and can be used to produce smoother transitions in corners. The more an object is blurred, the more the threshold will have an effect. The blur is computed first, and then the threshold is added on top of it to smooth out the overall shape.

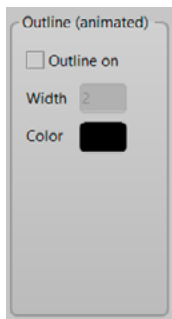


The threshold is applied to the RGB values at whatever you add in the threshold field. A value of 128 is a midpoint value. If you end up with unusual colors after applying the threshold, you can use Colorizing to overlay a color on the layer. For more information about colorizing, see ["Colorizing" on page 137](#).

- **Flip horizontally** and **Flip vertically:** Clicking these boxes flips the entire layer in the direction specified. (If the layer is a group layer, then the sub-layers inside it get flipped as well.) This can be convenient in the case where you want to duplicate a layer and have the second copy face the first one as a mirror image.

Outline

The General Tab of the Layer Settings dialog displays the following options for outlines:



Outline Options

- **Outline on:** Check this option to create an outline around the objects on the layer.
- **Width:** Set the desired width of the outline, in pixels.
- **Color:** Click to set the color of the outline.

You can add an outline to a layer by enabling the option in this section and specifying the width and color of the outline.

You can set separate colors and widths for each layer to add nice effects to your drawings. If you set just one color

Chapter 12: Layer Settings

and width on a bone group, but not on each layer of a bone group, the layer outline will only be applied to the outline of the character (and not each individual part).

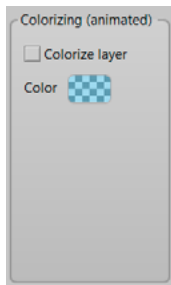
After you specify your outline parameters, you will need to preview your drawing with the File > Preview command, or use the shortcut Cmd+R (Mac) or Ctrl+R (Windows).



With 10 pixel blue outline around the bone group

Colorizing

The Colorizing section allows you to overlay a color on the selected layer. The options are as follows:



Colorizing Options

- **Colorize layer:** Check this option to apply a color overlay to the selected layer.
- **Color:** Click to set the overlay color and properties.

You can use the Colorizing feature to eliminate unwanted or objectionable colors that occur after you apply thresholding to objects on a layer (see "[Compositing Effects](#)" on page 133 for information about the Threshold

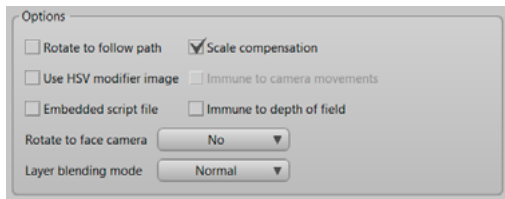
settings). The figure shown below shows several objects on a layer which have a blur setting applied (top). Thresholding is added to soften the shapes between the objects. After rendering, you may see unusual colors (middle) because the threshold is applied to the R, G, and B values in the original object color. To fix this, choose the Colorize layer option and select your overlay color. Render again to see the final result (bottom).



Original objects (top); threshold applied (middle); with color overlay (bottom)

Options

The Options section of the General Properties tab provides the following options:



General Options

- **Rotate to follow path:** When this checkbox is turned on, the layer will automatically rotate to follow its direction of movement. (Specifically, the up direction will turn to follow the direction of layer translation.) This can be useful for creating things like flowing arrows that need to point in their direction of movement.
- **Scale compensation:** When this box is checked (as it is by default), and you scale an entire layer larger or smaller, the lines in the final rendered output will automatically get thicker or thinner so that they retain their relative weight in the overall image. Also, layer

effects like blurs and shadows will become larger or smaller to match the scale of the layer.

- **Use HSV modifier image:** This checkbox lets you use an image file to distort the colors of the layer. Sometimes you may want to do this to break up the solid colors in your project and make it look less computerized. The exact behavior of this feature is difficult to explain. The best way to try it out is to use one of the HSV modifier images included with Anime Studio. These images should be pretty close to 50% gray. Other images may produce bizarre, unexpected results. Feel free to experiment - you can always turn off this checkbox if you don't like the results.
- **Immune to camera movements:** Sometimes you may want to make some layers ignore camera movements. For example, certain backgrounds or title or logo layers you may want to stay in one place on the screen even while you move the camera around.
- **Embedded Script File:** Allows you to attach a lua script to a layer. When you play it back in the timeline or render a document, the script is executed to go with that layer.
- **Immune to depth of field:** The depth of field function (in the Project Settings dialog) lets you simulate the

blurring of objects with different distances from the camera. This option allows you to turn off this effect for any particular layer.

- **Rotate to face camera:** In previous versions of Anime Studio, a layer would pivot only on the Y axis and face the center of the camera. In Anime Studio 9.5.2 or later, you can choose different pivot axes, and the layer can face the camera center or the image plane. This can be useful when using Anime Studio's 3D camera - especially for scenery-type objects. Trees, for example, that always face the camera can save you a lot of work. Choose a rotation option from the popup menu:
 - **No:** Turns off the Rotate to Face Camera feature.
 - **Pivot X Axis:** Rotates the layer on its X (horizontal) axis as best it can to make the layer's Z axis point at the camera.
 - **Pivot Y Axis:** Rotates the layer on its Y (vertical) axis as best it can to make the layer's Z axis point at the camera.
 - **Free Pivot:** Rotates the layer on both its X (horizontal) and Y (vertical) axis as best it can to make the layer's Z axis point at the camera.

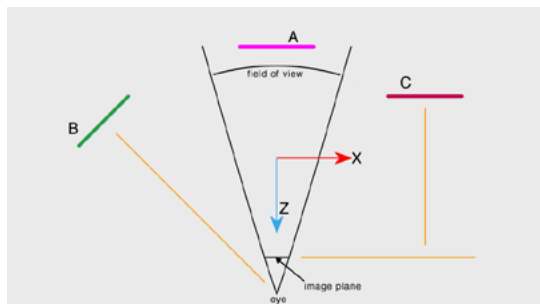
- **Face Image Plane X Axis:** Rotates the layer on its X (horizontal) axis as best it can to keep the layer parallel to the camera plane.
- **Face Image Plane Y Axis:** Rotates the layer on its Y (vertical) axis as best it can to keep the layer parallel to the camera plane.
- **Face Image Plane Free Rotate:** Rotates the layer on both its X (horizontal) and Y (vertical) axis as best it can to keep the layer parallel to the camera plane.



In the diagrams that appear below, the X and Z Axes are shown in red and blue. The Y axis points straight up, so being that we are looking at the scene from the top, the Y axis points at you. The black pyramid represents the camera view, with the point of the pyramid representing the eye. An image plane appears in front of the camera. This image plane is like film, and represents where the rendered image gets focused.

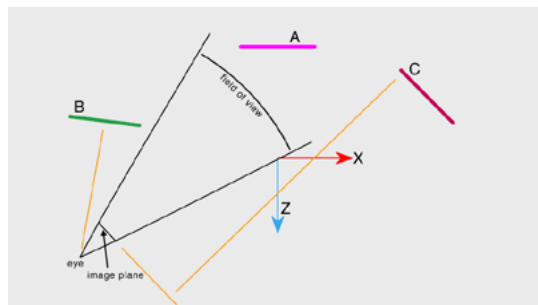
*There are also three layers in the diagrams: Layer A is not set to face the camera. Layer B pivots on the Y axis so that it faces the center of the camera. Layer C is set to **Face Image Plane Y Axis**.*

In the first image, the camera is in its default position and rotation. Layer A, which has the Rotate to Face Camera feature off, will not move when the camera is moved. Layer B, which is set to rotate on the Y axis, turns to face the camera. Layer C, which is set to rotate with the image plane, is rotated the same as the image plane.



An Anime Studio scene, viewed from the top.

When the camera is moved to the left of the scene, and rotated to face the center, the image plane also rotates to the same angle. Notice now that Layer A remains in the same position because Rotate to Face Camera is off. Layer B, which is set to rotate with the Y axis of the camera, rotates to face the new position of the camera eye. And Layer C, which is set to rotate with the Y axis of the image plane, rotates in parallel with the image plane.



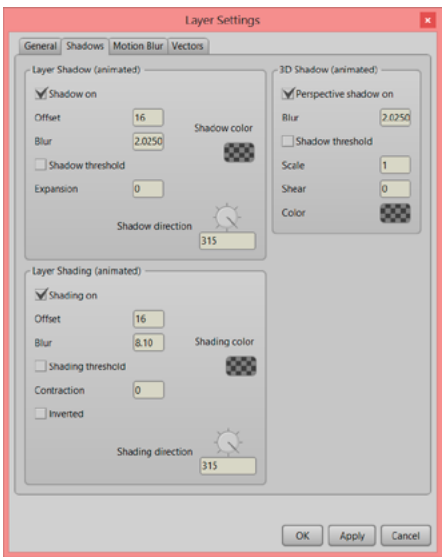
An Anime Studio scene viewed from the top, with the camera moved to the left side

- **Layer blending mode:** Normally, layers are composited on top of each other simply according to the

transparency of each layer. The layer blending mode popup lets you select a different blending mode for each layer. This can be very useful for simulating shading and lighting effects.

Shadows Tab

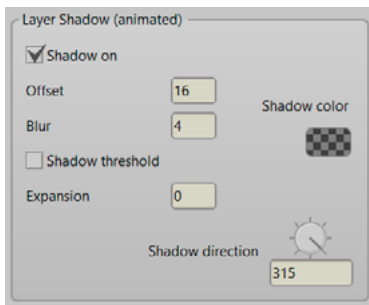
The controls in this tab allow you to apply automatic shadows and shading to an entire layer.



Shadows Layer Settings

Layer Shadow

This section lets you apply a drop-shadow effect to a layer. The options are:



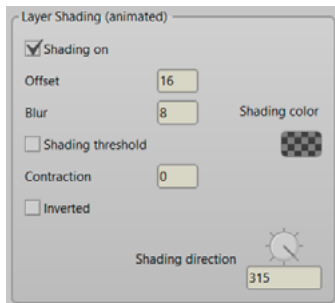
Layer Shadow options.

- **Shadow On:** Checking the **Shadow on** checkbox will make all objects in the layer cast shadows on the layers underneath.
- **Offset:** Controls how far the shadow appears from the actual objects. A larger offset makes objects appear higher up above the layers below them.
- **Blur:** Determines how hard or soft the edges of the shadow appear.
- **Shadow Threshold:** Works in conjunction with blur, and can be used to produce smoother transitions in corners. The more an object is blurred, the more the threshold will have an effect. The blur is computed first, and then the threshold is added on top of it to smooth out the overall shape.
- **Expansion:** Allows you to expand the reach of the shadow. This can be useful for halo-type effects. Try an Offset of 0, Blur of 8, and Expansion of 8.
- **Shadow Color:** Clicking on the "Shadow color" swatch lets you change the color of the shadow that is being cast. You can also modify the transparency of the shadow with this control.
- **Shadow Direction:** Controls the direction the shadow is cast. Just drag the knob in circles to change the direction of the shadow.

Layer Shading

This section is similar to the "Layer Shadow" section above. However, instead of producing a shadow effect **behind**

the layer, these controls let you apply a shading effect on top of the layer.



Layer Shading options.

- **Shading On:** Checking the “Shading on” checkbox will make all objects in the layer appear shaded, giving them a rounded edges effect.
- **Offset:** Controls how far inside the layer the shading appears. A larger offset makes objects appear to have more “rounded” edges.
- **Blur:** Determines how hard or soft the edges of the shading appear.

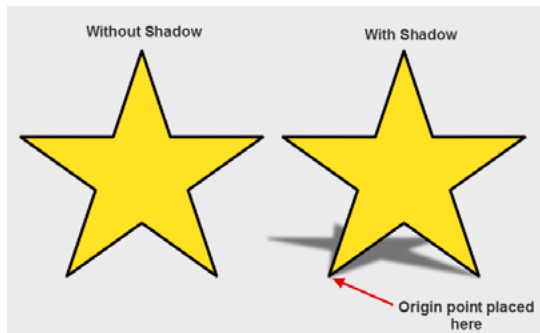
- **Shading Threshold:** Works in conjunction with blur, and can be used to produce smoother transitions in corners. The more an object is blurred, the more the threshold will have an effect. The blur is computed first, and then the threshold is added on top of it to smooth out the overall shape.
- **Contraction:** Allows you to pull the shading further into the center of the layer.
- **Inverted:** Inverts the shading effect so that the object looks like it has a rim highlight.
- **Shading Color:** Clicking on the “Shading color” swatch lets you change the color of the shading that is applied. You can also modify the transparency of the shading with this control.
- **Shading Direction:** Controls the direction the shading appears. Just drag the knob in circles to change the direction of the shading.

3D Shadow (Perspective Shadows)

Anime Studio allows you to easily create perspective shadows for the objects in your scene. Select a layer from the Layers window and open the Layer Settings dialog. Click the Shadows tab, and adjust the settings in the 3D

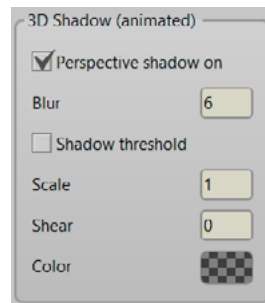
shadow area. You can animate this feature by applying different settings at different points in the timeline. You will not see the shadow until after you render the current frame, or all or part of a movie.

The position of the shadow is determined by the Set Origin tool in the Layer section of the toolbox. When you set a perspective shadow, pay attention to the location of the origin of the object. The shadow is cast from the origin point. The origin represents the ground point, so you can position it to make the object look as though it is resting on the ground, or as if the object is floating in the air.



Position the origin point at "ground" level.

The settings for perspective shadows are as follows:



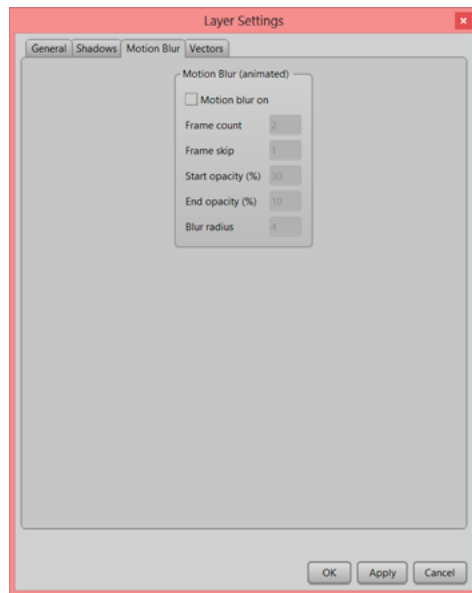
3D Shadow options.

- **Perspective Shadow On:** Check this button to turn Perspective Shadows on. Uncheck it to turn Perspective Shadows off.
- **Blur:** Sets the amount of blur on the perspective shadow. Higher values create a softer shadow.
- **Scale:** Controls the "depth" of the shadow. Higher values make the shadow seem more elongated, while lower values make the shadow shorter.

- **Shear:** Allows you to control the slant of the shadow (the direction that the light source is coming from).
- **Color:** Allows you to select a color for the shadow. Default color is black.

Motion Blur Tab

The controls in this tab control the motion blur effect for this layer. Motion blur can be turned on and off during the course of an animation.

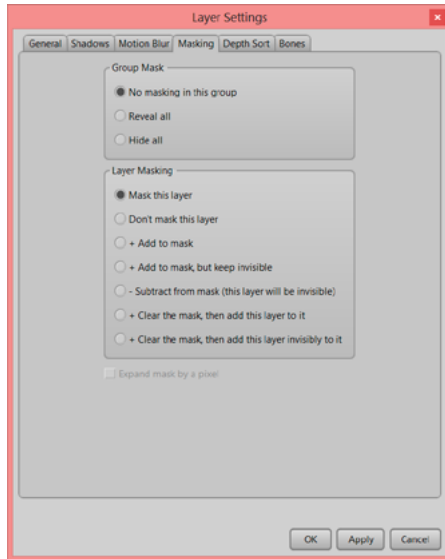


Motion Blur Layer Settings

- **Motion Blur On:** Checking “Motion blur on” turns on the effect. The default settings work pretty well for a basic motion blur effect.
- **Frame Count:** Controls how many copies of the layer should trail behind itself. The higher this number, the longer it will take to render your animation. Sometimes a high number may be used for an exaggerated anime or cartoon effect.
- **Frame Skip:** Controls the separation between blur frames. A larger number will cause the blur effect to trail farther out behind the current position.
- **Start Opacity** and **End Opacity:** Control how the blur fades away behind the layer. Generally, a motion blur effect will fade a bit as it trails behind the layer. For some special effects, however, you may not want the motion blur to fade at all. In those cases, set both values to 100 to keep the motion blur completely opaque.
- **Blur Radius:** Controls the radius (in pixels) of the motion blur effect.

Masking Tab

This tab is used to control layer masking. Layer masking controls the visible region of a layer - objects in a layer that are not within the visible region of the mask will not appear in the final output. This tab is available when a group or bone layer is selected.



Masking Layer Settings

If the layer is a group or bone layer, then the following options are available:

No masking in this group: Means that no masking will occur in this group.

- **Reveal all:** Means that masking is on, and by default all sub-layers will be fully visible.
- **Hide all:** Means that masking is on, and by default all sub-layers will be invisible (this is the most common option when using layer masking).

All other layers inside a group will have the following options for layer masking:

- **Mask this layer:** Clip this layer against the current mask.
- **Don't mask this layer:** Skip all masking operations for this layer.
- **+ Add to mask:** Add this layer to the mask. Any higher layers will be visible wherever this layer is visible.
- **+ Add to mask, but keep invisible:** Add this layer to the mask, but don't show it in the final output.
- **- Subtract from mask:** Use this layer to cut a hole in the current mask.
- **+ Clear the mask, then add this layer to it:** This makes the mask identical to the transparency value of the current layer.

- **+ Clear the mask, then add this layer invisibly to it:**
- **Exclude Strokes:** Check this option to exclude outlines from the mask.
- **Expand mask by a pixel:** Adds an additional pixel around a layer mask.



*The masking controls are simple but powerful options that can be used for all kinds of creative tricks. The best way to explain these is with a hands on example. See “**Tutorial 2.7: Layer Masking**” on page 96 in your Anime Studio Tutorial Manual.*

Masking Tips and Tricks

When setting up masking in a group, the best approach is to first set up the mask, then set up the objects to be masked. The bottom-most layers should define the mask by either adding to it or subtracting from it. Then the layers above that should be masked against the defined mask.

For masking to be fringe-free, try to follow these guidelines:

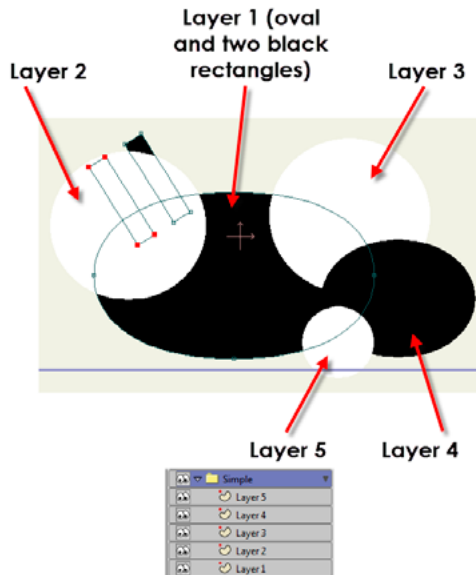
- Masking should only increase in a one-way direction. The alpha channel must increase monotonically.

- Use additive masks only (use Hide All, instead of Reveal All)
- Don't use any of the following modes for child layers in the group:
 - Subtract from mask
 - Clear this mask then add this layer invisibility to it
 - Don't Mask This Layer (unless all other layers in the group above this one also use Don't Mask This Layer)
 - Exclude Strokes (unless all layers in the group above are set to Masked)

The following examples demonstrate some do's and don'ts in masking techniques.

Simple Masking (Produces No Fringing)

This example starts with a group that contains five layers. Each with a different shape. This group renders with no fringe because it follows the rule of only adding to a mask.

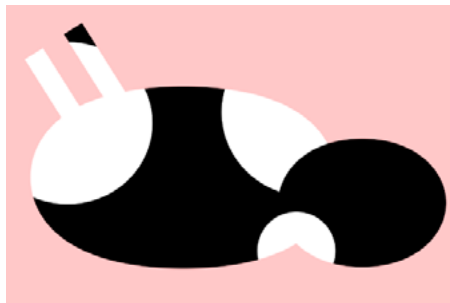


A group with five layers, each with a different shape.

To mask an example such as this, use the following settings:

- **Group mask:** In the **Group Mask** section, choose **Hide All**. In the **Layer Masking** section, choose **Mask this layer**.
- Layer 1: Set to **+Add to mask**.
- Layer 2: Set to **Mask this layer**.
- Layer 3: Set to **Mask this layer**
- Layer 4: Set to **+ Add to mask**
- Layer 5: Set to **Mask this layer**

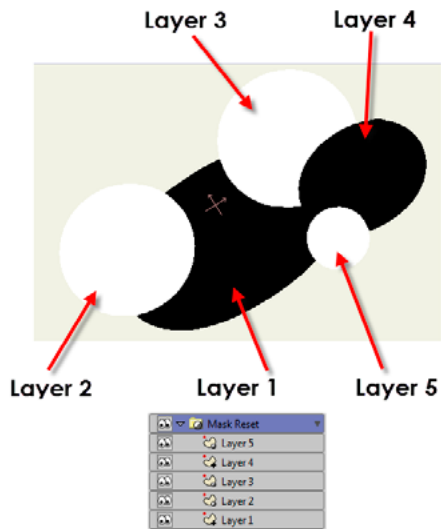
After you apply the above settings, the end result will look as shown in the following figure, when rendered.



Result of simple masking.

Mask Reset (Produces Fringing)

This example consists of a group with five layers, each with an oval shape. This group doesn't follow the rules. It renders with fringe because Layer 4 is set to "Clear and Add to the Mask."

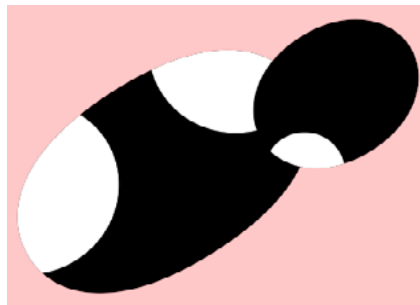


A group with five layers, each with a different shape.

This example uses the following settings:

- **Group mask:** In the **Group Mask** section, choose **Hide All**. In the **Layer Masking** section, choose **Mask this layer**.
- Layer 1: Set to **+Add to mask**.
- Layer 2: Set to **Mask this layer**
- Layer 3: Set to **Mask this layer**
- Layer 4: Set to **+ Clear the mask, then add this layer to it**.
- Layer 5: Set to **Mask this layer**

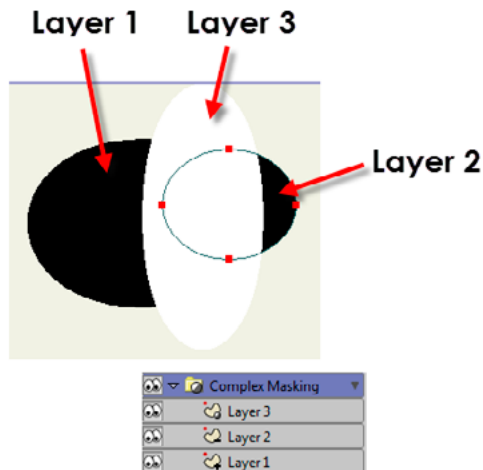
After you apply the above settings, the end result will look as shown in the following figure, when rendered.



Result of mask reset.

Complex Masking (Produces Fringing)

This example starts with a group that contains three layers, each with an oval shape. This masking example also renders with fringe, because it breaks the rules by combining additive and subtractive masking in the same group.



A group with three layers, each with a different shape.

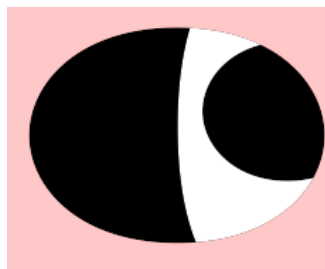
This example uses the following settings:

- **Group mask:** In the **Group Mask** section, choose **Hide All**. In the **Layer Masking** section, choose **Mask this layer**.

Chapter 12: Layer Settings

- Layer 1: Set to **+Add to mask**.
- Layer 2: Set to **-Subtract from mask (this layer will be invisible)**
- Layer 3: Set to **Mask this layer**

After you apply the above settings, the end result will look as shown in the following figure, when rendered.

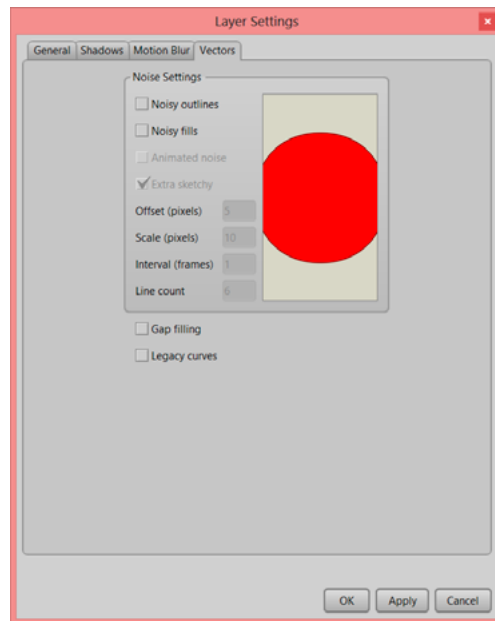


Result of complex masking.

Vectors Tab

This tab is only available for vector layers, and controls the appearance of lines and fills in the layer. The controls

here enable the vector “noise effect”. By adding “noise” to a layer, you can make it look more hand-drawn, or at least get rid of some of that pesky computer precision. Of course, that’s up to artistic interpretation: if you like computer precision, the noise effect may not be the feature for you.



Vectors Layer Settings

- **Noisy Outlines** and **Noisy Fills**: The first two checkboxes turn on noise for outlines and/or fills. If you turn on both of these, all the shapes in the layer will become distorted. However, if you check only one, the effect will look like someone was coloring but didn't stay in the lines. The circle displayed on the right side shows a preview of what your noise effect settings will do to the final drawing. (The best way to understand this feature is to just start clicking the checkboxes and watch the circle.)
- **Animated noise**: Controls whether the noise factor will vary over time in your animation. This can lead to either a very distracting look, or a very sketchy, free-form one, depending on your tastes. Again, experiment with this and watch the circle.
- **Extra Sketchy**: (Associated with noise settings). Creates gaps in the outlines. If you have a curve being drawing you might actually have little gaps in it.
- **Offset**: Determines how far in pixels (on average) your drawing will be distorted from its original shape.
- **Scale**: Determines the "jaggedness" of the distortion. Larger scale numbers will result in smoother, lumpier distortion, while smaller numbers will give you a more scribbled look.
- **Interval (Frames)**: When vector noise is set to be animated, you can set an interval so that the noise changes every nth frame, with n being the number that you enter in this field. Increase the number to reduce the amount of noise.
- **Line Count**: Tells Anime Studio to draw a number of lines, distorting each in a different way.
- **Gap Filling**: Sometimes two shapes are drawn that line up exactly side-by-side with no overlap whatsoever. In some situations, a small crack can appear between them. Turn this option on to enable Anime Studio to fill in these cracks.
- **Legacy Curves**: Switches a layer back to the curve drawing method used in Anime Studio 7 and earlier. Documents created in Anime Studio 7 and earlier should open in the application with this option turned on so that the existing artwork does not suddenly change.

Depth Sort Tab

This tab is only available for group and bone layers. Depth Sort has two controls that can be used with Anime Studio's 3D features.



Depth Sort Layer Settings

- **Sort Layers by Depth:** Allows sub-layers to move in front of and behind each other during an animation.

Chapter 12: Layer Settings

Normally, layers are drawn in the order they appear in the Layers window. However, with this option turned on, layers are displayed according to how far they are from the camera. Typically, layers are sorted by their depth from the camera, but if you're trying to create a 3D object using multiple Anime Studio layers (like a cube or pyramid), you may want to turn it on.

- **Sort by True Distance:** Tells Anime Studio to sort layers by the distance from the camera to the layers' origins, rather than by depth. Usually this option will be left unchecked.
- **Enable animated layer order:** During the course of an animation, you may want to move objects in front of or behind each other. One example is when simulating head turns. The children of a group layer have the ability to move back and forth in layer order over the course of an animation, but you need to turn this option on to allow it. If it's off, then moving one layer in front of another affects them for the entire timeline.

Image Tab

This tab is only available for image layers. There are five options in this tab.

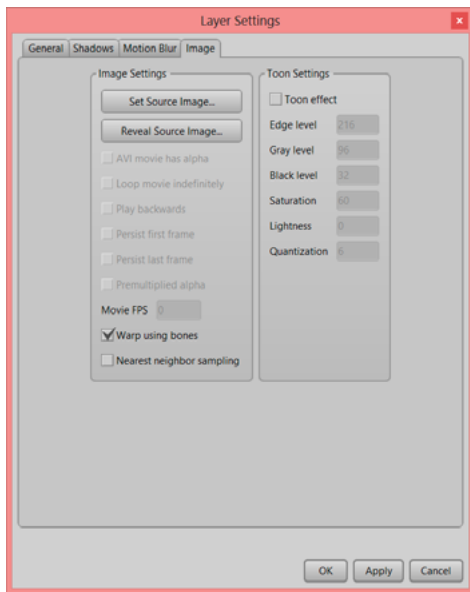


Image Layer Settings

- **Set Source Image:** Lets you select the image to be used in the image layer. Use this if you want to change the image, or if it got lost for some reason.
- **Reveal Source Image:** Click the button to open Explorer (Windows) or Finder (Mac) to the folder that the current source image is contained within.
- **AVI movie has alpha:** Turn this on if the image layer is using an AVI movie, and that movie includes an alpha channel.
- **Loop movie indefinitely:** When checked, the movie plays in a loop for as long as required in the animation. When unchecked, the movie plays once and stops when it reaches its end.
- **Play backwards:** When checked, plays a movie layer backwards (in reverse frame order).
- **Persist First Frame:** When checked, displays the first frame of a movie continually until the playhead reaches the frame at which the movie begins to play. When unchecked, the movie will not appear in the project until the playhead reaches the first frame in the movie.
- **Persist Last Frame:** When checked, displays the last frame of a movie continually after the playhead

reaches the last frame of the movie in the timeline. When unchecked, the movie will no longer appear in the project after the playhead moves beyond the last frame in the movie.

- **Premultiplied Alpha:** If an imported movie has an alpha channel and the edges look bad after importing, it may be because the movie has premultiplied alpha. Check this option to improve appearance.
- **Movie FPS:** Sets the speed of the movie in Frames per Second
- **Warp using bones:** If this box is checked and the image layer is placed inside a bone layer, the bones can be used to warp the image as if it were printed on a rubber sheet.
- **Nearest neighbor sampling:** When this option is not checked, Anime Studio will try to smooth out the areas in between pixels when you enlarge the image. If you want the images to look blocky when they are resized, turn this option on. Anime Studio will not smooth the image and it will start to look blocky when it is enlarged.

Toon Settings

The Toon Effect filter is used with images and movies. Load an image or movie into a new layer. Open the Layer Settings dialog to the Image tab and check the Toon Effect option. The image or movie will be processed through the Toon Effect filter.



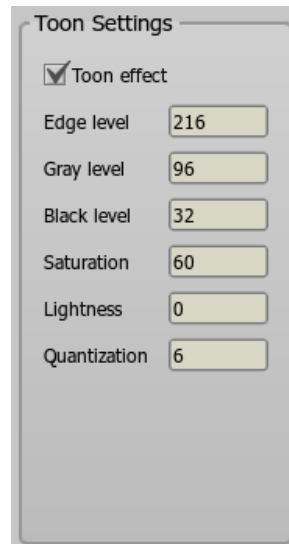
Toon effects on a photograph

When used with videos, the processing can take quite a while. When working with videos, open up the movie file

and apply the toon effect filter. Immediately afterward, import the animation as a new movie file. Use the new movie file, with the toon effect applied, in your final project.

Some types of images work better than others. Faces should be pretty large in the image. If the face is small then a lot of detail will be lost or blurred together.

The Toon Effect filter has several parameters in the Image tab:



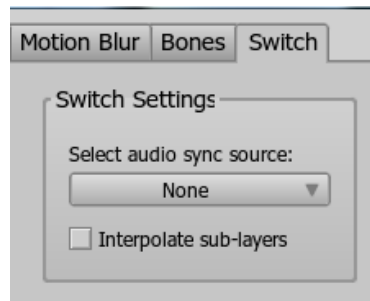
Toon settings in the Layer Settings Image tab

- **Edge level:** Controls the width of the edges in the toon effect. Increase the setting to make the edges wider, and decrease to make the edges thinner.

- **Gray level:** Darkens the middle areas of the toon effect.
- **Black level:** Darkens the dark areas of the toon effect.
- **Saturation:** Increases or decreases the amount of color. Negative values make the toon more black and white.
- **Lightness:** Increase the setting to make the image appear more faded.
- **Quantization:** Sets the number of colors in the image. When set at 0, the quantization works the same as found in Anime Studio 7 and earlier. When set to a value greater than 1, the value you enter is the number of colors in the image.

Switch Tab

This tab is only available for switch layers.



Switch Layer Settings

- **Select Audio Sync Source:** Lets you select a data file used to control the switch layer. A data file is not required (you can control a Switch layer manually by right-clicking its entry in the Layers window), but if you do want to use a data file you have two choices:

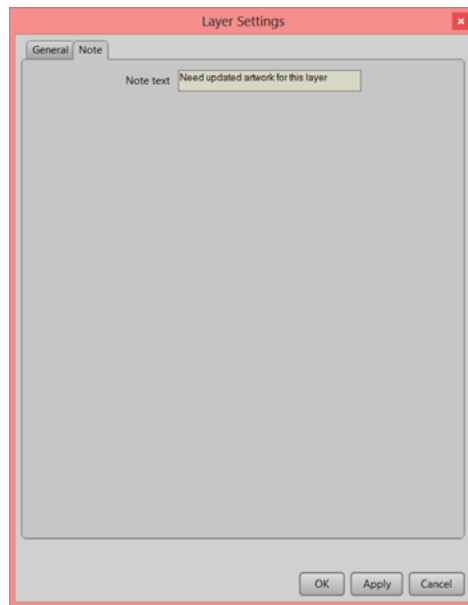


If you want a quicker lip-sync solution, you can use an audio file as a data file. In this case, your switch file should contain several version of a mouth shape, ranging from closed to wide open. The volume of the audio file will control which mouth shape is used at which frame. If you do use an audio file to control the Switch layer, you can either use automatic volume gain (recommended) or set the gain manually. The gain controls how wide the mouth gets. When using manual gain, start with a value of 1 - if the mouth seems too wide, try smaller values (0.75 or 0.5). If the mouth isn't wide enough, try higher gain values (1.5 or 2).



See **“Tutorial 5.1: Automatic Lip-Sync”** on page 140 in your Anime Studio Tutorial Manual and **“Tutorial 5.2: Phoneme Lip-Sync”** on page 142 in your Anime Studio Tutorial Manual for examples of using audio lip-syncing functions.

- **Interpolate sub-layers:** If this box is checked Anime Studio will do smooth transitions between the sub-layers as long as they're all vector layers and contain the same number of points.



Notes Layer Settings

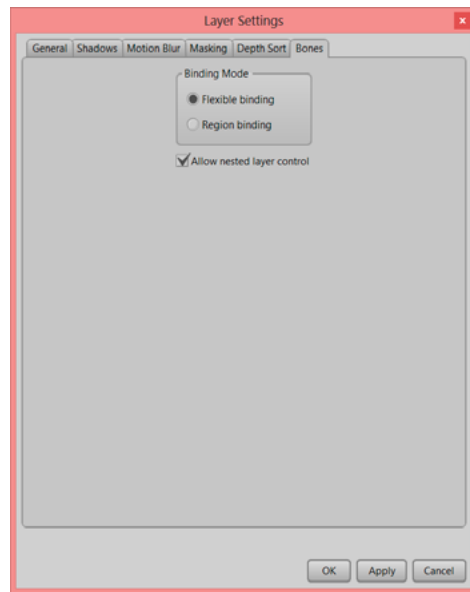
Bones Tab

The settings in the Bones tab are as follows:

- **Binding Mode:** Check one of the following to select the binding mode that you want to use for bones.
 - **Flexible Binding:** This option is selected by default. This uses Flexi-Binding, which allows greater control over how bones affect different layers in a bone group. See **“Tutorial 3.5: Flexi-Binding” on page 120 in your Anime Studio Tutorial Manual.**
 - **Region Binding:** Uses the binding style that was used by Anime Studio prior to version 9.5. See **“Tutorial 3.4: Character Setup” on page 109 in your Anime Studio Tutorial Manual.**
- **Allow Nested Layer Control:** Allows you to control the children of their children, making it easier to work with bones on images and vector art.



Anime Studio provides an option that allows you to control the children of a bone's children, making it easier to work with bones on images and vector art. In other words, if you have a group inside a bone layer, and vector layers inside that group, the bone layer can warp the artwork in those vector layers if **Allow nested layer control** is turned on in the Bones tab of the Layer Properties palette and if the group layer is not bound. This allows more powerful bone rigging while also allowing you to organize your layers in a hierarchy. This allows you to have parent bones and “Grandpa” bones ... bones that affect more than one layer of bones beneath them.

*Bones Settings**Bones Settings*

Chapter 13: Style Window

The Style window is where you set up colors, line widths, fill effects, and other properties to control the appearance of your vector artwork. The Style window has two views, Basic (shown on the right in the following figure) and Advanced (shown on the left in the following figure).

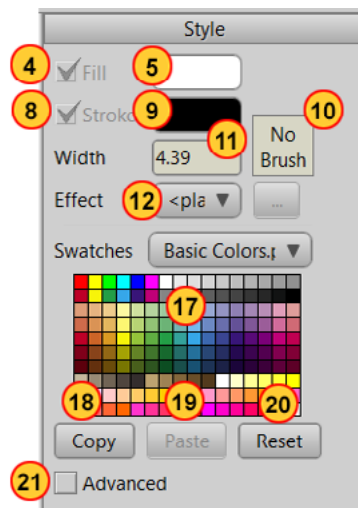
The Advanced checkbox in the lower-left corner of the dialog will toggle the Styles palette between Basic and Advanced views. Check the option to display in Advanced view, and uncheck it to display in Basic view.

The options in the Style window are displayed and listed on the following page.

When you edit the fill color, stroke color, or brush settings, the changes will be displayed live on the canvas so that you can see the effects of your changes.

Style Window Options:

1. Shape selection drop-down menu
2. Window mode indication
3. Name field
4. Fill enable checkbox
5. Fill color selector
6. Fill effect drop-down menus
7. Fill effect settings buttons
8. Stroke enable checkbox
9. Stroke color selector
10. Stroke brush selector
11. Stroke line width field
12. Stroke effect drop-down menu
13. Stroke effect settings button
14. Round end caps checkbox
15. 3D conversion thickness field
16. Color swatch drop-down menu
17. Color swatch
18. Copy button
19. Paste button
20. Reset button
21. Advanced window checkbox
22. Checker selection



Basic Style Options

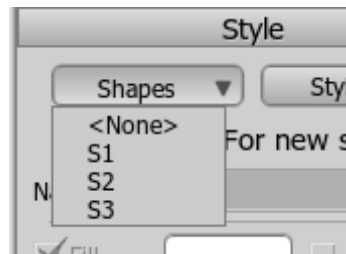


Advanced Style Options

Shapes

Shape Selection Drop-Down Menu (1)

You can use this menu to select any existing and named shape on the current vector layer. Select **<None>** to deselect all shapes.



Shape Selection Drop-Down Menu

- Shapes:** The fill and/or stroke that make vector construction visible when rendering/exporting. For example, if you use the Draw Shape (E) tool with the Auto-fill and Auto-stroke options unchecked, you will create a vector construction without any shape and it will not be visible when rendered/exported. You can

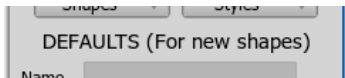
always use the Create Shape (U) tool to make a shape using this vector construction. Enabling either or both of these Auto options before using the Draw Shape tool will create a visible shape with the properties chosen.



Choose **Edit > Preferences...** and in the Option tab, you can select **Auto-name new shapes** so that all of your shapes have names when created. Refer to "Options Tab" on page 252 for more information.

Window Mode Indication (2)

This indicates the current mode of the Style Window. There are three modes:



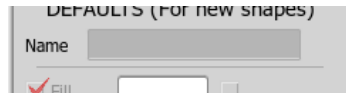
Window Mode Indication

- **DEFAULTS (For new shapes):** In this mode the style you define will be applied to any new shapes you create. This default will retain the style of the last shape you

had selected. This is the default mode when there are no shapes or styles selected.

- **SHAPE:** In this mode the style you define will edit the style of the currently selected shape. Selecting a shape in the workspace or in the shape selection drop-down menu will enter shape mode.
- **STYLE:** In this mode the style you define will either create a new style or edit an existing one, depending on the option you select from the style management drop-down menu.
- Name Field (3)

The name field allows you to name or rename any selected shape or style and displays any existing name.



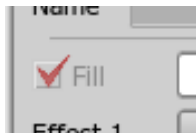
Name Field

Fills

Fill Enable Checkbox (4)

This checkbox determines whether a selected shape has a fill.

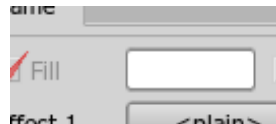
A fill is the color inside of a closed shape. This option is only available when you have an existing shape selected.



Fill Enable Checkbox

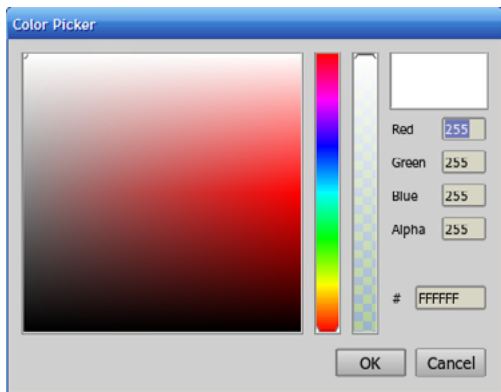
Fill Color Selector (5)

This displays the fill color for the default style, the selected shape, or the selected style, depending on the style window mode. Clicking on it allows you to edit the color with the color picker:

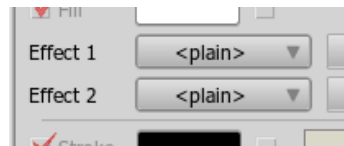


Fill Color Selector

The color picker allows you to select the color and transparency of the fill or stroke of your style. The large field to the left is where you can choose the color saturation and brightness. The vertical colored bar to the right of this is where you choose the color hue. The next, checkered bar is where you set the color alpha value (opacity). At the top right are two color chips. The top one is the current color and the lower one is the previous color (click to restore). Below these are manual inputs for the red, green, blue, and alpha values. And last is a hexadecimal field where you can copy or paste hex values to set the color.



Color Picker



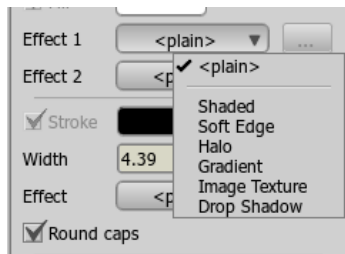
Fill Effect Drop-Down Menu

- **<plain>** indicates that no effect is applied in this drop-down.

This is followed by a list of fill effects. Some fill and line effects can be animated, with keyframes being added to the timeline when you change colors, blur radius, angles, offsets, blurs, and more.

Fill Effect Drop-down Menu (6)

These drop-down menus allow you to select two different fill effects. There are many effects to choose from:



Expanded Menu

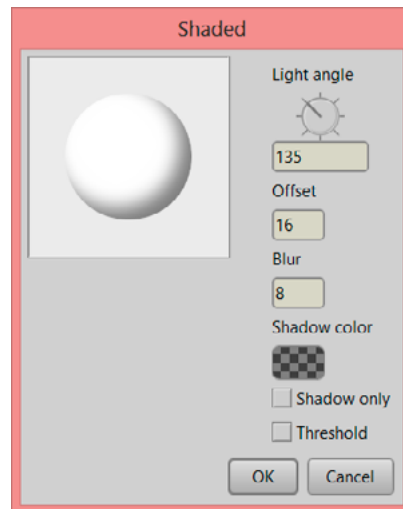
Selecting an effect will bring up an effect settings dialog, each of which are described in the sections that follow. Each effect has a variety of specific parameters for the user to adjust, as well as an effect preview that updates as changes are made to these settings.



You will only be able to view the results of some effects on your shapes by rendering a single frame (Cmd/Ctrl+R) or exporting the animation (Cmd/Ctrl+E).

Shaded Fill Effects

When you choose Shaded Fill effects, a dialog displays the following options:

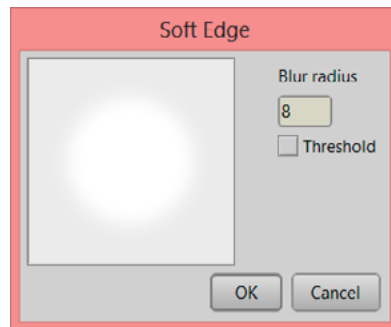


Shaded Effect Options

- **Light Angle:** Provides a dial that allows you to change the direction that the light is coming from. You can also enter a numerical value. Zero degrees is located at the bottom of the dial.
- **Offset:** Allows you to assign a value for how far the shadow is offset from the filled area
- **Blur:** Controls the softness of the shadow.
- **Shadow Color:** Allows you to choose the shadow color from a color palette.
- **Shadow Only:** Check this option to only display the shadow, without the fill.
- **Threshold:** Works in conjunction with blur, and can be used to produce smoother transitions in corners. The more an object is blurred, the more the threshold will have an effect. The blur is computed first, and then the threshold is added on top of it to smooth out the overall shape.

Soft Edge Fill Effects

When you choose Soft Edge Fill effects, a dialog displays the following options:

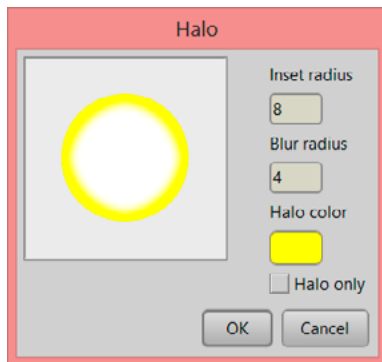


Soft Edge Effect Options

- **Blur Radius:** Allows you to increase or decrease the softness, or blur, around the edge of the fill.
- **Threshold:** Works in conjunction with blur, and can be used to produce smoother transitions in corners. The more an object is blurred, the more the threshold will have an effect. The blur is computed first, and then the threshold is added on top of it to smooth out the overall shape.

Halo Fill Effects

When you choose Halo Fill effects, a dialog displays the following options:



Halo Effect Options

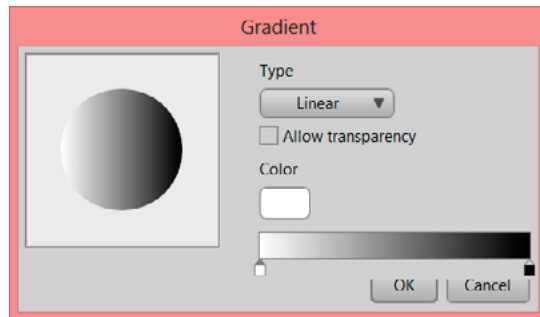
- **Inset Radius:** Adjusts the radius of the inner area
- **Blur Radius:** Adjusts the softness around the halo
- **Halo Color:** Click the Color chip to select a color for the halo.

- **Halo Only:** Check this option to only add the halo effect without the fill.

Gradient Fill Effects

Gradient fill effects can be animated and can also respond to bone warping. You can animate the location and color of all of the color markers in the gradient. All changes in color will show up in the timeline when added.

This is the dialog used to control the gradient effect. The following options appear:



Gradient Effect Options

- **Type:** Allows you to choose one of four types of gradient effects:: Linear, Radial, Reflected, or Angle. The preview shows an example of each type.
- **Allow transparency:** Check this option if you want the gradient to appear partially or completely transparent in some areas.
- **Color:** Allows you to select a color and transparency for the selected gradient marker (below).
- **Gradient bar:** This bar shows the current gradient.
- **Gradient markers:** Below the gradient bar are initially two markers, one on each end. Selecting one of these will fill the arrow above it and display its color in the Color selector to indicate it is selected. These markers can be moved anywhere along the gradient bar.
- You can also add additional color markers to the gradient by clicking anywhere just below the gradient bar. You can copy an existing marker by holding the Alt key when you select a marker. You can then drag this copied marker to a new location on the gradient bar, or even click the color selector to change its color.

Image Texture Fill Effects

When you choose Image Texture Fill effects, a dialog displays the following options:

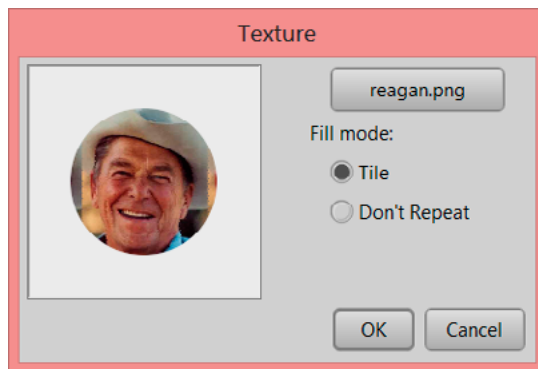


Image Texture Effect Options

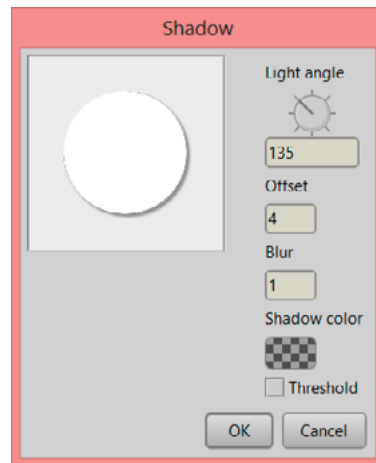
- **Select Texture:** Click this button to choose an image file to be used as a texture fill.
- **Tile:** Choose this option if you want the image to repeat more than once to fill the selected area

- **Don't Repeat:** Choose this option if you do not want to repeat image used for the fill. The image will be rescaled proportionally as needed to fit the width or height of the area that will be filled.

Drop Shadow

The Drop Shadow feature allows you to quickly and easily create a drop shadow for your objects. The feature allows you to set the angle from which the light shines, how much the shadow is offset from the object, and the blur radius (or softness) of the shadow. In addition, you can set the color of the shadow through a color swatch.

When you choose a Drop Shadow, a dialog displays the following options:



Drop Shadow Effect Options

- **Light Angle:** Provides a dial that allows you to change the direction that the light is coming from. You can also enter a numerical value. Zero degrees is located at the bottom of the dial.

- **Offset:** Allows you to assign a value for how far the shadow is offset from the filled area
- **Blur:** Controls the softness of the shadow.
- **Shadow Color:** Allows you to choose the shadow color from a color palette.
- **Threshold:** Works in conjunction with blur, and can be used to produce smoother transitions in corners. The more an object is blurred, the more the threshold will have an effect. The blur is computed first, and then the threshold is added on top of it to smooth out the overall shape.

A preview of the settings appears in the preview window as you adjust them. When you are satisfied with the appearance of your shadow, click **OK** to apply the settings. You will need to preview the frame (Cmd/Ctrl+R) or export the animation (Cmd/Ctrl+E) to see the results.

Fill Effect Settings Button (7)

Each of these buttons become active when you have an effect selected in the effect drop-down menu next to it. These buttons allow you to access and edit the effect settings dialog of the selected effect.



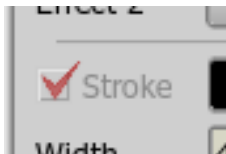
Fill Effects Settings Button

Stroke

Stroke Enable Checkbox (8)

This checkbox determines whether a selected shape has a stroke.

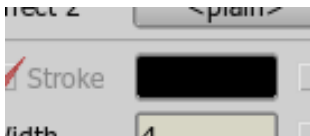
A stroke is the outline of a shape. Shapes can exist without a stroke or only composed of a stroke. This option is only available when you have an existing shape selected.



Stroke Enable Checkbox

Stroke Color Selector (9)

This displays the stroke color for the default style, the selected shape, or the selected style, depending on the style window mode. Clicking on it brings up the color picker.



Stroke Color Selector

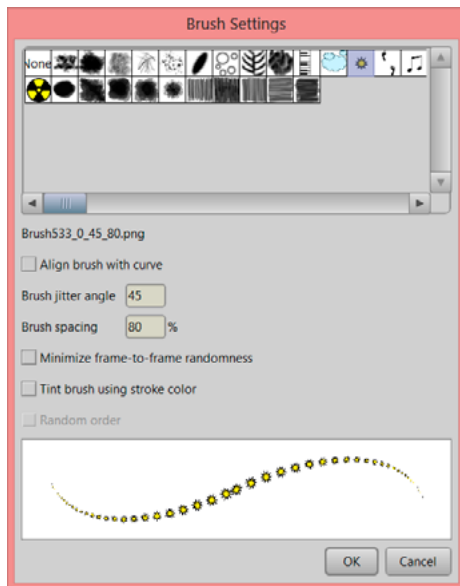
Stroke Brush Selector (10)

This displays the current brush used for the stroke of the default style, selected shape, or selected style.



Stroke Brush Selector

Clicking this box opens the Brush Settings dialog:



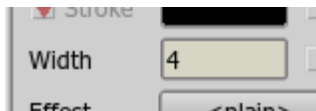
Brush Settings Dialog

- **Brush selection menu:** This displays all of the available brushes. You can click on one to select it for use or select None for no brush.
- **Current Brush:** The name of the currently selected brush appears in the line immediately below the brush selector.
- **Align brush with curve:** This option changes the orientation of the brush to the vector curve it is applied to.
- **Brush jitter angle:** This option determines how much the orientation angle varies, with zero being to variance.
- **Brush spacing:** This allows you to set the spacing between each instance of the brush. Improvements to brush spacing have been made so that brush spacing remains consistent whether the brush curve follows curve points that are either pointed or curved.
- **Minimize frame-to-frame randomness:** Check this option to keep the brush from jittering during the animation.
- **Tint brush using stroke color:** For brushes that are colored (not all black) this option allows the brush to take on the selected stroke color instead of the color displayed in the brush selection menu.

- **Random Order:** When checked, randomizes the order of the Multi-Brush shapes while the stroke is painted.
- **Brush preview:** This displays a preview of the chosen brush settings.

Stroke Line Width Field (11)

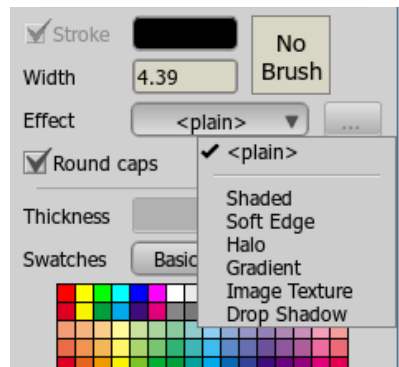
This field allows you to set the stroke line width of the default style, selected shape, or selected style. The minimum line width is .25. After clicking in this field you can either type in or use the mouse wheel to adjust the value.



Stroke Line Width Field

Stroke Effect Drop-down Menu (12)

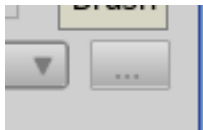
This drop-down menus allow you to select a stroke effect. There are many effects to chose from. The stroke effects are the same as the fill effects described earlier.



Stroke Effect Drop-Down Menu

Stroke Effect Settings Button (13)

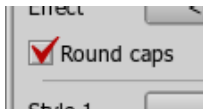
This button becomes active when you have an effect selected in the effect drop-down menu next to it. This button allows you to access and edit the effect settings dialog of the selected effect.



Stroke Effect Settings Button

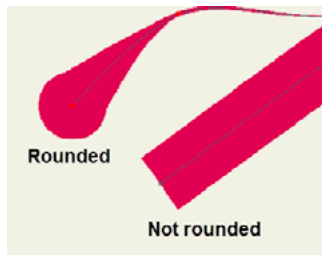
Round End Caps Checkbox (14) (18)

You'll notice the addition of a Round Caps option in the Stroke section of the Advanced Style window. Check this option if you want to use strokes that have rounded ends. Uncheck the option to use flat ends on your strokes (similar to those used in Anime Studio 7 and earlier).



Rounded End Caps Checkbox

Older files will open with plain end caps to retain their original appearance. New artwork will default to round end caps unless the Round Caps option is unchecked.

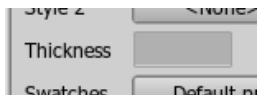


Rounded end caps compared to ends that are not rounded.

3D Conversion Thickness Field (15)

This option (20) is only available for the default style or selected shapes on vector layers that are using either the Extrude or Inflate options of the vector layer **Layer Settings > 3D Options tab > 3D Conversion** drop-down. This field displays the 3D thickness of the default style or selected shape. After clicking this field, you can type in or use the mouse wheel to adjust this value.

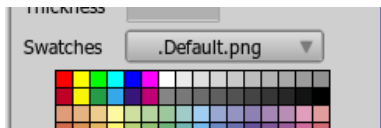
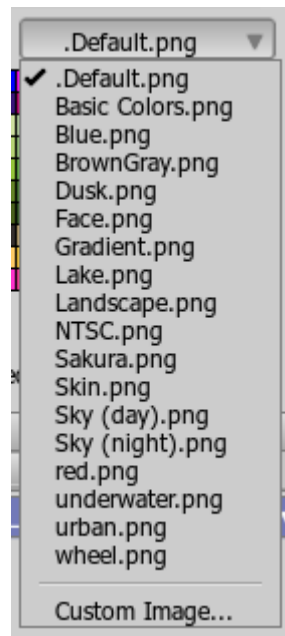
These swatches appear in the Color Swatch (22) below.


3D Conversion Thickness Field

Swatches

Color Swatch Drop-down Menu (16)

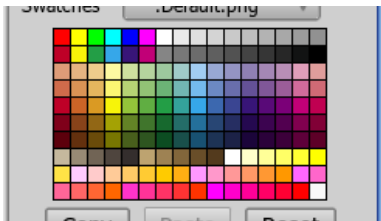
This menu allows you to select from a variety of color swatches or select a Custom Image as a swatch.


Swatches menu

Expanded menu

These swatches appear in the Color Swatch (22) below.

Color Swatch (17)

The swatch you select from the color swatch drop-down menu shows up here as a simple color picker. You can use this as a shortcut for selecting colors for your objects. Just click a color in this palette to assign it as the selected shape's fill color. Right-click a color swatch to assign it as the selected shape's outline color.

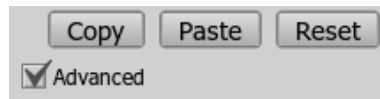


Color Swatch

Copy, Paste, and Reset Buttons

There are three buttons that we've classified as "other" controls:

Chapter 13: Style Window

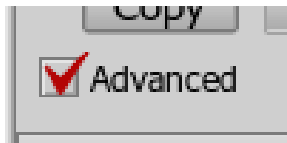


Copy, Paste, and Reset buttons

- Press **Copy** (18) to copy the properties of the selected shape or style.
- Press **Paste** (19) to apply a previously copied set of properties to another shape or style.
- Press **Reset** (20) to switch back to editing the default fill and line properties - if a shape or style is currently selected, it will be de-selected.

Advanced Window Checkbox (21)

As mentioned at the beginning of this chapter, this checkbox switches the style window between Basic and Advanced views. The basic view minimizes the style window to some of the options most used while animating.



Advanced Window Checkbox

Chapter 14: The Library Window

The Anime Studio Library window provides access to all of the content that ships with Anime Studio such as characters, props, images, audio, etc. It has three tabs: the **Library** tab that provides access to the content categories, the **Search** tab which allows you to search your content folders for specific files, and the **Favorites** tab where you can gain easy access to your frequently used or favorite content items.

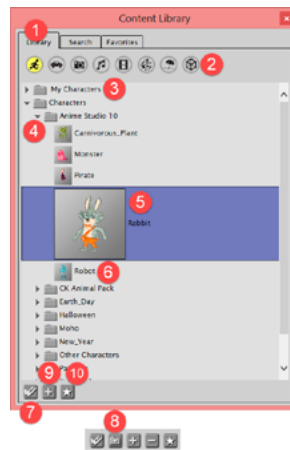


The version of Anime Studio Debut that is sold through the Mac App Store offers most of the functionality described in this section. Differences will be noted in this chapter where appropriate.

The **Library** tab contains eight categories, discussed below. Each category is further divided into subcategories. You can create and remove categories and subcategories, and can add and remove content, including your existing content libraries, to/from the **Library** palette.

The following figure shows the various controls and options that are contained in the library palette. Navigate through the Library list as follows:

- Use the Up and Down arrow keys to move higher or lower in your content tree.
- Use the Right and Left arrow keys to open and close folders.
- Click or select an item in the list to expand the display and view a larger preview of the content item.



The Anime Studio Library window

1. **Library Tabs:** Allows you to switch between three views in the Library Palette: Library, Search, and Favorites.
2. **Category Icons:** Allows you to select one of the eight library categories. From left to right, they are **Figures**, **Props**, **Images**, **Audio**, **Video**, **Effects**, **Scenes**, and **3D**.
3. **Collapsed folder:** Click the right arrow to expand the contents of the folder. The number that appears in brackets at the beginning of the folder name designates the number of items that are contained within that folder.
4. **Expanded folder:** Click the down arrow to collapse the contents of the folder. The number that appears in brackets at the beginning of the folder name designates the number of items that are contained within that folder.
5. **Selected item:** The currently selected item is highlighted, and displayed with a larger icon. File details appear at the left of the icon that indicate file name and other details if available.
6. **Content preview:** If a content item is not selected, a smaller preview icon appears beside the name of the file. Click once to select the item to view its details.
7. **Double Checkmark (Add button):** Click the double-checkmark icon to add the currently selected item to your scene.
8. **Create New Folder (+):** Click this button to create a new folder or subfolder beneath the currently selected library folder. This button appears only when a "My" content folder is selected (My Characters, My Props, etc.). You cannot add folders to the default library categories that are furnished with Anime Studio.
9. **Save to Library (+):** Click this button to save the scene item that is currently selected into the Library.
10. **Add to Favorites:** Adds the item that is currently highlighted in the library to the library's Favorites tab.

Displaying the Library Window

If the Library Window is not open, select **Window > Library** or use the keyboard shortcut **Command/Ctrl+Shift+L**.

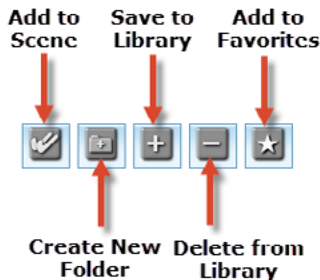
To resize the Library palette:

- Drag the left or right side to resize the width of the Library.

- Drag the top or bottom edge to resize the height of the Library.
- Drag any corner of the Library palette across your screen to the desired height and/or width.
- Loading and Managing Items using the Library Icons

The **Library** icons appear as shown in the following figure. These icons appear at the bottom of the palette.

From left to right, these icons are:



Library Icons

- **Double checkmark:** The **Add to Scene** (double check) button adds the selected item to your scene. After you choose a content category and locate the item you want to use in your scene, click the Add to scene icon to add the item to your project.
- **Create New Folder:** Click the **Add a Folder** (+) button to create a folder beneath the currently selected Library folder.
- **Save to Library:** Clicking the **Save to Library** (+) button adds the selected item to the **Library** palette.
- **Delete from Library:** Clicking the **Delete from Library** (-) button removes the selected item from the **Library** palette.



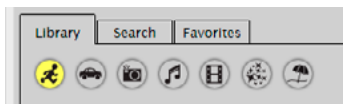
The **Save to Library** and **Delete from Library** buttons allow you to save and delete content to your "My" folders only. You will not be allowed to save or delete library content from the Anime Studio library.

Add to Favorites: Click to add the currently highlighted library item to your Favorites list.

About Library Palette Categories

Anime Studio's library allows you to quickly select categories and the items contained within them:

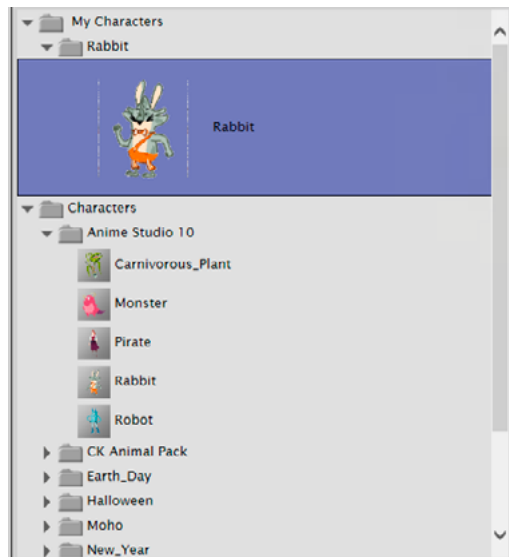
Click a **Category** icon to select a Content category. Then drill down in the hierarchical list in the Library list to select the item you want to add to your scene.



Category Icons

The default categories are broken down by content type: **Figures, Props, Images, Audio, Video, Effects, Scenes**, and **3D**. When you switch between categories, the Library remembers which item was selected the last time you used a specific category.

The content items are shown as a series of thumbnails arranged in a tree hierarchy. This area is called the Content pane.



Content Pane

Maintaining Your Content Folders

When you first start Anime Studio, you are prompted to create a content folder. The steps are discussed in ["Creating a Content Folder" on page 7](#). You can use the subfolders in this directory to store your own custom Anime Studio-compatible content.

In addition, the Library window allows you to add content to your own folders so that you can access this content more easily. When you select one of the category icons at the top of the Library window (such as Characters, Props, Cameras, and so on), you'll see a "My" folder at the top of the content pane. For example, you will see a folder named My Characters in the Character category.

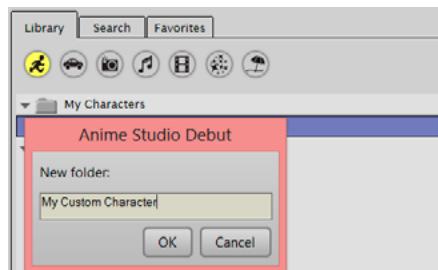
You can maintain your **Library** palette by adding and removing items to and from the **Library** palette, as described below.

Creating Subfolders

You can create new subfolders in the library to store your content. Follow these steps:

1. Click the category icon that applies to the subfolder you want to create. For example, if you will use the new folder to store your own characters, select the Characters category.

2. Highlight the folder beneath which you want the new folder to appear (such as the Anime Characters folder shown in the following figure).
3. Click the Create New Folder icon located at the bottom of the Library palette. You are prompted to enter a name for the new folder.
4. Enter a new folder name and choose OK. The folder appears in the Library window.



Creating a Subfolder

Adding Items to the Library

Saving an item to the **Library** palette adds the appropriate item to the currently selected category/subfolder. To add an item to the **Library** palette:

1. In the Layers window, locate and highlight the item that you want to save to the library. Assign a descriptive name to the object, if necessary, as the Library uses the layer name to identify the Library object name.
2. In the Library window, select the desired category/subcategory by clicking the appropriate Category icon (**Figures**, **Props**, **Images**, **Audio**, **Video**, **Effects**, **Scenes**, or **3D**).
3. Click the **Save to Library** icon (+) at the bottom of the **Library** palette. The object is saved to the Library folder that you selected.



Library Icons

Deleting Items from the Library Palette

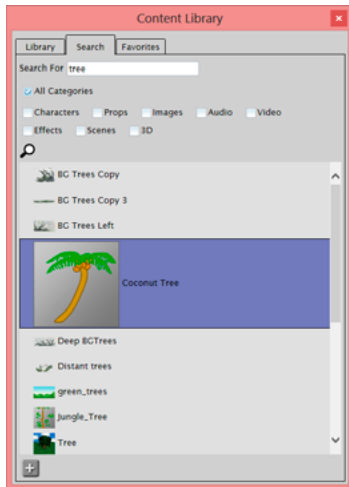
To delete an item from the **Library** palette, select it by clicking its preview image, then click the **Delete from Library** icon (-) at the bottom of the palette (see below for an image of the **Library** icons).



Deletions are permanent! Be sure you really want to delete the selected item. If you have not saved your content elsewhere (such as archiving the source files), the deleted content will be permanently lost. You cannot undo content deletions.

Searching the Library

The Search tab in the library allows you to perform a keyword search in all or in selected categories.

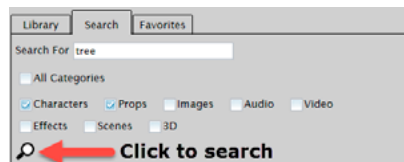


Library Search Tab

To perform a search, follow these steps:

Chapter 14: The Library Window

1. Switch to the Search tab in the Library.
2. Enter a keyword (such as **anime**) or a series of keywords (such as **outdoor scene**) in the **Search For** field.
3. Check or uncheck options as follows:
 - To perform a search throughout all Library categories, check the **All Categories** option.
 - To perform a search in specific categories in your Library, uncheck the All Categories option and then check or uncheck **Characters**, **Props**, **Images**, **Audio**, **Video**, **Effects**, **Scenes**, or **3D** as needed to find the content you are looking for.



Searching specific categories

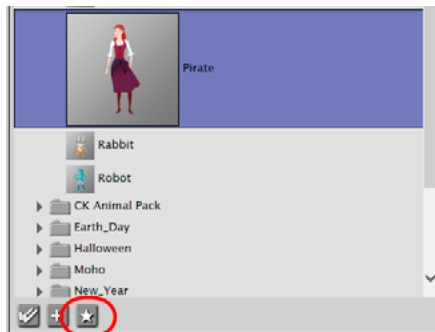
4. Click the **Search** (eyeglass) button. Anime Studio performs a search for the content that you specified, and search results appear in the Content pane.

Favorites Tab

The Favorites tab allows you to quickly add your favorite content to library folders that you create yourself.

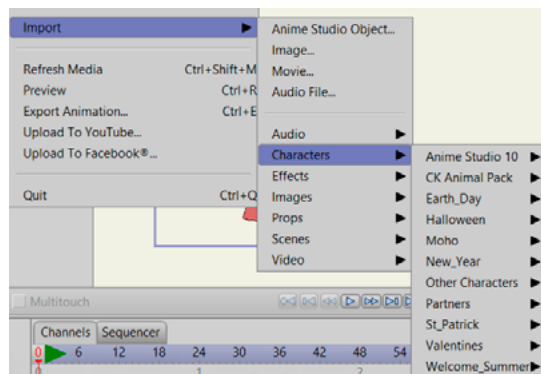
To add an item to the Favorites tab:

1. Highlight the library item that you want to add to favorites.
2. Click the **Add to Favorites** button at the bottom of the **Library** palette. An Add to Favorites menu appears above the selected item.
3. From the menu, select an existing Favorites category, or choose **<<New Folder>>** to create a new Favorites folder. When the New Library Name dialog appears, enter a name for your new folder and click **OK**. The new folder appears in the Favorites tab and your item appears within it.



Add to Favorites button

You can also access library content by choosing **Import >** and selecting content from one of the various subcategories.



Selecting content from the File > Import command

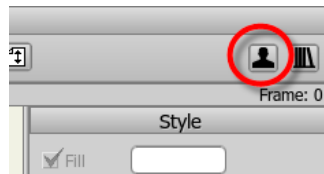
Chapter 15: The Character Wizard

The Character Wizard allows you to quickly and easily create characters that you can animate in Anime Studio. It consists of several different tabs that allow you to specify body proportions, facial features, movement, clothing and other styling features.

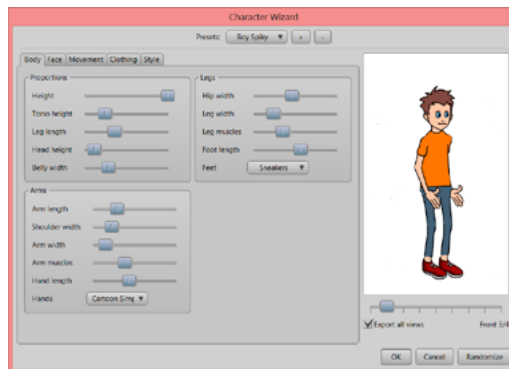
Using the Character Wizard

You can open the Character Wizard by clicking the Character Wizard button that is located in the upper right corner of the Anime Studio interface. It appears just to the left of the Library button.

The Character Wizard consists of a number of different tabs that help you design your own character. There are also a few controls that appear from one tab to the next.



Click the Character Wizard button to open the Character Wizard



The Character Wizard window

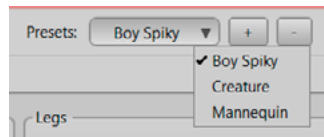
Presets

The Presets drop-Down allows you to choose from a number of different character types: **Boy Spiky**, **Creature**, and **Mannequin**. Each of these different humanoid character types has a different appearance to start with, varying in proportion, body shape, head shape, and so on. Some presets are more “human” while other are more fantasy-like. You can use the other tabs to customize the appearance of the Preset even further.

Use the **+** button beside the Preset drop-Down to create your own preset, or the **-** button to delete a preset that you have previously saved yourself. Built-in presets cannot be deleted.



The preset will be saved at its current state. If you go back and later change the character's appearance (such as changing features or colors), the saved preset does not automatically update to reflect those changes. You can resave the character under its original name to overwrite the old one, or save a new preset under a different name.



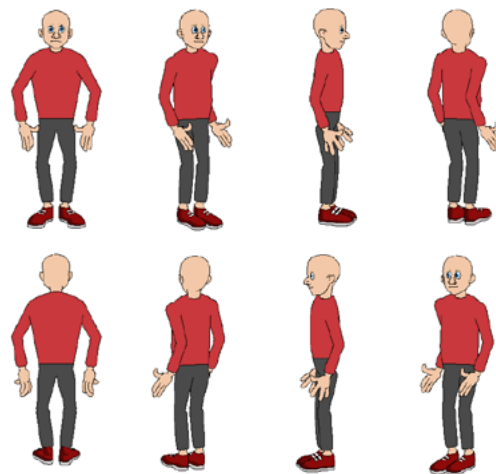
Presets available in the Character Wizard

Changing the Character Views

On the right side of the Character Wizard, you will see a preview of the current character. Beneath the preview is a slider, that allows you to view your character in one of eight angles. Move the slider to the right or left to change the perspective view of the character. The first bar displays the character in its front view. As you move the slider toward the right, the view changes to reflect 1/8 of a circle (as if the character has turned 45 degrees).



Changing character views



Different character views

Exporting Views

After you complete your character in wizard, either with a preset or by customizing in the other tabs (described

in the sections that follow) you can click OK to exit the character wizard and view the character in your Anime Studio project.

Before clicking the OK button, you should check the status of the Export All Views option beneath the view slider. With this option checked, five views of the character will be exported to your Anime Studio project (Front, Front 3/4, Back, Back 3/4, and Side). With the option unchecked, only the currently selected view will appear in your project.

Randomizing Characters

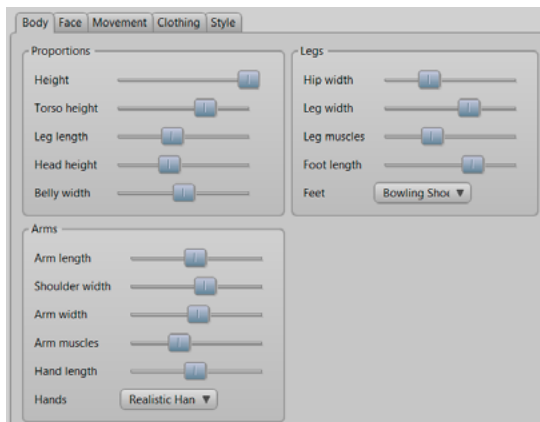
The lower-right corner of the Character Wizard contains a Randomize button. When you click this button, the Character Wizard combines settings from the different tabs to create a totally unique character. This is a quick and easy way to generate a customized character or preset as a starting point that you can later modify yourself.



Some random characters

Body Tab

The Body tab allows you to adjust the proportions of the various parts of the character's body. Move the sliders left or right to adjust the proportions as described in the following sections. The preview window will update the character in real time while you make your adjustments.

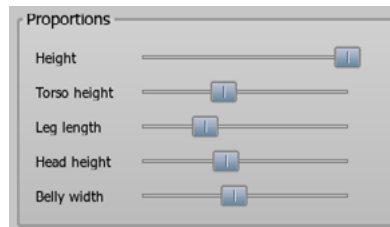


Character wizard Body tab

Proportions

- **Height:** Move the slider toward the left to make the character shorter, or toward the right to make the character taller.

- **Torso height:** Move the slider toward the left to decrease the height of the area between the shoulders and hip, or toward the right to increase the height of this area.
- **Leg length:** Move the slider toward the left to shorten the legs, or toward the right to lengthen them. The feet will remain stationary on the ground.
- **Head height:** Move the slider toward the left to make the head smaller, or toward the right to make the head larger. The height of the character will remain the same.
- **Belly width:** Move the slider toward the left to decrease the width of the waist, or toward the right to increase it.



Proportion options

Legs

- **Hip width:** Move the slider toward the left to decrease the width of the hip, bringing the legs closer together. Move the slider toward the right to increase the width of the hip, creating more space between the legs.
- **Leg width:** Move the slider toward the left to make the legs and hip thinner, and toward the right to make the legs and hip wider.
- **Leg muscles:** Move the slider toward the left to make the legs appear less muscular (and more bony). Move the slider toward the right to add more muscle to the legs.
- **Foot length:** Move the slider toward the left to decrease the size of the feet, or toward the right to increase the size of the feet.
- **Feet:** Use the Feet drop-Down menu to select the appearance of the feet. Choose **Generic** to create a simple representation of a bare foot with no toes. Other choices include **Anime Boy Sneakers**, **Bare** (with toes), **Bowling Shoes**, **Female Sandals**, **Male Sandals**, **Reference**, and **Simple**.



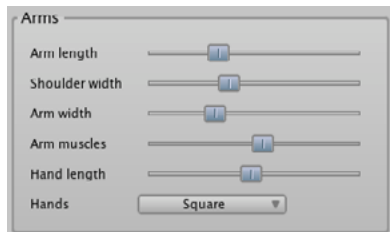
Leg options

Arms

- **Arm length:** Move the slider toward the left to shorten the arms from the shoulder, and toward the right to lengthen them.
- **Shoulder width:** Move the slider toward the left to decrease the width of the shoulder (bringing the arms closer toward the body), or toward the right to increase the width of the shoulder (moving the arms away from the body).
- **Arm width:** Move the slider toward the left to decrease the size of the arms (making them thinner), or toward

the right to increase the size of the arms (making them fatter).

- **Arm muscles:** Move the slider toward the left to make the arms less muscular and bony, or toward the right to make them more muscular.
- **Hand length:** Move the slider toward the left to decrease the size of the hands, and toward the right to increase the size of the hands.
- **Hands:** Use the Hands drop-Down menu to select a style of hands for the character. Choose **Generic** to create generic hands that have no fingers. Other choices include **Anime Boy Mittens**, **Female Red Nails**, **Long Fingers**, **Simple**, **Square**, and **Toon**.

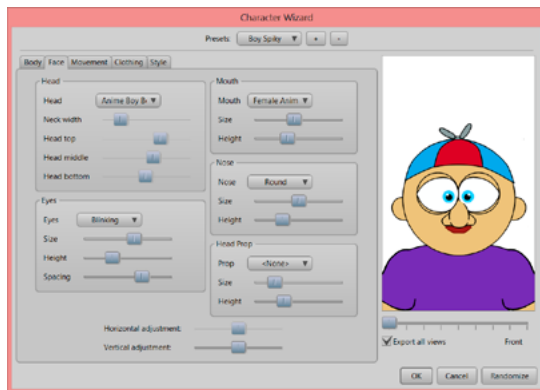


Arm options

Face Tab

The Face Tab of the Character Wizard allows you to select and adjust the facial features, including the head, eyes, mouth, and nose. Included at the bottom of the various categories are the following sliders:

- **Horizontal adjustment:** Move the slider left or right to position the facial features, if necessary after you adjust the head proportions. For example, you can move the eyes, nose, and mouth closer to the face if they appear to be detached from the face. The adjustment slider will be disabled in the Front and Back views where it does not apply.
- **Vertical adjustment:** Move the slider left or right to adjust the height of the facial features, if necessary after you adjust the head proportions. For example, in some cases, the profile of the lips will not match up with the line of the mouth and this control can match it more closely.

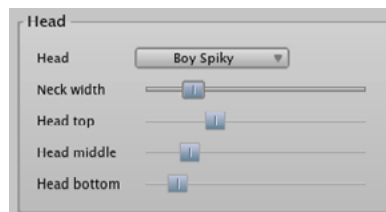


Character wizard Face tab

Head

- **Head selector:** Click the Head drop-Down list to choose from a number of preset character heads. Styles range from human to fantasy and more. Some characters have hair or hats, while others are bald.

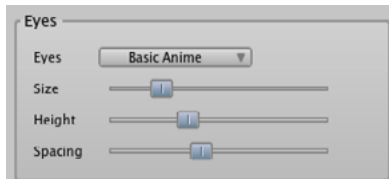
- **Neck width:** When you are working with a head where the size of the neck can be adjusted, this dial allows you to increase or decrease the width of the neck. The option will be disabled when the character does not have a resizeable neck.
- **Head top:** (enabled for Generic head only) Move the slider toward the left to decrease the width of the crown, or toward the right to increase the width.
- **Head middle:** (enabled for Generic head only) Move the slider toward the left to decrease the width of the middle head, or toward the right to increase the width.
- **Head bottom:** (enabled for Generic head only) Move the slider toward the left to decrease the width of the lower head, or toward the right to increase the width.



Head options

Eyes

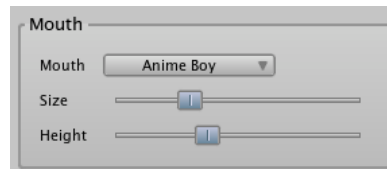
- **Eye selector:** Use the Eyes drop-Down list to select one of several different eye shapes.
- **Size:** Move the slider toward the left to decrease the size of the eyes, or toward the right to increase the size of the eyes. The size will increase or decrease from the center point of each eye.
- **Height:** Move the slider toward the left to lower the eyes, or toward the right to raise the eyes.
- **Spacing:** Move the slider toward the left to bring the eyes closer, or toward the right to move the eyes farther apart.



Eyes options

Mouth

- **Mouth selector:** Use the Mouth drop-Down list to select one of several different mouth shapes.
- **Size:** Move the slider toward the left to decrease the size of the mouth, or toward the right to increase the size of the mouth.
- **Height:** Move the slider toward the left to lower the mouth, or toward the right to raise the mouth.



Mouth options

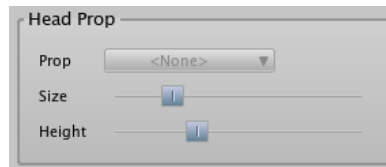
Nose

- **Nose selector:** Use the Nose drop-Down list to select one of several different nose shapes.

- **Size:** Move the slider toward the left to decrease the size of the nose, or toward the right to increase the size of the nose.
- **Height:** Move the slider toward the left to lower the nose, or toward the right to raise the nose.
- **Size:** Move the slider toward the left to decrease the size of the head prop, or toward the right to increase its size.
- **Height:** Move the slider toward the left to lower the head prop, or toward the right to raise it.



Nose options



Head Prop options

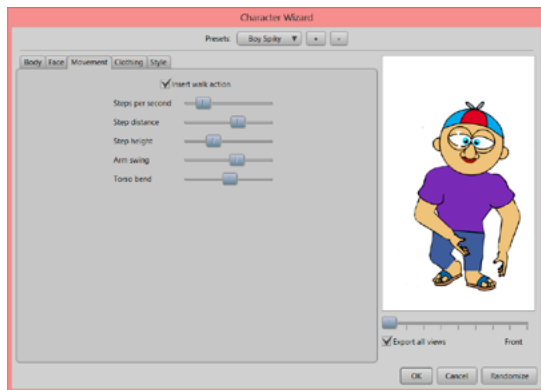
Head Prop

Head props are only enabled when the Creature is selected as a character preset.

- **Prop:** Use the Prop drop-Down list to select one of several different head props, such as hats, beards, curls, and other facial and head features.

Movement Tab

The Movement tab in the Character Wizard allows you to generate a walk cycle for your character, very quickly and easily, through the use of sliders. As you design the walk cycle, it will be applied to all of the character views (front, back, sides, and quarter-views).



Character wizard Movement tab

The following options appear:

- **Insert Walk Action:** When you check this option, your character will be exported with movements. If you later decide that you aren't happy with the movement, you will need to delete the keyframes associated with it. With the option unchecked, keyframes for movement will not be exported.

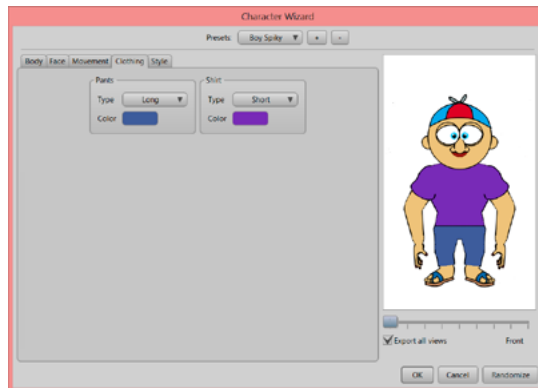
- **Steps per second:** Move the slider toward the left to make your character walk more slowly, and toward the right to make it walk faster.
- **Step distance:** Move the slider toward the left to make your character take shorter steps, and toward the right to make your character take longer steps.
- **Step height:** Move the slider toward the left to keep the steps closer to the ground (less knee bend); and toward the right to raise the feet more from the ground (more knee bend).
- **Arm swing:** Move the slider toward the left to decrease the arm swing (making it stiffer), and toward the right to increase the arm swing (making it looser).
- **Torso bend:** Move the slider toward the left to add less bend to the torso (making the posture straighter). Move the slider toward the right to add more bend (adding more bounce to the walk).



Other settings options

Clothing Tab

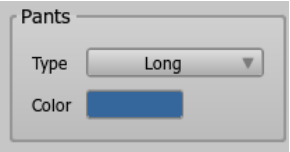
The Clothing Tab allows you to change the style and colors of the pants and shirt that the character wears. There are two sections available in this tab.



Character wizard Clothing tab

Pants

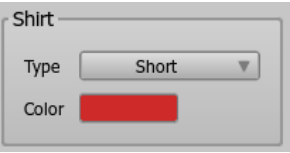
- **Type selector:** Choose whether you want your character to wear short or long pants.
- **Color:** Click the color chip to open the color palette, where you can select a new color for the pants.



Other settings options

Shirt

- **Type selector:** Choose whether you want your character to wear a short-sleeved shirt or a long-sleeved shirt.
- **Color:** Click the color ship to open the color palette, where you can select a new color for the shirt.

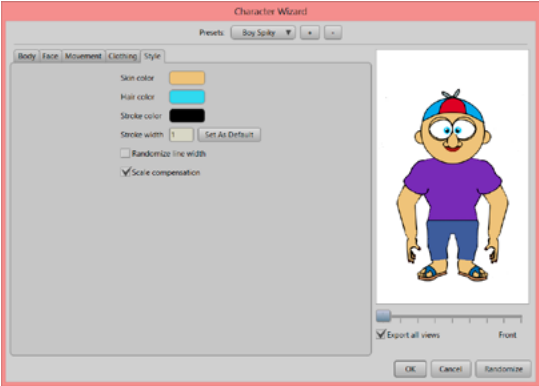


Other settings options

Chapter 15: The Character Wizard

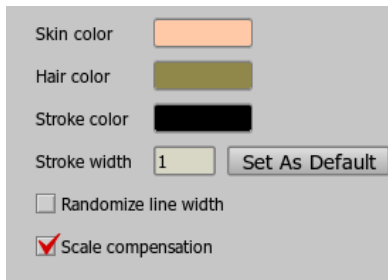
Style Tab

The Style tab allows you to change the skin color, hair color, and stroke color and width for your character.



Character wizard Style tab

The settings you select here are as follows:



Other settings options

- **Skin color:** Click the color chip to open the color palette, where you can select a new color for the skin.
- **Hair color:** Click the color chip to open the color palette, and select a new color for the hair.
- **Stroke color:** Click the color ship to open the color palette, and select a new color for the character outlines.
- **Stroke width:** Sets the stroke width size to use as the default.



If you have a mouse with a scroll wheel, you can increase or decrease this value while watching the character update in the preview window

- **Set as default:** Click this button after you change the value in the Stroke Width field.
- **Randomize line width:** With this setting on, the line width will vary slightly across the character. With the setting off, the line width will be uniform.
- **Scale compensation:** When checked, the stroke width will be proportionally adjusted as the character is resized. If you make the character smaller, the strokes will get narrower. If you make the character larger, the strokes will get wider. When unchecked, the stroke width will remain the same when you increase or decrease its size, and changes to stroke width will need to be made manually.

Designing a Character and Walk Cycle

The Walk cycle is a computer generated action. The others (Jump, Kick, and Wave) are custom actions that were

created in Anime Studio Pro. These actions can be applied to any character.

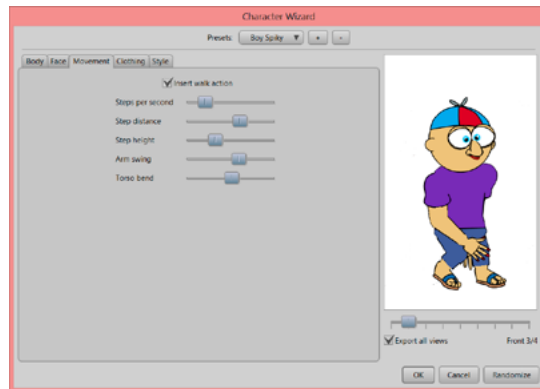
To create a walk for your character, follow these steps:

1. Click the Character Wizard button in the upper-right corner of the Anime Studio interface to open the Character Wizard.
2. Design your character using the Body, Face, Clothing, and Style tabs as outlined in the previous sections. Use the view slider beneath the preview window to view your character from all directions as you design it.



Pay attention to the adjustments you make in height and placement of the facial features. Use the Horizontal and Vertical adjustment sliders to position the eyes, nose, and mouth in the side and quarter-view, and then verify that the changes are acceptable for each of those views. In other words, if you use the slider to adjust the position of the nose and mouth in the side view, also look at how the changes affect the placement of the facial features in the Front 3/4 and Back 3/4 views.

3. After you design your character, click the Movement tab.

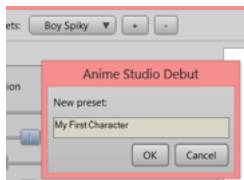


Character wizard Movement tab

4. Adjust the **Steps per second**, **Step distance**, **Step height**, **Arm swing**, and **Torso bend** sliders until you are happy with the walk.
5. The preview window shows a preview of the walk cycle as it is applied to your character. You can view the walk from several angles by moving the slider right below the preview window. Examine your character from all directions and make tweaks as necessary

before you export it to your Anime Studio project. You will export your character in the next tutorial.

- Click the + button at the top of the Character Wizard window. Name your character **My First Character** and click OK to save the preset. Now you will be able to reuse that character preset in any of your projects.



Saving a preset character

- Click **OK** to exit the Character Wizard. You will notice that the character appears in your scene when you do so. The next two tutorials will explain different ways that you can export and use the character in your projects.

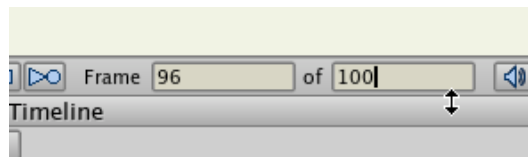
Making Your Character Walk

In the previous project you designed a character and a walk, and saved the preset. When you exited the

Chapter 15: The Character Wizard

Character Wizard, you noticed that the character that you worked on appeared in the project window. However, because you saved the character, you can easily reuse it at any time in any project you start. We will begin this tutorial with a new project, and you'll reuse the character preset that you designed in the previous exercise. In this tutorial, you will export only one view of the character: the Side view.

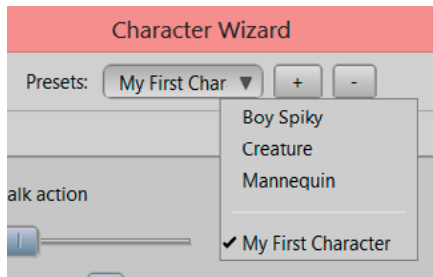
- Start a new empty project in Anime Studio.
- Optionally, you can shorten the length of the animation from its default of 240 frames. To do so, enter 100 in the end frame field in the timeline.



Decrease the length of the animation to 100 frames.

- Click the Character Wizard to open the Character Wizard.

- From the Presets menu at the top of the screen, select the **My First Character** preset that you created in the previous exercise. Your custom character appears in the preview area.

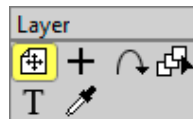


Choosing a preset character

- Move the View slider so that you see your character in the side view.
- Uncheck the **Export All Views** option beneath the preview window. This will export only the current view, which is now set to the **Side** view.
- Click OK to exit the Character Wizard. Your character now appears in the scene. Press the Play button and

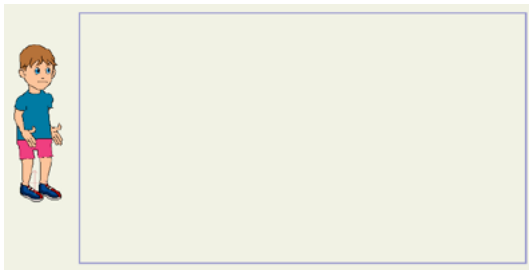
you will see the character walking in the center of the scene. Press the Stop button after you view the animation.

- Click the **Rewind** button to move the timeline back to Frame 0. Then use the **Transform Layer** tool to move your character off the screen to the left.



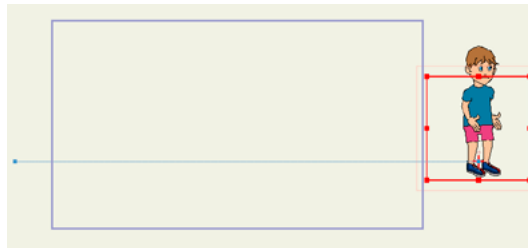
Transformation

Chapter 15: The Character Wizard



At frame 0, move the character to the left of the screen.

9. Advance the timeline to frame 96, and move the character off to the other side.



At frame 96, move the character to the right of the screen.

10. Press the **Play** button to view your character as it walks across the screen.

Rotating Your Character 360 Degrees

In this exercise you'll make your character spin around in a full 360 degree circle.

It's fairly easy to do, if you follow these steps:

1. Start a new empty project in Anime Studio.

2. Click the Character Wizard to open the Character Wizard.
3. From the Presets menu at the top of the screen, select the **My First Character** preset that you created in the previous exercise. Your custom character appears in the preview area.
4. Select the **Front** view before you export the character. This is the view that will be visible when you initially import the character into your scene.
5. Make sure that the **Export All Views** option beneath the preview window is checked. This step will be necessary, because you will be working with all of the exported views in this project.
6. Click **OK** to exit the **Character Wizard**. The character appears in your project.
7. The top layer of the character is a Switch layer, and the various character views appear as bone groups beneath it. With the character's switch layer selected (the topmost layer), use the **Transform Layer** tool to resize your character as needed.

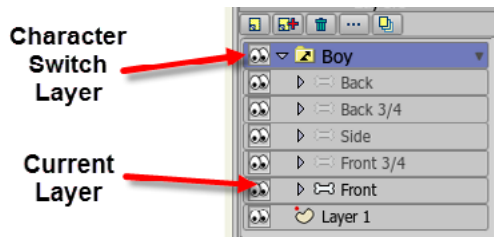


As a general rule, you will want to select the **Switch Layer** (the top layer) when you translate, scale, or rotate your character. This applies the changes to all views of your character. If you want your character to face a different direction at a specific point in the timeline, you simply move to a later frame, and make the appropriate switch layer active. This will be demonstrated in the next few steps. For more information about switch layers, see ["Switch Layer" on page 103](#).

8. If you are not already at Frame 0 in the timeline, use the **Rewind** button to return there. Your character should be facing toward the front.
9. Now, advance the timeline to Frame 6. Expand the character's switch layer so that you see the various views, as shown in the following figure. The view that has the filled-in bone is the layer that is currently in view.

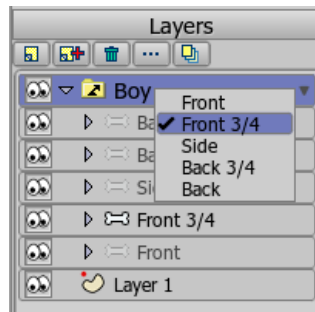


When you export multiple views of the character, you will see the character appear as a Switch Layer. Each of the different views of the character then appear as individual bone groups beneath that layer, as shown in the following figure. The view that is currently visible is the layer that you had selected at the time you exported the character (in this case, the Front view).



The different views of the character appear as bone groups within the switch layer. The layer that shows a highlighted bone is the switch layer that is currently visible for the character.

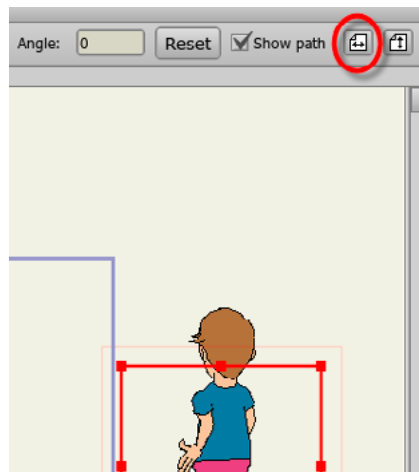
- At Frame 6, right-click in the Switch layer (shown as Man in the above figure), and select the **Front 3/4** view. Your character should rotate to that view and a keyframe will appear at Frame 6.



At Frame 6, right-click the Switch layer (shown here as Man) and select the Front 3/4 view.

- Now move to Frame 12 (the next keyframe), and right-click to select the **Side** view in the Layers window. Your character will rotate to face the side.
- At Frame 18, switch to the **Back 3/4** view.
- At Frame 24, switch to the **Back** view. At this point, your character has turned one-half of the circle.

14. Now select the **Transform Layer** tool. You won't actually use this tool, but you will use the **Flip Horizontal** button later in this tutorial.
15. Advance to Frame 30. In the Layers window, right-click the switch layer, and choose the Back 3/4 view.
16. Next, to make your character continue to spin in the same direction (rather than return in the same direction from which it came), you'll need to click the **Flip Layer Horizontally** button in the **Transform Layer** tool option bar, as shown below.



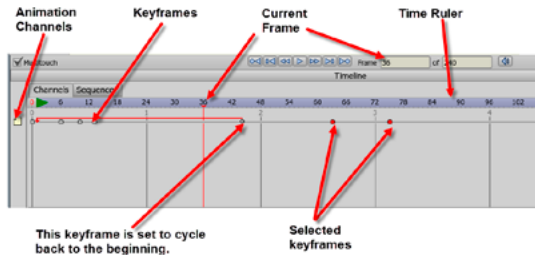
At Frame 30, select the Back 3/4 view and then flip it horizontally.

17. Complete the remaining three frames as follows:
 - Frame 36: Right-click the switch layer to choose the **Side** view.

- Frame 42: Right-click the switch layer to choose the **Front ¾** view.
 - Frame 48: Right-click the switch layer to choose the **Front** view.
18. Save the project if you like, and then play back the animation. You should see your character spin around in a circle.

Chapter 16: The Timeline Window

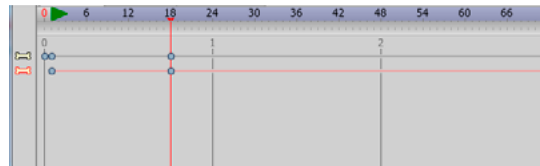
The Timeline window is used when animating in Anime Studio to control the current time, and to control objects' keyframes.



The Anime Studio timeline

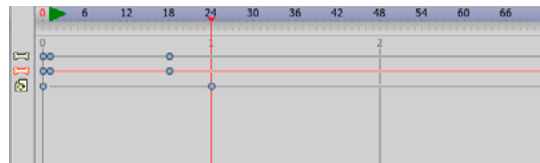
The Timeline window only displays information about the currently active layer in the project. When you switch to a new layer, the timeline panel will update its display to show the new layer's keyframes.

Changes are not displayed in the timeline until you actually create a keyframe change in a channel. For example, you won't see a change in the Bone channel until you actually move a bone.



Animation channels are not displayed in the timeline until you add them to your project

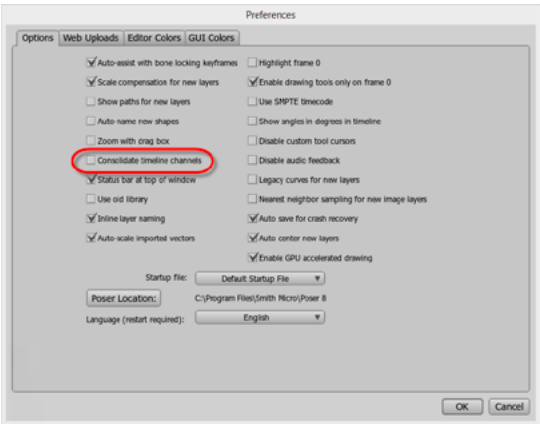
If you then rotate the layer, you'll see the Rotation channel added to the timeline, along with its keyframe.



A rotation channel added to the timeline

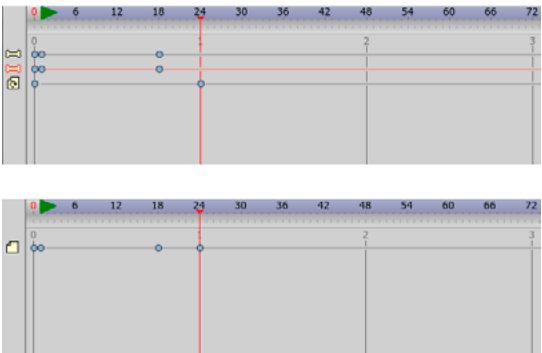
There is a Preferences option that allows you to consolidate timeline channels. This option is off by default in Anime Studio Pro, and on by default in Anime Studio Debut.

what the layer looks like if the Consolidate Timeline Channels option is active (bottom).



Uncheck the Consolidate Timeline Channels option before you delete keyframes

This option combines all changes on a single layer into one line in the timeline. The following image shows an example of a layer that has several channel changes (top), and



A timeline that is not consolidated (top), and a consolidated timeline (bottom)



The consolidated timeline view displays a keyframe when there is a change in any of the consolidated layers. If you delete a keyframe, you may not be sure which type of keyframe you are deleting, or whether or not there are multiple keyframes being deleted at that point. Be sure to uncheck the Consolidate Timeline Channels option in the Preferences dialog before you remove any keyframes from your timeline.

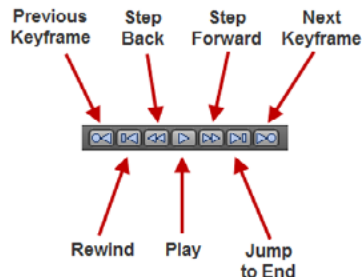
Controlling Time

The top of the Timeline window has controls for setting the current time. Whenever you modify an object in Anime Studio, the modification is recorded at the current time. The process of modifying an object, changing the time, and modifying it again is how an animation is created in Anime Studio.

Time in Anime Studio is expressed in terms of "frames", where there are x number of frames in a second. By default, a new Anime Studio project has 24 frames per second, although this value can be adjusted in the Project Settings dialog.

The first set of controls for adjusting time is a set of VCR-like playback buttons. (These are actually at the bottom of the

main window, not in the Timeline window itself.) From left to right these buttons are: rewind, step back, stop, play, step forward, and jump to end.



Playback controls

Rewind sets the current frame to 0, while jump to end sets the current frame to the last one in the animation (the length of the animation is defined by the shaded area in the time ruler). The step forward and back buttons advance and back up by one frame. The play button plays back the animation in the main editing area, repeating playback in a loop. Finally, the stop button stops playback.

At the top-left of the Timeline window is a text control that indicates the current frame number. You can change the current frame by typing in a new value here and pressing enter.

Directly below the frame field is a sort of ruler that measures time. This time ruler has small tick marks, one per frame, and has labeled frame numbers at intervals along its length. The time ruler also displays the current frame with a red triangular marker above the current frame's tick mark. The time ruler is used both as an indicator of the current time, as well as a control to adjust it. By clicking (or clicking and dragging) anywhere on the time ruler, you can change the current frame.

A certain range of frames in the time ruler are shaded with a darker color. This shaded region indicates the length of your animation. When you play back your animation in Anime Studio or export it as a movie file, this shaded region is the part that will play back. You can change the start and end frames of your animation in the Project Settings dialog, or you can **Alt**-click in the time ruler to set a new start and/or end time. **Alt**-Click with the left mouse button to set the start of your animation, and **Alt**-click with the right mouse button to set the end.

Navigating the Timeline with the Mouse

To navigate through the timeline with your mouse, you can use the following:

- Use the mouse scrollwheel to move the sequencer vertically (up and down through the layers).
- Press the Alt key while you use the scrollwheel to move the playhead right and left through time.
- Right-click and drag to pan left or right through the timeline.
- Use the mouse wheel in Graph mode to zoom in and out of the timeline.



Playing a Partial Segment

Sometimes, you may want to play back just a short segment of the timeline, instead of your entire animation. For example, you may be working on one small move, and you want to play it back over and over while you make small changes to see when you've got it just right.

To set a limited segment of the timeline for playback, hold down the **Ctrl** key (Windows) or **Cmd** key (Mac) while you click in the time ruler. Click with the left mouse button to set the beginning of the segment, and click with the right mouse button to set the endpoint. To remove the limited playback segment, **Ctrl**-click on the segment endpoints to remove them from the timeline.

Animation Channels

Most of the timeline panel is taken up with animation channels, drawn as horizontal bars below the time ruler. Each animation channel displays a certain type of motion or effect that can take place in an Anime Studio animation. These animation channels only appear in the timeline if you have keyframes associated with that particular animation channel.

Different types of layers have different animation channels available. For example, vector layers are the only ones with a point animation channel, and bone layers are the only ones with bone animation channels. At the left end of each animation channel is a small icon that indicates what type of channel it is.

Shown below are the icons for the various types of animation channels. Note that the red-colored channel icons represent animation for the currently selected object.



(If you're ever unsure about which channel an channel icon refers to, just hold your mouse over it momentarily for a tooltip reminder.)



To help reduce visual clutter, not all animation channels have to be displayed at once in the timeline. For example, you won't often have to refer to the Layer Shading channel in the timeline. Hidden channels are still doing their work behind the scenes, they just aren't displayed in the timeline.

Layer Motion Channels

	Layer Translation
	Layer Scale
	Layer Z Rotation
	Layer Y Rotation
	Layer X Rotation
	Layer Horizontal Flip




	Layer Vertical Flip
	Layer Shear

Layer Effect Channels









	Layer Visibility
	Layer Blur
	Layer Opacity
	Layer Shadow
	Layer Shading
	Layer Motion Blur

Camera Channels









	Camera Tracking
---	-----------------

	Camera Zoom
	Camera Roll
	Camera Pan/Tilt

Vector-Only Channels

	Point Motion
	Selected Point Motion
	Point Curvature
	Selected Point Curvature
	Fill Color
	Selected Fill Color
	Line Color
	Selected Line Color


Bone-Only Channels

	Bone Angle
	Selected Bone Angle
	Bone Translation
	Selected Bone Translation
	Bone Scale
	Selected Bone Scale
	Bone Lock
	Selected Bone Lock

Switch-Only Channels

	Switch Layer
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Particle-Only Channels

	Particles On/Off
---	------------------

Working with Keyframes

Keyframes are displayed along the length of an animation channel. A keyframe represents a point in time at which you, the animator, made a modification to an object. For example, if you set the current time to frame 24, then scale the layer, a keyframe will appear in the layer scale channel at frame 24.

Keyframes appear as small markers on the channels. At points in time that lie in between keyframes, Anime Studio automatically calculates how to move an object from one keyframe position to the next.

Keyframes are not just static elements displayed in the animation channels. They can be moved, deleted, and copied. Anime Studio remembers what key frames are selected when you change layers, delete keys, move keys, and so on.

Adding Keyframes

Keyframes are added automatically when you make a change (such as position, rotation, scale, etc) on any object in your project.

Use the **Animation > Add Keyframe** command to add a new keyframe to any animation that already has keyframes.

You can also add a keyframe to the current frame at any time by double-clicking the timeline in any animation channel.

Copying and Pasting Keyframes

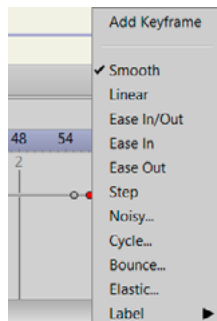
Another way of creating keyframes is to copy an object's position from another point in time. To do this, first select the keyframes you want to copy. Next, press **CMD/CTRL+C**. Now, set the current frame to when you want the copied keyframe to appear (using the time ruler or the step forward/back buttons). Finally, press **CMD/CTRL+V** to place a copy of the keyframes at the current time. When you paste keyframes, they become the new selection so that you can move, scale, or finetune them.

Selecting Keyframes

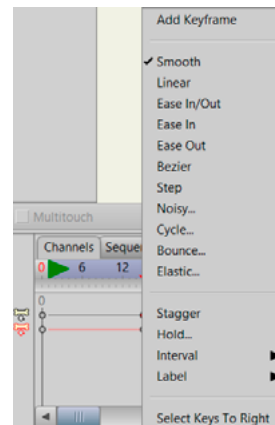
To modify a keyframe, first it must be selected. This is accomplished simply by clicking a keyframe in the timeline panel. A selected keyframe shows up in a highlighted color.

Multiple keyframes may be selected by holding the shift key while clicking on keyframes. Alternatively, you can click and drag a rectangular selection box around the group of keyframes you want selected.

You can also right-click a keyframe and then use the **Select Keys to Right** command in the context menu to select all keyframes that appear in time after the currently selected keyframe. This helps when you need to add space in the middle of a long animation, because you won't have to scroll through to the end of the animation while selecting keyframes manually.



Keyframe context menu



Keyframe context menu

Deleting Keyframes

To delete selected keyframe(s), press the **Delete** key. Deleting a keyframe removes motion from an object.

Moving Keyframes

Keyframes can also be moved by dragging them forward and back in time. If you want some motion to take less time, drag its keyframe to the left. To take more time, drag it to the right.

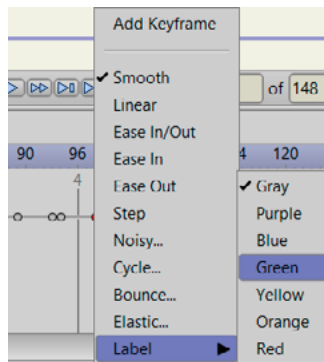


In Anime Studio 9.5 and later, you can move selected keyframes beyond other keyframes.

Coloring Keyframes

You can use color to label the keyframes in your timeline in ways that are meaningful to you. For example, you can assign one color to keyframes that pertain to a particular character in your scene, and another color for another character. This helps you visually keep track of the movements associated with a particular object or group of objects.

To add color to keyframes, select the keyframes that you want to assign color to. Then right-click to display the Keyframe context menu, and choose **Label >** followed by your color choice (**Gray**, **Purple**, **Blue**, **Green**, **Yellow**, **Orange**, or **Red**).



Assigning a color label to keyframes

Editing Multiple Keyframes

If you have a number of keyframes that you want to edit, you can now select multiple keyframes and edit them at the same time. For example, if you want to move an object to a different part of the screen but want to keep the animation of that object the same, you can select all the keyframes and translate them all at the same time. Select all the keyframes for that object and use the mouse

to move the object to the new location. Then release the mouse button to complete the movement.

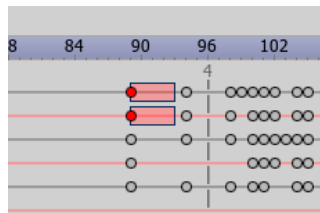
This works for both layer movement and point movement. For example, let's say that you have a circle that squashes and stretches, but you want to turn it into a petal shape. You can select all of the keyframes and then reshape the object on the first keyframe as needed. Then the reshaping will be applied to all of the keyframes that follow.

Hold Durations

There are times when you need to hold an object in the same position for a while, before the animation starts. In cases like this, you can add a hold duration that keeps the object in place for a set number of frames. Place a keyframe in the first frame where you want the object to stay still, and then add a hold duration for the number of additional frames where you want the object to pause.

To directly modify the hold duration for a selected keyframe, hold down the **ALT/OPTION** key while dragging the keyframe in the timeline. A red-colored rectangle will appear in the frames where the keyframe is held in its set position.

You can also right-click the keyframe in the timeline to display the keyframe context menu, and then enter a hold duration (in frames) in the Hold Duration dialog.



Hold durations shown in the timeline.

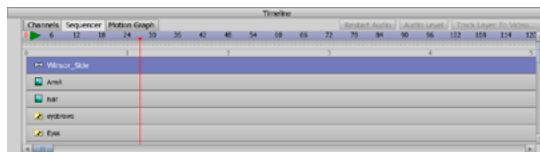
Keyframe Transitions

As mentioned before, Anime Studio automatically calculates what happens in between keyframes. However, you do have some control over this. By default, Anime Studio will compute a smooth transition from one keyframe to the next - most of the time, this is probably what you want. However, you can change the transition type by right-clicking a keyframe and choosing a new method from the popup menu that appears. The transition methods are: smooth (the default), ease in/out (also a smooth motion, but the object starts off moving kind of slowly and slows down again as it approaches the next keyframe), linear (motion is straight from one keyframe to

the next, leading to a somewhat mechanical look to the motion), step (there is no transition at all - the object just jumps from one keyframe to the next), noisy (the object moves in a slightly wobbly motion), and cycle (the value from this keyframe to the next will be taken from some earlier section of the timeline).

Sequencer

The sequencer provides another view of the timeline. It displays each layer as a block of time. Keyframe changes are not displayed in the sequencer, but you can create keyframe changes in this view.



The Sequencer

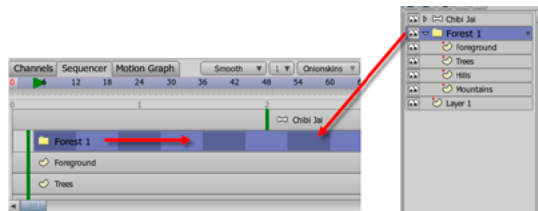
The Sequencer allows you to easily move a layer forward or backward in time. Move the clip toward the left to have it start sooner, or toward the right to have it start later. The green arrow in the time ruler, located at the top of

the Sequencer timeline, indicates the frame at which the currently selected clip will start.

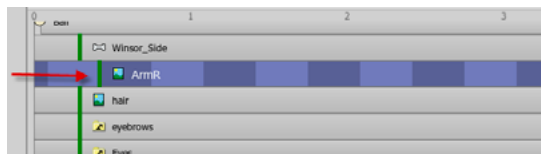


You can also reposition your clips in the Channels timeline view. Select the channel you want to move, then right-click in the Time Ruler to drag the green arrow to the right or left. You'll notice the keyframes and arrow relocate with the mouse.

For example, you can reposition a layer from frame 1 to frame 38, causing the animation in that layer to start at a later time. To move a layer and its sublayers, click the topmost layer and move all of them at the same time. To move a sublayer, click the desired sublayer to move it on its own.

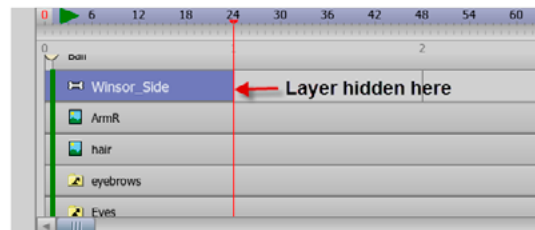
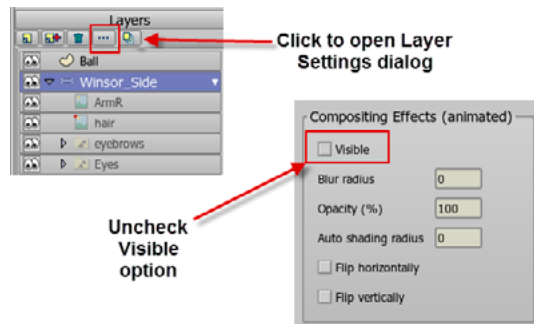


Select a layer to move it and its sublayers



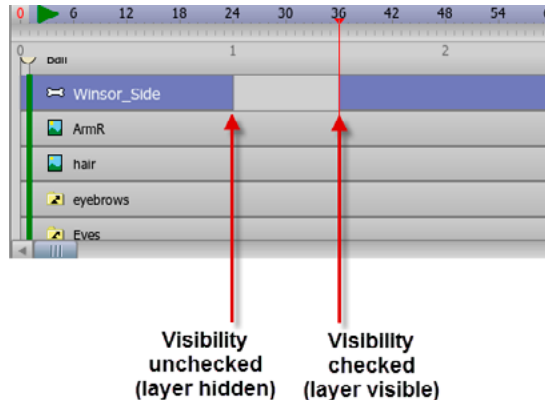
You can also move a sublayer by itself

You can also use the sequencer to show or hide a layer at any time during the movie. Advance to the frame where you want the layer to become invisible. Open the Layer Settings dialog for the layer that you want to hide, uncheck the Visible checkbox, and close the Layer Settings dialog. The contents in the layer will disappear in the project window, and the track in the sequencer will appear as though it ends at the point where it was hidden.



Check or uncheck the Visible setting in the Layer Settings dialog to show or hide a layer

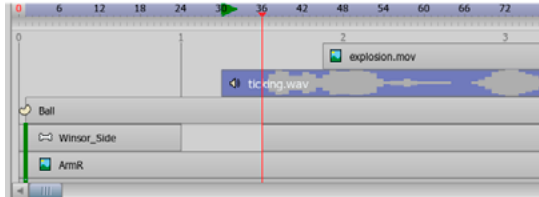
To make the layer reappear later in the timeline, repeat the process. Select the layer you want to unhide, open the Layer Settings dialog, and check the Visible checkbox. After you close the Layer Settings dialog the layer will reappear in the sequencer.



The sequencer shows a break where the layer is hidden
If you import an audio file, it has a fixed duration in the sequencer. You can see where the sound effect will happen. Say you want a pop to happen when your

character disappears from the scene. You can place the pop in the right place.

It works the same way if you import a video layer. For example, if you want an explosion to happen just before the pop, you can import a video layer and place it just before the sound effect.



You can precisely place audio and video files in Sequencer view

Chapter 17: Other Windows

Audio Recording

Anime Studio allows you to record audio tracks within the application. Select **Window > Audio Recording** to open the Audio Recording palette. You will see the following controls and settings:

- **Record Button:** Press the Record button to start a recording. After you have recorded the content you want to record (speech, sound effects, etc.), press the same button to stop the recording.



You can start a recording at any selected frame in the timeline. Simply select the frame at which you want the recording to begin, and start your recording at that frame.

- **Play Button:** After the recording is complete, press the Play button to hear the recording.
- **Sync with Timeline Playback:** If this box is checked, the timeline will play back while you record the audio (and

when you play back the audio). This lets you record in sync with the visuals if you choose to do so.

- **Microphone Drop-Down List:** Selects the microphone that you want to use for audio recording.
- **Pitch Shifting:** Use the Pitch Shifting slider to raise or lower the pitch of the recording. Move the slider toward the left to lower the pitch, or toward the right to raise the pitch. The Reset button returns the recording to its original pitch.
- **Add to Project:** Once you are satisfied with the recording, click this button to save the recording as a WAV file. The WAV file also appears in the Layers window as a new audio layer, and in the timeline of your current project.

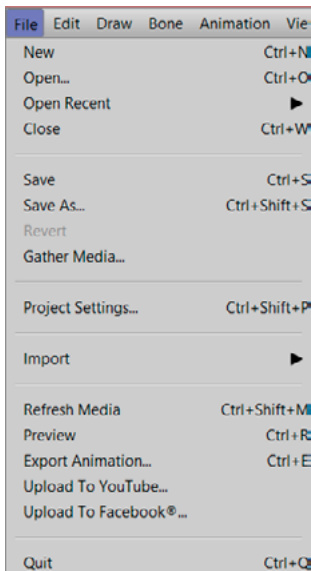
Chapter 16: The Timeline Window



Audio Recording Window

Anime Studio Menus

Chapter 18: File Menu New



File Menu

Creates a new, empty Anime Studio project using the default project settings (NTSC D1, 720 x 534 pixels). Use the Project Settings command ("[Project Settings...](#)" on [page 233](#)) to change your project settings if desired.

Multiple Document Support

Anime Studio 10 allows you to have multiple documents open at the same time. When you create a new document, it will open in a new tab and keep existing documents open in their own tabs.

You can use the **View > Show Document Tabs** command or the keyboard shortcut **Command/CTRL+Shift+J** to show and hide the document tabs in the interface. If the tabs are hidden, you can select documents in the following ways:

- Open documents will appear in a list at the bottom of the View menu. Select one of the documents in the list to bring it to the foreground.
- To switch to the next document press **Ctrl+Tab** (Windows) or **Alt+Tab** (Mac).

- To switch to the previous document press **Ctrl+Shift+Tab** (Windows) or **Alt+Shift+Tab** (Mac).

Autosave files are generated for all open documents. If the application doesn't shut down properly for some reason, a dialog will give you the opportunity to reopen them the next time you launch Anime Studio. Viewport settings and tool selections will also be restored.

Open...

Prompts you to open a Anime Studio project file that was previously saved to disk. The Open dialog allows you to select multiple documents. You can also drag one or more documents from Windows Explorer or Finder to open them in Anime Studio. Each document will open in its own tab. See [“Multiple Document Support” on page 230](#) for more information.

Open Recent

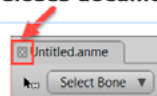
Displays a list of recent files that you can reopen. Files that have been moved or deleted since saving them will automatically be removed from the list.

To clear the list of recent files, choose **File > Open Recent**, and click the **Clear Menu** command at the bottom of the list.

Close

Closes the current project. You can also close a document by clicking the **X** that appears in the left side of the document tab when you hover over the tab.

Closes document



Click the X in the tab to close the current document.

Save

Saves the current project to disk.



Your Anime Studio project is automatically saved every 30 seconds while you work, to a temporary location on your hard drive. If the application crashes, you will be asked if you want to reopen the previous project the next time you start Anime Studio.



Anime Studio documents are now saved with a preview thumbnail. By default the it generates a thumbnail that is 128 x 128 pixels. You can set thumbnail preferences in the Preferences dialog. See "[Options Tab](#)" on page 252 for more information about thumbnail options.

Save As...

Prompts you for a name and location, then saves the project to disk.

Revert

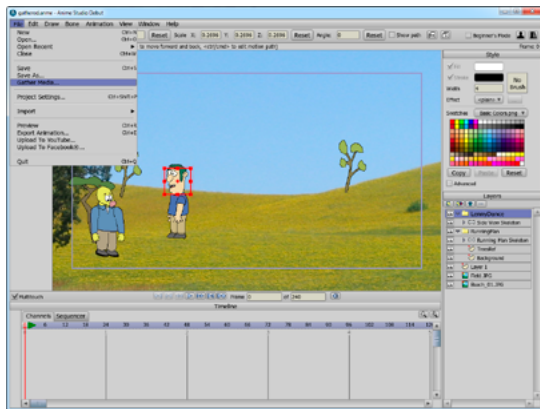
Revert the current document to its last saved state.

Gather Media

When you import something into an Anime Studio project, such as an image, movie, or audio file, the original locations of the imported objects are only referenced within the Anime Studio project. In other words, they are not actually part of the project file itself, rather the project file links to the files on your disk(s).

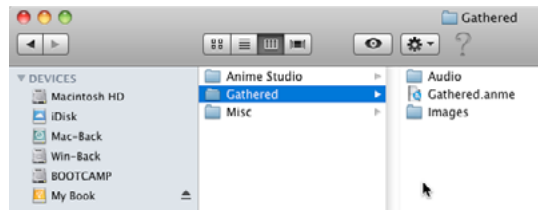
If your project contains many external files, we recommend that you place them in a common folder. When you do that, you have a self-contained folder that you can copy, archive, or move the project and the project will still work.

If you haven't kept your files in a single folder, the **File > Gather Media** command allows you to create a single location for all related project files. This is very useful if you need to send your project to someone else for collaboration or for technical support.



Gather Media command

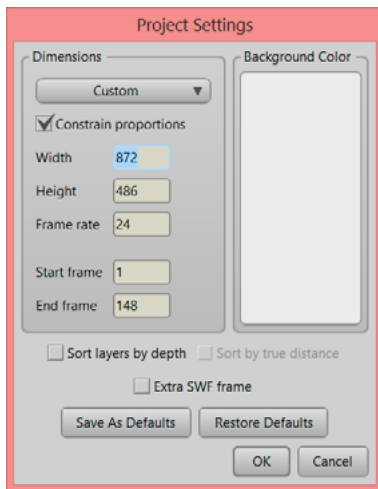
After choosing the command, you are prompted to select or create a folder in which to store the project-related files. You then enter a name for the gathered project and click Save to save it to the selected folder. When you look in the folder, you will see the Anime Studio project file, along with Audio, Images, and/or Movies folders that store the collected media associated with it.



A Gathered Media folder

Project Settings...

Brings up the project settings dialog. As seen below, the project settings dialog lets you control the pixel width and height of the project, as well as the number of frames per second. You're free to change these values at any time, although it's easiest if you set up the values you want before you start creating your animation (particularly the frame rate). Also in this dialog, you can set the start and end frames of your animation, defining how long the overall animation will be.



The Project Settings dialog

Dimensions

- **Dimensions menu:** Allows you to set Custom dimensions, or choose from a wide variety of presets. Presets include the following:
 - **Custom:** Allows you to enter or edit your own settings.
 - **NTSC D1:** 720 x 534 pixels, 24 frames per second
 - **PAL D1/DV:** 788 x 576 pixels, 24 frames per second
 - **480p Widescreen:** 852 x 480, 24 frames per second
 - **VGA:** 640 x 480 pixels, 24 frames per second
 - **Web:** 320 x 240 pixels, 24 frames per second
 - **Web Widescreen:** 426 x 240 pixels, 24 frames per second
 - **YouTube:** 480 x 320 pixels, 24 frames per second
 - **iPhone:** 480 x 320 pixels, 24 frames per second
 - **Android:** 480 x 360 pixels, 24 frames per second
- **Constrain Proportions:** This option allows you to maintain the aspect ratio of your animation project. When the option is checked, you can enter a new width or height, and the other dimension will

automatically change to maintain the same width-to-height aspect ratio. If you choose one of the preset configurations from the Dimensions drop-down list, it will ignore the Constrain Proportions option and resize your project to the dimensions specified in the selected preset.

- When you select a preset, the following settings appear below.
 - **Width:** The width, in pixels
 - **Height:** The height, in pixels
 - **Frame Rate:** The number of frames per second in the animation.
 - **Start Frame:** The starting frame of the animation.
 - **End Frame:** The ending frame of the animation.

Background Color

- **Background Color:** Sets a background color for the project - just click on the color swatch.

Other Settings

- **Sort Layers by Depth:** The "Sort layers by depth" checkbox allows top-level layers in Anime Studio to

move in front of and behind each other during an animation. Normally, layers are drawn in the order they appear in the Layers window. However, with this option turned on, layers are displayed according to how far they are from the camera. See **"Tutorial 5.5: Sorting Layers by Depth" on page 207 in your Anime Studio Tutorial Manual** for an example of using this feature.

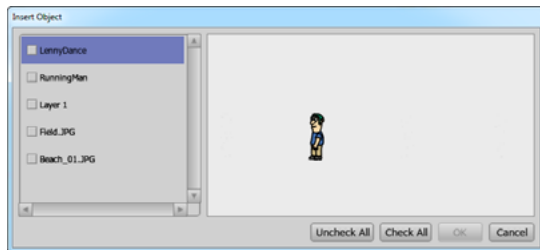
- **Sort by True Distance:** Typically, layers are sorted by their depth from the camera, but if you're trying to create a 3D object using multiple Anime Studio layers (like a cube or pyramid), you may want to turn on "Sort by true distance". This tells Anime Studio to sort layers by the distance from the camera to the layers' origins, rather than by depth. Usually this option will be left unchecked.
- **Extra SWF Frame:** Check this option to add an extra frame at the end of the video
- **Save as Defaults:** When you create a new project in Anime Studio, your animation defaults to 320x240 pixels at 24 frames per second. If you create most of your projects at different settings, you can change these defaults. Just type in new values in this dialog, and click "Save As Defaults" to make the new settings the default settings for all new projects.

- **Restore Defaults:** Resets the project to the default values.

Import

Anime Studio can import several kinds of other media files into an animation project. The commands in this sub-menu let you import these files.

- **Anime Studio Object:** This command will ask you to choose a Anime Studio project file. Once you've chosen a file, a list of layers in the project will show up in the dialog



The Insert Object dialog

Checkboxes appear to the left of each of the items in the scene you want to import. Check one or more of the layers to add it to your own project (a preview of the selected layer appears on the right side of the dialog. The Uncheck All or Check All buttons can be used to deselect or select all of the items in the project. Press OK to copy the selected layers into your open project, including any animation in the layer. This is an easy way to share objects between project files and reuse bits of animation here and there.

Several files are included with Anime Studio that contain scenery, characters, props, etc. You are welcome to include these in your own projects by using this menu command.

- **Image** Imports an image file as a new Image layer. The most common type of file to import into Anime Studio is images. It doesn't matter how the images are created, so feel free to use pictures from digital cameras, backgrounds from scanned drawings or painted on the computer, textures, computer-generated 3D scenery, etc. The image formats supported by Anime Studio are: JPEG, BMP, Targa, GIF, and PNG. Generally, we recommend PNG, since the PNG format provides for variable levels of transparency, allowing you to create non-rectangular images that can blend in smoothly with other elements in the scene.

- **Movie:** Imports a movie file as a new Image layer. Anime Studio supports importing QuickTime (Windows and Mac OS) and AVI (Windows only) movie files. A movie that you import into Anime Studio will play back along with the Anime Studio animation, allowing you to combine 2D and 3D elements, or to composite an Anime Studio animation on top of a pre-recorded video sequence. On Windows, if you have problems importing QuickTime movies, then you probably need to download and install QuickTime (<http://www.apple.com/quicktime/>). Anime Studio will also import native Moho files (files ending with .moho).
- **Audio File:** Loads a sound file to be used as a soundtrack for the current animation. The audio formats supported by Anime Studio are listed in “Appendix A: Product Comparison” on page 285. This command is the same thing as “Select Soundtrack” in the Animation menu. Anime Studio has limited support for audio, but you can import a single sound file as a soundtrack for your animation. Anime Studio uses libsndfile to handle sound files (see <http://www.mega-nerd.com/libsndfile/>), so any format that libsndfile supports is fair game. Generally, it's best to stick with uncompressed WAV or AIFF files.

The lower section of the **File > Import** menu displays several different categories that allow you to open

content that is furnished with Anime Studio. You will also find these items in the Library (see “Chapter 14: The Library Window” on page 182). In the Import menu this content is arranged in the following categories: **Audio**, **Characters**, **Effects**, **Images**, **Props**, **Scenes**, and **Video**.

Import Notes and Tips

Referenced Files

Please note that Anime Studio references the directory location of images, OBJ's, sound files and movies files that have been imported for use. When exporting into movie format, Anime Studio continues to reference this directory location. Moving referenced items from one location to another will prevent the item from being displayed or heard. We recommend that all items used in your animations or artwork accompany it's native file format (ANME) and final exported format.

Startup Folder

Adding your own .anme file to the “Startup Folder” (located in the root directory of your Anime Studio

installation) will always make Anime Studio open this .anme document first when it's initially launched. Please make sure to rename your .anme file to "StartupFile.anme".

Moho Files

Anime Studio will also import native Moho files (files ending with .moho).

Library Content

Please read Section 6 of the EULA (End User License Agreement) for rules on using the content that has been supplied with your version of Anime Studio. Please note that when importing existing content/movies from the Anime Studio Content Library using the **File > Import** option, some animations/movies exceed the default "End Frame". This will prevent you from seeing the full movie. To adjust the default "End Frame" settings, please select **File > Project Settings** and change the field beside "End Frame". You can also double click the movie/content file you would like to view from within the Content Library. To access the Library, select **Help > Open Content Library**.



The Library content files (characters, props, etc.) are installed in a shared documents location on both Windows and Macintosh. This allows multiple users on the same computer to share library resources, and to install additional content that they might download (from Content Paradise, for example). On Windows systems in particular, it can be difficult to add new files to the Program Files directory when running newer versions of the Windows operating system, which is why the shared documents location is used.

Photoshop Tips

Exporting from Photoshop

Anime Studio is equipped with a Photoshop export script that will give you the ability to take your PSD files and export them into .ANME format. The .ANME format is the native Anime Studio format. This process helps users from having to re-draw or export individual layers as images into Anime Studio.

The PSD to ANME script is named **Export Layers To Anime Studio.jsx**. To access this script, please make sure you've configured a content location as described in ["Creating](#)

a [Content Folder](#)" on page 7. The script will be copied into that folder.

To use the script within Adobe Photoshop, copy the **Export Layers To Anime Studio.jsx** file to your `.../Photoshop/Presets/Scripts` folder. You should then be able to open up a Photoshop document, run this script from **File > Scripts > Export Layers to Anime Studio**, and it will generate a new Anime Studio file complete with an image layer for each original Photoshop layer. Basically, the script converts PSD formatted files to .ANME files. It exports every layer that was created originally in Adobe Photoshop and makes it completely readable when imported into Anime Studio. All versions of Adobe Photoshop since version 7 should support this script.

The script exports the following 2 things: Firstly, it converts the PSD file into a .ANME file. Secondly, all the individual layers of the PSD file are converted into individual PNG files and are placed in a folder of the same name as the .ANME file. The folder with the PNG's and the newly converted .ANME file will be located side by side. It is important to note that whenever you open the .ANME file, it will reference the PNG folder. So please keep them side by side. If the PNG folder and the newly converted .ANME are not located in the same folder, the layers within your newly opened .ANME will not work properly in Anime Studio.

Chapter 18: File Menu

Refresh Media

The **File > Refresh Media** command (or the keyboard shortcut **Command/Ctrl+M**) causes Anime Studio to check the modification dates of all of the media that is referenced in the project, and will reload the media that has changed.

Preview

Generates a preview image of what your project will look like. If you're in the process of animating your project, the image will be of the current frame in your animation. A preview image does not contain all the fill styles, and is of lower quality, but is quicker to generate than a fully rendered image.

When the Preview window opens up to display your work, you can save the preview as a still image, using the popup menu in the Preview window. By default, the file will be named with the name of your project, followed by the frame number.

The following options are available in the Preview window:



Preview window.

- **Render Cache:** Click to place a preview render in your render cache. By default you can store up to 100 preview images in your render cache, which has to be located in a User Content folder. If you did not set up a User Content folder during installation, you can choose the **Help > Set Custom Content Folder** to configure one. See ["Set Custom Content Folder" on page 283](#) for more information.

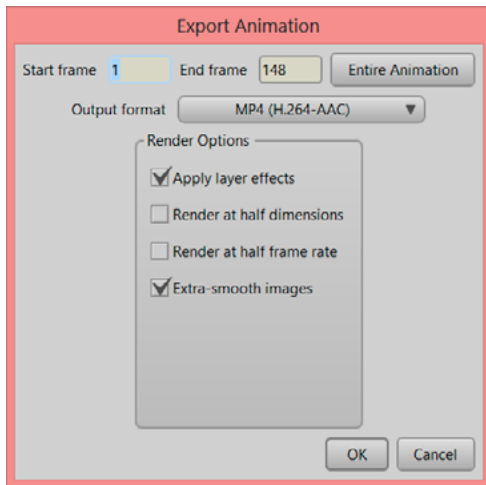


The **Options** tab in the **General Preferences** dialog allows you to specify the number of images stored in your **Render Cache**. See ["Options Tab" on page 252](#) for more information.

- **Save As:** Expand the menu to choose the file format (JPG, BMP, Targa, or PNG). You can also copy the image to a clipboard and paste it into another application.
- **Zoom:** Move the scrollbar left or right to zoom in and out of the image. You can also use the mouse scrollwheel to zoom in or out.
- **Percentage field:** Allows you to enter a zoom percentage value.
- **Restore Defaults:** Resets the preview window to the default zoom level.

Export Animation...

This command brings up a dialog that lets you export an animated sequence and save it to disk. The Anime Studio project file is where your work is saved, but to view the animation as a movie, to put it on the web, or to work with it in other programs, you have to export the animation.



The Export Animation dialog.

The options in this dialog are:

- **Start Frame:** Enter the start frame for your exported movie here.
- **End Frame:** Enter the end frame for your exported movie here.
- **Entire Animation:** Press this button to reset the start and end frames to include all frames in the movie
- **Output Format:** The options in the Export Animation dialog are described in ["Saving Movies in Windows" on page 242](#) and ["Saving Movies in Mac OS X" on page 243](#):
- **Apply layer effects:** If this box is unchecked, Anime Studio will skip layer effects like layer shadows and layer transparency.
- **Render at half dimensions:** Check this box to render a smaller version of your movie. This makes rendering faster if you just want a quick preview, and is useful for making smaller movies for the web.
- **Render at half frame rate:** Check this box to skip every other frame in the animation. This makes rendering faster, and results in smaller movie files.
- **Extra-smooth images:** Renders image layers with a higher quality level. Exporting takes longer with this option on.

When exporting a movie, Anime Studio will include an alpha channel if the codec you're using supports it. This makes it possible to composite Anime Studio movies with other media in a video editing program.

If you're using QuickTime, set the color depth to "Millions of Colors+". The "+" is QuickTime's indication of an alpha channel. The codecs that support this include Animation, None, PNG, TGA, and TIFF.

AVI on Windows doesn't include any built-in codecs that support alpha channels. However, at least one such codec does exist, and you can download it for free - the Huffvuv codec found at <http://neuron2.net/www.math.berkeley.edu/benrg/huffvuv.html>.

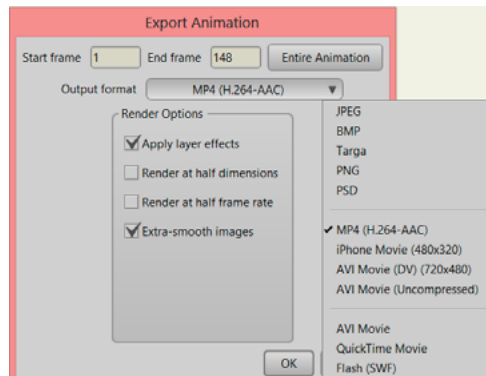
Anime Studio can only export to a maximum size of 900 pixels x 900 pixels and 3000 frames. (Anime Studio Pro does not have this limitation.)

Saving Movies in Windows

The Export Animation dialog also has several options for adjusting the output quality of your animation. These default to the highest quality rendering, but you may

sometimes want to lower the quality to increase rendering speed or to output animations with smaller file sizes for streaming over the internet.

Supported formats for Windows include the following:



Movie Export Formats: Windows.

- **Image:** Supported image formats are JPEG, BMP, Targa, PNG, or PSD.

- **MP4 Movie (H.264 AAC):** (Windows 7 and higher only). Saves the movie in mp4 format using an H.264 video and AAC audio codec.
- **iPhone Movie:** (Windows 7 and higher only). Saves the movie as a 480 x 320 file in m4v format.
- **AVI Movie (DV):** (Windows XP and higher only). Saves the movie as a 720 x 480 file in avi format.
- **AVI Movie (Uncompressed):** (Windows XP and higher only). Saves the movie in avi format using an uncompressed video codec. Expect these movies to be large compared to a compressed format like DV.
- **AVI Movie:** (Windows XP and higher only). Saves the movie in avi format. In the next dialog, the user will be prompted for the video codec of the export.
- **QuickTime:** (Mac and 32-bit version of Anime Studio for Windows only, not available in Anime Studio 64-bit Windows). Saves the movie in QuickTime (mov) format. In the next dialog, you will be prompted for the video codec and quality of the export.



On Windows, this output format only appears in the 32-bit version of the software and QuickTime must be installed

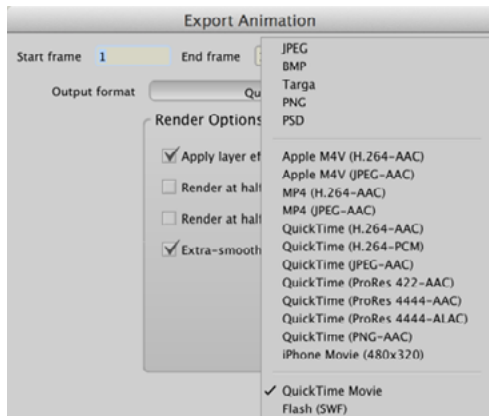
- **Flash (SWF):** Exports your animation to a Flash SWF file, using the dimensions of your project.

Saving Movies in Mac OS X

When saving movies from Anime Studio on the Mac, you can select from the following choices in the **Output Format** menu.



For further information about these formats, see your QuickTime documentation.



Movie Export Formats: Macintosh.

- Image formats include JPEG, BMP, Targa, PNG and PSD:
- Movie formats include the following:
 - **Apple M4V:** Available in two formats. H.264-AAC and JPEG-AAC.

- **MP4:** Available in two formats. H.264-AAC and JPEG-AAC.
- **QuickTime:** Available in seven formats. H.264-AAC, H.264-PCM, JPEG-AAC, ProRes 422-AAC, ProRes 4444-AAC, ProRes 4444-ALAC, and PNG-AAC.
- **iPhone Movie:** Available in 480x320
- **QuickTime:** Saves the movie in QuickTime (mov) format. In the next dialog, you will be prompted for the video codec and quality of the export.



When choosing a compression format or codec for export, keep in mind that viewers must also have the same codec available to view the file. We recommend that you select a basic compression format/codec that is installed with Mac OS X.

- **Flash (SWF):** Exports your animation to a Flash SWF file, using the dimensions of your project.

Quality choices allow you to choose a range of movie qualities between Maximum and Minimum, with the default selection being High quality. The higher the quality, the larger the file size will be, and the longer it will take for others to download.

After you select your format and quality, choose Save to render the QuickTime Movie.

Exporting Flash

Anime Studio can also export Flash files in SWF format. Flash is a common vector animation format on the Web. When exporting Flash, Anime Studio will also include the soundtrack (if any), if the soundtrack is in MP3 format. If you plan on exporting Flash files, it is important to read "[How to Create Efficient Flash Files](#)" on page 246.



If you plan to export your animations to Flash (SWF) format, you will need to use MP3 audio files instead of WAV audio files. In addition, if you plan to render to SWF format, you can only use a single audio file in the project.

Flash Tips

Advice for working with Anime Studio and Flash

Among the other export formats that Anime Studio offers, you also have the option to output Flash SWF files. SWF is a format created by [Adobe](#) as a way to deliver animated vector artwork and interactive applications. Flash animations are very common on the web, and most users already have the Flash player installed on their computers.

Chapter 18: File Menu

Because Anime Studio is also vector-based, there are enough similarities to make it possible for Anime Studio to export SWF files.

However, Anime Studio and Flash are not completely compatible. Therefore, not all the features of Anime Studio can be exported successfully to Flash. In addition, because Flash is a web format, small file size is important - there are certain issues to keep in mind when working with Anime Studio if Flash is your intended output format.

When exporting SWF files, you may want to use Macromedia's Flash authoring tool to combine multiple SWF files, add extra elements, sound, etc. Be aware that Anime Studio's SWF files are compatible with Flash MX and later - Flash 5 and earlier are not able to load Anime Studio-created SWF files.

What Can be Exported

Most common objects in Anime Studio can be exported to Flash. These include:

- Vector layers
- Fills/Outlines/Colors
- Transparency
- Gradients

- Variable-width lines (try to use these sparingly - see below)
- Bone warping of vector layers
- Image layers (PNG and JPEG only, and only if they are not warped by a bone layer)
- Particle layers (careful - a complex particle effect can easily overwhelm Flash)
- A soundtrack can be exported if it's in MP3 format, and at either 44100 Hz, 22050 Hz, or 11025 Hz sample rate. If you want your SWF file to contain audio, make sure that your project contains **only one audio track**, and that the audio track is in MP3 format. In order for Anime Studio to play MP3 format audio files, you must have QuickTime installed
- Layer effects (shadows, shading, layer blur, motion blur, etc.)
- Image warping or 3D movements in image layers
- Image layers that use progressive JPEG images (Flash can't handle progressive JPEG images)
- Layer masking
- 3D layers
- Multiple audio tracks, or audio tracks other than MP3 format

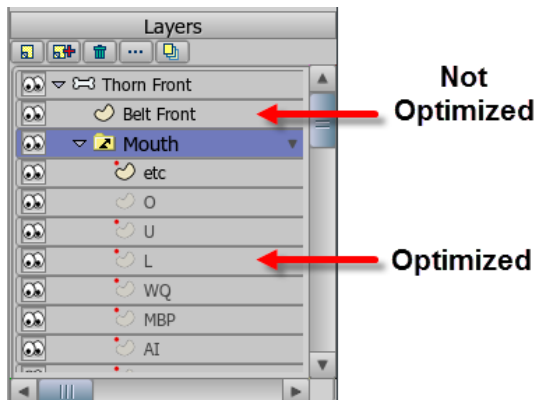
What Can't be Exported

On the other hand, some things in Anime Studio are just not compatible with Flash, and cannot be exported to a SWF file. The following list covers the most important of these objects and effects.

- Brushes
- Fill and line effects (except gradients)

How to Create Efficient Flash Files

When you're creating an animation with the intent to produce an SWF file as output, there are several things to keep in mind. An important concern with SWF files is keeping the file size down. The key way to do this in Anime Studio is to keep as many layers "optimized" as possible. An optimized layer when exported to SWF will take up much less space than a non-optimized one. (For other formats, like QuickTime or AVI, it doesn't matter.) You can tell which layers are optimized by looking for a little red dot next to the layer's icon in the Layers window:



Notice the red dot by the optimized layer.

A new layer is optimized to start with, but depending on the effects you apply, that optimization can go away. The following things will “de-optimize” a layer. Note: a non-optimized layer will still export to Flash, it just won’t be nearly as efficient.

- 3D camera movements (this will de-optimize all layers in the project, so it should be avoided if possible when targeting SWF)

Chapter 18: File Menu

- 3D layer rotation (X or Y rotation, or perspective rotation)
- Layer shear
- A group layer that has 3D rotation or shear will cause all of its sub-layers to be non-optimized
- Uneven scaling in the X and Y directions
- Point animation
- Bone animation is a common cause of non-optimized layers. What’s happening is that because Flash doesn’t have a bone system like Anime Studio, Anime Studio needs to export a lot of extra information for Flash to be able to produce the same effect. One way to use bone animation and to stay optimized is to attach a vector layer to a single bone, instead of letting the bones warp all the points in the vector layer. The vector layer will then remain optimized. While you can’t do this in all cases, sometimes you can break up a character into multiple body parts - some parts will be warped with the bones, and some will be attached to a single bone. At least some parts of the character can remain optimized.

Here are some other things to think about when exporting to SWF:

- Consider using a lower frame rate (12 fps, for example) for your animation. Fewer frames means a smaller file.
 - If some of your layers can do without any animation at all, or just layer translation/scaling/rotation (background scenery, props, background characters, etc.), that can save a lot of space.
 - If most of a layer is stationary, except for one small object, move that object into its own layer if possible. Example: a character who is waving his arms, but is otherwise still - move the arms into a separate layer from the rest of the body. The body will remain optimized and take up much less space.
 - If an object sits still for a time with no animation, consider replacing it with a non-animated object for that time period.
- resulting SWF file will be smaller, and will load quicker over the web.
- 3D camera moves - no Flash optimization is possible when you're moving the camera around in 3D. Simple side-to-side pans and zooms are OK, but when you start using camera pan/tilt, Flash efficiency goes down the drain.
 - Try to use as few control points as possible in your vector artwork.
 - The freehand tool and the insert text dialog can generate a lot of points, resulting in a big SWF file.
 - Limit the use of variable-width lines. It's easy to overwhelm Flash with the complexity of variable-width lines, making the resulting SWF file play back unpredictably. Read "Flash Movie Size Limit" at http://kb2.adobe.com/cps/144/tn_14437.html for more information. If possible, only use variable-width lines in SWF-optimized layers.
 - Avoid compound shapes (two adjacent circles filled as one, shapes with holes, or figure 8's).

What to Avoid

If your goal is to create a SWF animation, there are some things you should try to avoid. Besides the effects that just are not possible to export, you should try to avoid the following effects if possible. These are all things that can be exported - it's just that they make for a less efficient SWF file. Of course, you won't want to avoid all of these things all of the time. However, if you plan your animation carefully, and use as few of the following effects as possible, the

Chapter 18: File Menu

Exporting Still Images

Finally, you can export an animation as a sequence of numbered still images. This option is not used very often, but sometimes for certain post-processing tasks, you may prefer to work with a sequence of separate still image files. You can choose between JPEG, BMP, PSD, Targa, or PNG.

Upload to YouTube

The **File > Upload to YouTube** command allows you to upload your Anime Studio animation to YouTube. After choosing the command you are prompted to locate the animation that you want to upload. Before performing the upload, you will need to enter your YouTube Username and Password in the Web Uploads tab of the Preferences dialog, as discussed in “Web Uploads:” on page 255.

Upload to Facebook®

The **File > Upload to Facebook** command allows you to upload your Anime Studio animation to your page on Facebook. After choosing the command you are prompted to locate the animation that you want to upload.



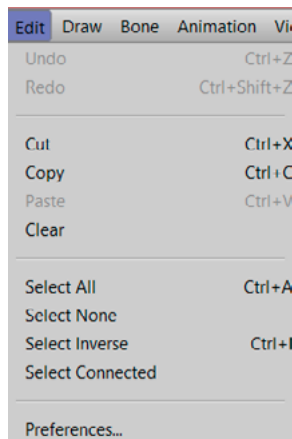
Before using this features, you will need to sign in to your Facebook account and authorize Anime Studio as an application that can upload to your Facebook account.

After logging in to your Facebook account and choosing the **Upload to Facebook** command, your browser will display a screen that prompts you to allow the **Smith Micro Software Video Uploader** to upload files to your Facebook account. Click the **Allow** button to enable this feature, and then the upload will continue. You should only need to authorize the uploader the first time you use it

Quit

Quits Anime Studio. Anime Studio will prompt you to save any unsaved projects before closing.

Chapter 19: Edit Menu Undo



Edit Menu

Choose this command to undo the last operation. You may undo up to 8 of your most recent editing operations in Anime Studio.

You will not receive a warning when you undo an operation. You will be able to undo the operation by using the **Edit > Redo** command.

Redo

This command will redo the last operation that you “undid” with the Undo command.

Cut, Copy, Paste

These are the traditional clipboard commands. They can be used together with the Draw editing tools for vector layers, and operate on the currently selected group of points.

Clear

This command is the same as pressing the backspace or delete key: the currently selected object in the working area will be deleted from the project.

Select All

Selects all the points in the active vector layer.

Select None

De-selects all the points in the active vector layer.

Select Inverse

Selects the opposite points in the active vector layer. Selected points will become de-selected, and de-selected points will become selected.

Select Connected

Selects all points that are connected to any other currently selected points. For example, if you have a complex shape like a character's head, just select a few points on it, then

choose this command: if all the points on the head are somehow connected together, the whole head will now be selected.

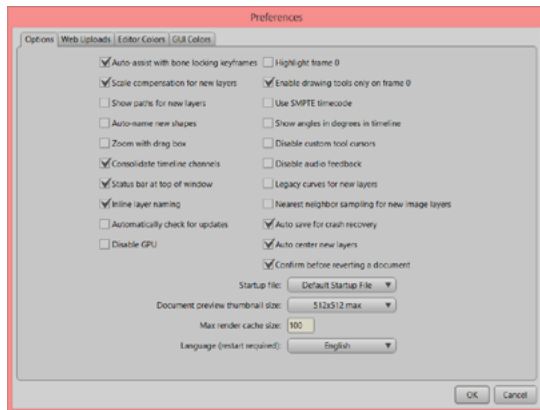
Preferences...



Mac users will find the Preferences command in the Anime Studio menu category.

Brings up a dialog that lets you customize some aspects of Anime Studio, such as the display colors used in the working area of the Anime Studio window. Some of these features including Edit Colors and GUI Colors are only available in Anime Studio Pro.

Options Tab



Options

- **Auto-assist with bone locking keyframes:** Adds an extra keyframe when bones are locked or unlocked to prevent them from “drifting”.
- **Scale compensation for new layers:** When a layer is scaled up (or down), its lines get thicker (or thinner) to match. If you don’t want this behavior, turn off this

option. You can also control this on a per-layer basis in the Layer Settings dialog. This option controls it for any new layers you create.

- **Show paths for new layers:** Determines whether the paths (previously called construction curves) are displayed for new layers. They’re always shown for the selected layer, but usually hidden otherwise.
- **Auto-name new shapes:** Shapes can be named by the user. If this is turned on, all bones and shapes get names like “1”, “2”, etc.



Anime Studio names bones automatically as you create them. For more information, see “Add Bone” on page 70.

- **Zoom with drag box:** When this option is on, allows you to draw a box around the area that you want to zoom into, rather than using a continuous zoom.
- **Consolidate timeline channels:** Instead of showing separate channels (point animation, bone animation, layer translation, layer rotation, etc.), this option groups all channels into one in the timeline palette. This is on by default in Debut, and off in Pro.

- **Status bar at top of window:** Shows the status bar at the top of the window, rather than the bottom. The status bar is where tools show their descriptions, like what modifiers keys do what, etc.
- **Inline Layer Naming:** Allows you to name the layer in the Layers panel when you create a new layer.
- **Automatically check for updates:** When this option is checked, Anime Studio will automatically check for updates upon startup. Uncheck this option if you prefer to manually check for updates.
- **Highlight frame 0:** If on, a red box is drawn on the canvas if the current time is set to 0. This can be helpful to remind you when you're working on frame 0 (the setup frame) vs. some other frame.
- **Enable drawing tools only on frame 0:** Creation tools (Add Point, Freehand, Draw Shape, Add Bone) are only available on frame 0 if this option is on. Otherwise, they can be used at any time.



In Anime Studio, there are certain tasks that can only be performed on Frame 0, many of which pertain to rigging. Beginning with Anime Studio 10, when you move to Frame 0 in your project, each layer will go to its own "Frame 0," regardless of where it starts in the project timeline. If a layer starts before Frame 0, you will now be able to make edits to that layer without moving it back into the project timeline.

- **Use SMPTE timecode:** Shows time in the timeline using SMPTE timecode instead of frame numbers. SMPTE timecode looks like this: **00:02:34:07** That would be 0 hours, 2 minutes, 34 seconds, and 7 frames.
- **Show angles in degrees in timeline:** Angle values (like layer rotation or bone rotation) are shown in radians in the timeline's Motion Graph. This is because angle values in radians are smaller numerically and fit in better with other values in the graph. But if the user chooses to, they can display these curves using degrees with this option.
- **Disable custom tool cursors:** A long time ago there was a bug on some Windows systems where tool cursors didn't display correctly. Turning on this option will just use the standard system arrow cursor, regardless

of what tool is active on the canvas. It may not be needed anymore (I'm not sure if that bug happens for anyone these days).

- **Disable audio feedback:** When welding points, you hear a “clicking” sound in Anime Studio. Turning this option on will disable the click.
- **Legacy curves for new layers:** When checked, uses the old style curves, rather than the smoother curves found in Anime Studio 8 and later.
- **Nearest neighbor sampling for new image layers:** When an image is scaled up larger than its original size, Anime Studio will try to smooth out the areas in between pixels to create a smoother image. Turn this option off if you want the enlarged image to appear blocky.
- **Auto save or crash recovery:** When turned on, Anime Studio will automatically save your work every thirty seconds to a temporary file. If the application crashes, you can recover your work the next time you start the application. In the event that you are working on very large files and your workflow is slowed down by saving every thirty seconds, you can turn this option off to improve performance.
- **Auto Center New Layers:** If the camera is in its default position (such as it would be in a new document) this option won't do anything. The option will become noticeable if you have moved the camera (for example, if you are looking 90 degrees to the left). If this option is unchecked in such a case, new layers will be centered at 0,0,0 and will be off-camera. If this option is checked in such a case, the new layers will appear centered in front of the current camera position.
- **Confirm before reverting document:** When checked, Anime Studio will ask for verification before a document is reverted to the last saved version.
- **Default Startup File:** Allows you to start Anime Studio with a default startup file, an empty document, or a specified project file.
- **Document Preview Thumbnail Size:** Anime Studio can automatically generate thumbnails when you save your documents. The default maximum size for the thumbnails is 128x128 pixels. Other options are **None** (will not automatically generate a thumbnail), **256x256**, **512x512**, and **1024x1024**.
- **Max Render Cache Size:** Enter the number of renders that you want to store your Anime Studio render

cache. The default setting is 100 images. In order to store these images, you must create a user content folder. If you did not do this during setup, see [“Set Custom Content Folder” on page 283](#).

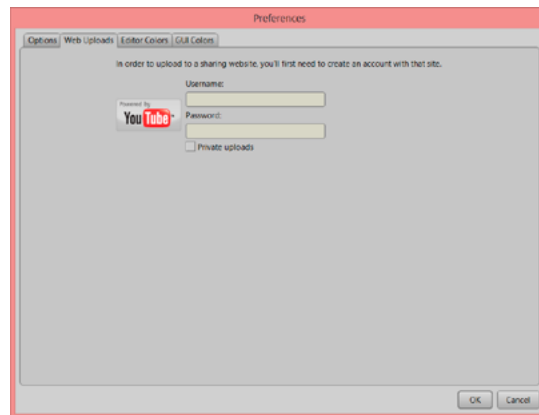
- **Language:** Select the desired language for the Anime Studio interface. Choices are English, German, Spanish, and Chinese.

Web Uploads:

This tab is used to enter your YouTube user account name and passwords. Anime Studio will log into this account to post YouTube videos when you select the **File > Upload to YouTube** command to send a project file to another person.

Enter the following information:

- **Username:** Enter your YouTube user name.
- **Password:** Enter your YouTube password.
- **Private uploads:** Check this option if you want your Anime Studio uploads to be private uploads rather than public uploads.

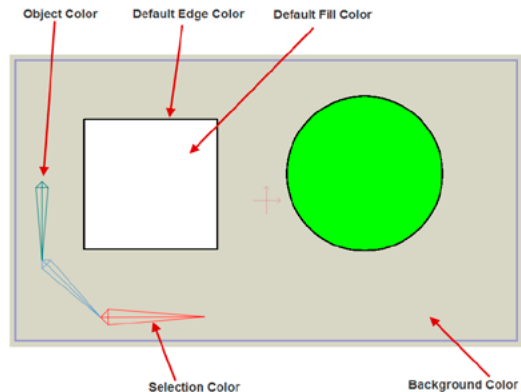


Web Uploads

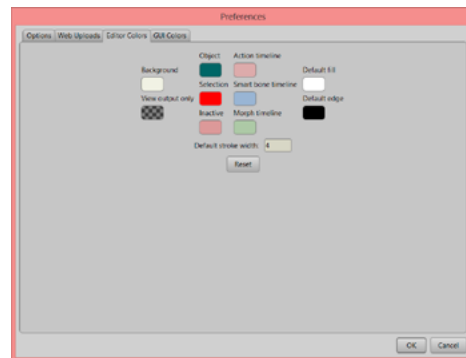
Editor Colors:

Allows you to change the color scheme for the editor window, including various options for background and object colors. Press the Reset button to return to default application colors. The **Default Stroke Width** option allows

you to specify the default Stroke Width setting that appears in the Style window.



Editor Colors



Editor Colors

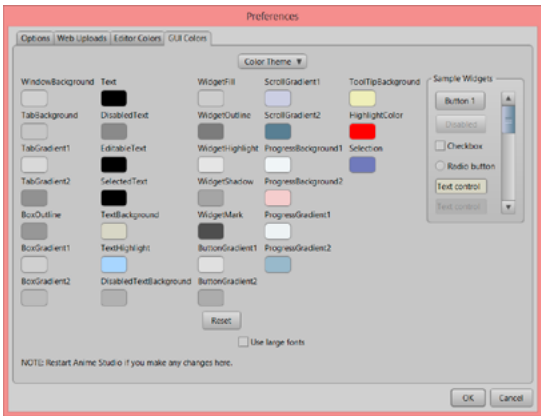
GUI Colors:

Allows you to change the color scheme for the application, including various options for background, text, and widget colors. A preview of your changes appears in the Sample Widget area as changes are made.

- Click the **Color Theme** button at the top of the GUI Colors tab to choose from one of several different

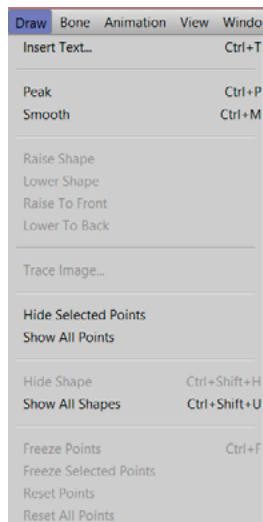
color schemes. You can then modify the color scheme further if desired.

- Press the **Reset** button to set the color scheme back to the default settings.
- Check the **Use Large Fonts** option to increase the size of the fonts used in the application.



GUI Colors

Chapter 20: Draw Menu



Draw Menu

Insert Text...

Choose **Draw > Insert Text** or use the keyboard shortcut **Command/Ctrl+T** to open the Insert Text dialog, which is described in [“Inserting Text and Word Balloons”](#) on page 95.

Peak

This command creates a peaked (or hard) transition between the curves at the point that you click.

Smooth

This command smooths the transitions between the curves at the point that you click.

Raise Shape

Select this menu item to raise a shape in the stacking order. This will move it in front of the next higher shape. The stacking order only applies to shapes within the same layer - all shapes in a layer will appear above any lower layers and behind any upper ones, regardless of stacking order. Note that if there is no shape overlapping the selected

one, you may not see any change when this item is selected, even though the shape gets moved higher.

Lower Shape

Select this menu item to lower a shape in the stacking order.

Raise to Front

Works like Raise Shape, but raises the shape above all others in its layer.

Lower to Back

Works like Lower Shape, but lowers the shape below all others in its layer.

Trace Image

Anime Studio has always allowed you to import black and white or color bitmap images and work with them. However, they are not as flexible as vector objects for several reasons. You can't zoom in an infinite amount, you can't bend them quite as much, and you can't edit them.

Chapter 20: Draw Menu

Anime Studio includes Automatic Image Tracing, which allows you to convert a bitmap image to a black and white vector object.

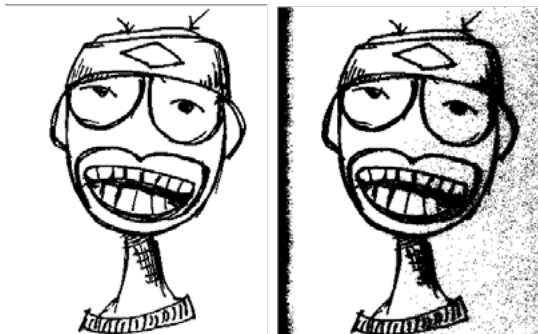
For this feature to work its best, you should choose drawings that have bold lines, such as those created with a felt pen. Pencil sketches will be more difficult to trace.

After you import your drawing into an Image layer, you can use the **Draw > Trace Image** command to display the Trace Image dialog. The Trace Image dialog contains the following settings.



Trace Image dialog.

- **Threshold:** Adjusting the Threshold value can help remove gray areas from the conversion. Move the slider toward the left to decrease the threshold value (accept less gray), or toward the right to increase the threshold (accept more gray). If your image contains compression artifacts or subtle color gradients you can decrease the threshold value to make the conversion cleaner.



Low threshold (left); high threshold (right).

- **Detail reduction:** The Detail Reduction is set, by default, to accept the most amount of detail possible (the slider is fully toward the left). Move the slider toward the right

to increase the amount of detail in the conversion. This creates more points in the vector layer, but appears more true to the original. Move the slider toward the right to decrease the amount of detail. This creates fewer points in the vector layer, but appears less like the original image.



Maximum detail (left); reduced detail (right).

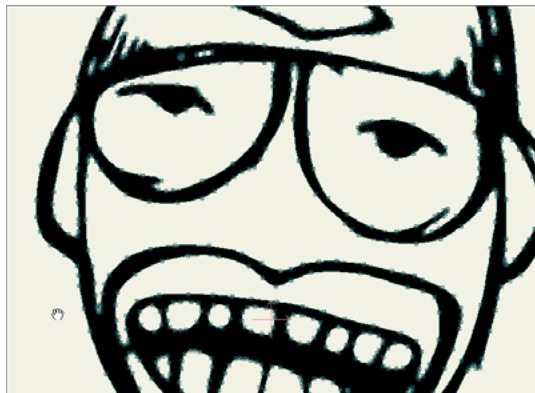
- **Fatten Lines:** This option controls the width of the lines in the black and white drawing. Move the slider toward

the left to decrease the width, and toward the right to increase the width.



Default lines (left); thickened lines (right)

After you click OK, Anime Studio traces the image and adds a new vector layer to the Layers palette. The image layer that contains the original bitmap image is turned off.



A close-up of the traced result

Hide Selected Points

Sometimes when projects are complex and you have a lot of points and bones, you only want to work on one object or reshape it. When scenes are complex you sometimes select points in the group.

Select the object you want to work on, then choose **Edit > Select Inverse** to select all the points you want to hide. Then choose **Draw > Hide Points** to hide the selected points. The shapes are still there, but the points are hidden and you can't accidentally select them.

Show All Points

Choose **Draw > Show All Points** to unhide the points that were previously hidden with the Hide Selected Points command.

Hide Shape

Hides the currently selected shape

Show All Shapes

Shows all shapes that have previously been hidden.

Freeze Points

After selecting points, choose this command to freeze all points so that they cannot be edited.

Freeze Selected Points

Adds a keyframe at the current time for all selected points.

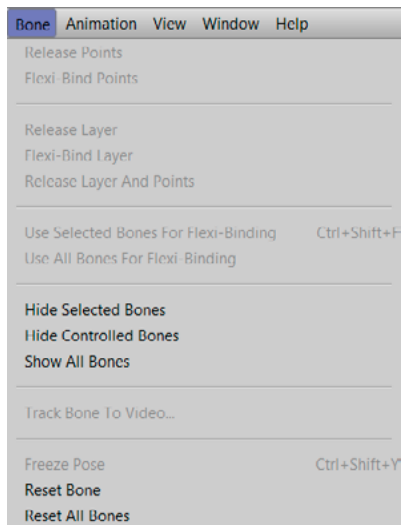
Reset Points

Moves the selected points back to their original positions, adding a new keyframe for them at the current time.

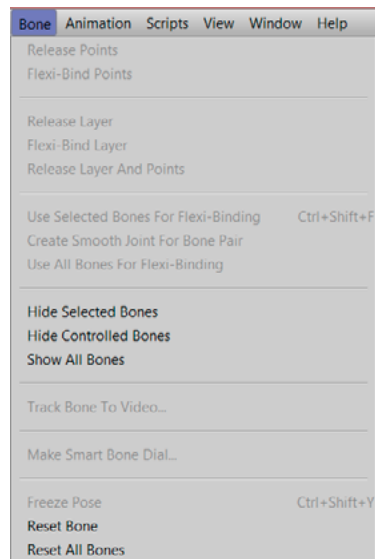
Reset All Points

Same as above, but moves all points in the layer back to their original positions, not just the selected ones.

Chapter 21: Bone Menu



Bone Menu



Bone Menu

Release Points

This command detaches the selected points from any bones they may be bound to.

Flexi-Bind Points

This command binds the selected points to bones in such a way that they will be influenced by all the bones in the parent bone layer, depending on the strength and region of influence of each bone. This results in more of a “squishy” type of motion when the skeleton is animated. This is the default behavior for all drawings in Anime Studio, so you usually won’t have to use this menu command - the points are probably already flexi-bound.

Release Layer

This command detaches the current layer from any bone it may be bound to.

Flexi-Bind Layer

This command binds the current layer to the bones in the parent layer in such a way that the child layer will

be influenced by all the bones in the parent bone layer, depending on the strength and region of influence of each bone. This results in more of a “squishy” type of motion when the skeleton is animated.

Release Layer And Points

Detaches selected points and layer from any bones that they are bound to.

Use Selected Bones for Flexi-Binding

Assigns the selected bones to the currently-selected layer in the Layers palette. For more information, see **“Tutorial 3.5: Flexi-Binding” on page 120 in your Anime Studio Tutorial Manual.**

Use All Bones for Flexi-Binding

Reassigns the selected layer in the Layers palette so that it is controlled by all bones in the bone group, rather than by selected bones that were previously assigned with the **Use Selected Bones for Flexi-Binding** command.

Hide Selected Bones

Select the bone or bones that you want to hide, and choose **Bone > Hide Selected Bones**. The bones and their associated keyframes will be hidden.

Hide Controlled Bones

Hides any bones that are set up to have their angle or position controlled by another bone. These types of bones are often not animated by the user (their animation is "automatic" through the control feature), and hiding them can clear up some of the clutter in the workspace. This function is not available when the time is set to frame 0.

Show All Bones

Use the **Bone > Show All Bones** command to redisplay bones that have previously been hidden with the Hide Selected Bones command.

Track Bone to Video

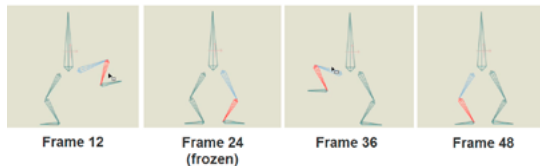
Allows you to link a bone to the tracking points that you defined with the Video Tracking tool. For a description of how to use this tool, see ["Video Tracking" on page 105](#).

Freeze Pose

Keyframing can be tricky sometimes for new users of Anime Studio, or for those who are new to animation. For example, let's say you move a left foot up on frame 12, and then down again at frame 24. At frame 36, you want the right foot to move up, and then down again at frame 48.

The problem is, the right foot will start to move up at frame 0, and then be fully up at frame 36. In reality, you want the right foot to move up from frame 24 through 36, and not from frame 0 through 36.

To accomplish this, you choose the **Bone > Freeze Pose** command at Frame 24. This sets a keyframe for every part in your animated character or object so that you are assured that the pose you want to use is correct for that portion of your animation. Then you set the keyframe that moves the right foot up at frame 36, and down again at frame 48.



Freezing a pose

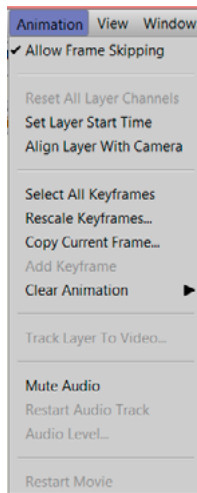
Reset Bone

Moves the selected bone back to its original position, adding a new keyframe for it at the current time.

Reset All Bones

Same as above, but moves all bones in the layer back to their original positions, not just the selected one.

Chapter 22: Animation Menu



Animation Menu

Allow Frame Skipping

Normally when playing back an animation, Anime Studio will display each frame one at a time. Depending on the complexity of your animation, the display quality settings, and the speed of your computer, the animation may play back slower than its specified speed. Select this command to force the animation to play back at actual speed. In order to accomplish this, Anime Studio may have to skip some frames to keep up to speed, so the animation will play back at the correct overall speed, but may not appear as smooth. The best way to see the animation at final speed and quality is of course to use the Export Animation command in the File menu.

Reset All Layer Channels

Resets all channels in the current layer to their initial values, adding a new keyframe at the current time.

Set Layer Start Time

Offsets the start of an animation within a layer to the current selected frame.

Align Layer with Camera

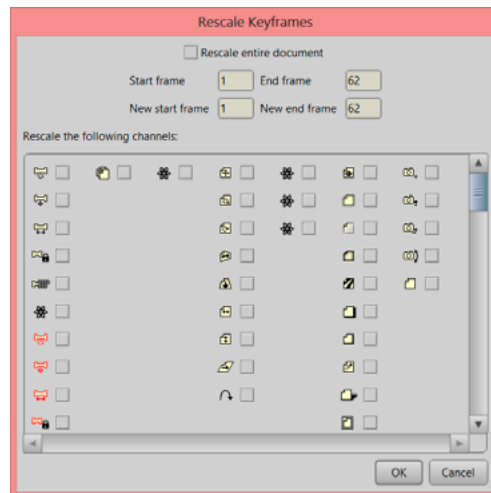
Allows you to rotate the selected layer to face the camera.

Select All Keyframes

Selects all the keyframes in the current layer. This is useful if you want to move all the animation in a layer forward or backward.

Rescale Keyframes...

With this command you can rescale a group of keyframes so that a portion of your animation takes more or less time.



The Rescale Keyframes dialog.

Options included in this dialog are:

- **Rescale entire document:** Check this option to rescale all frames in the document.

- **Start Frame:** Enter the existing frame number at which to start scaling.
- **End Frame:** Enter the existing frame number at which to end the scaling.
- **New Start Frame:** Enter the new target frame number for the start of the scaling.
- **New End Frame:** Enter the new target frame for the end of the scaling.
- **Rescale the following channels:** Check or uncheck the channels that you want to include or exclude from the scaling operation. The icons representing the various animation channels are described in the Timeline Window section.

Examples:

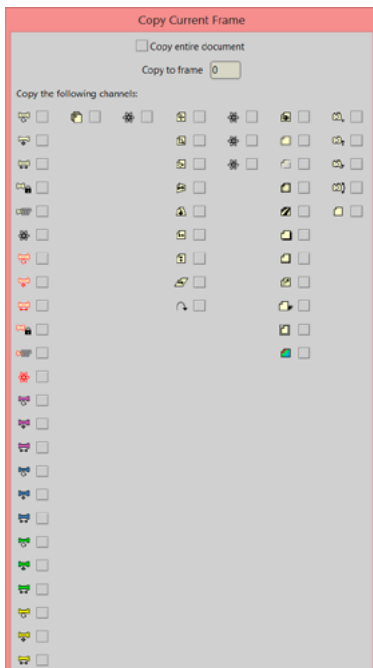
- To reduce the amount of time the animation takes (in other words, to speed it up), you could set the start frame (and new start frame) to 30, the end frame to 60, and the new end frame to 45. ($45 - 30 = 15$, which is half as long as $60 - 30 = 30$)
- You can shift a section of your animation by changing the start time. For example, to shift the range of keyframes between 30 and 60, you could set the start

frame to 30, the end frame to 60, the new start frame to 90, and the new end frame to 120. The duration will be the same ($120 - 90 = 60 - 30$), but the animation will take place between frames 90 and 120, instead of 30 and 60. You can rescale a portion of the entire document by clicking the "Rescale entire document" checkbox.

- To rescale the current layer, select the animation channels that you want to be affected. For example, you may want to rescale the bone animation, but leave the layer rotation alone.

Copy Current Frame...

With this command you can copy values from the current frame in the timeline to any other frame in your animation. For example, if you position some objects in a way that you really like at frame 243, you can use this command to copy that position back to frame 0, to make it the starting position as well.



The Copy Current Frame dialog.

Add Keyframe

This command adds a keyframe for all channels in your project, at the currently selected frame.

Clear Animation

Several commands allow you to clear keyframes from a single layer, or from all the layers in your project. Use the **Animation > Clear Animation** commands as follows:

- **From Layer:** Clears all animation keyframes from the current layer. A warning appears to notify you that animation will also be deleted from sublayers and asks if you want to continue. Choose **Yes** to clear the sublayers, **No** to keep keyframes in the sublayers, or **Cancel** to exit the dialog without making changes.
- **From Layer After Current Frame:** Clears keyframes from the currently selected layer, beginning with the frame after the currently selected frame and including all keyframes to the end.
- **From Layer Before Current Frame:** Clears keyframes from the currently selected layer, beginning with the frame before the currently selected frame and including all keyframes to the beginning.

- **From Layer At Current Frame:** Clears the keyframes on the currently selected layer, only at the current frame.
- **From Document:** Clears all animation keyframes from the entire document.
- **From Document After Current Frame:** Clears keyframes from the entire document, beginning with the frame after the currently selected frame and including all keyframes to the end.
- **From Document Before Current Frame:** Clears keyframes from the entire document, beginning with the frame before the currently selected frame and including all keyframes to the beginning.
- **From Document At Current Frame:** Clears the keyframes in the entire document, only at the current frame.

Track Layer to Video

This command allows you to link a layer to tracking points that have been set up with the video tracking tool. For a complete description of the process, refer to ["Video Tracking" on page 105](#).

Chapter 22: Animation Menu

Mute Audio

Mutes the soundtrack when playing back your project in Anime Studio, but the soundtrack is still a part of the project. Just un-mute it to hear it again.

Restart Audio Track

Starts the audio track in the selected track over again from the beginning. This allows you to add repeats in the audio track.

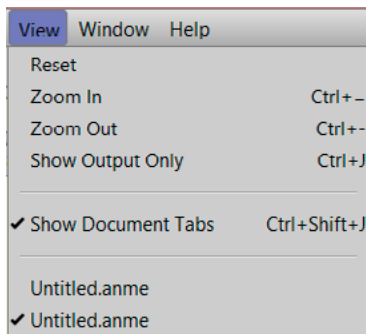
Audio Level

Opens a dialog that allows you to enter a numerical value for the audio level.

Restart Movie

Starts the video in the selected track over again from the beginning, allowing you to add repeats in the video track.

Chapter 24: View Menu



View Menu

Reset

Resets the view of the working area to the starting pan and zoom values. Use this command when you want to jump back to the original view of the project.

Chapter 24: View Menu

Use the **View > Zoom In** command, or the keyboard shortcut **Command/Ctrl+= (equal sign)** to zoom in closer to the elements in your scene.

Zoom Out

Use the **View > Zoom Out** command, or the keyboard shortcut **Command/Ctrl+- (minus sign)** to zoom out farther from the elements in your scene.

Show Output Only

In OpenGL mode, this option will use a semi-transparent fill so that you can see what is behind it.

Show Output Only

This command will hide all artwork that lies outside the final output rectangle. This makes it easy to visualize the final staging for your shot. Of course, it's hard to edit what you can't see, so be sure to turn this option off when you need to edit an object that lies outside the visible area of the project.

Show Document Tabs

Open documents appear as tabs in the main window.

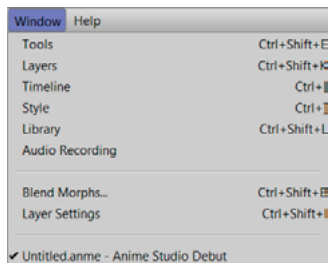
You can show or hide the document tabs with the **View > Show Document Tabs** command, or by using the shortcut **Command/Ctrl+Shift+J**.

Open documents also appear as a list at the bottom of the View menu. Select a document in the list at it will appear in the view port area.

The following shortcuts allow you to cycle through open documents:

- To switch to the next open document, press **Ctrl+Tab** (Windows) or **Alt+Tab** (Mac).
- To switch to the previous open document, press **Ctrl+Shift+Tab** (Windows) or **Alt+Shift+Tab** (Mac).

Chapter 25: Window Layers Menu



Window Menu

Tools

Shows/hides the Tools window. The Tools window is shown by default when you start Anime Studio. Tools are discussed in the section beginning with [“Anime Studio Tools”](#) on [page 24](#).

Shows/hides the Layers window. The Layers window is shown by default when you start Anime Studio. See [“Chapter 11: Layers Window”](#) on [page 125](#).

Timeline

Shows/hides the Timeline window. The Timeline window is shown by default when you start Anime Studio. See [“Chapter 16: The Timeline Window”](#) on [page 213](#).

Style

Shows/hides the Style window. The Style window is shown by default when you start Anime Studio. See [“Chapter 13: Style Window”](#) on [page 163](#).

Library

Displays the Library window, which is discussed in [“Chapter 14: The Library Window”](#) on [page 182](#).

Audio Recording

Displays the Audio Recording window, which is discussed in “Audio Recording” on page 227.

Blend Morphs

You can use the **Window > Blend Morphs** command to blend poses (or **morph targets**) together to create a combination pose or morph. This feature in Anime Studio is very easy to use.



*Anime Studio Debut does not allow you to create actions for blending, however you will be able to blend poses contained in content that is created by others. When you first create a character, you'll notice that the **Window > Blend Morphs** command may not be available. This is because you need to use a character that has morph targets that you can use for blending.*

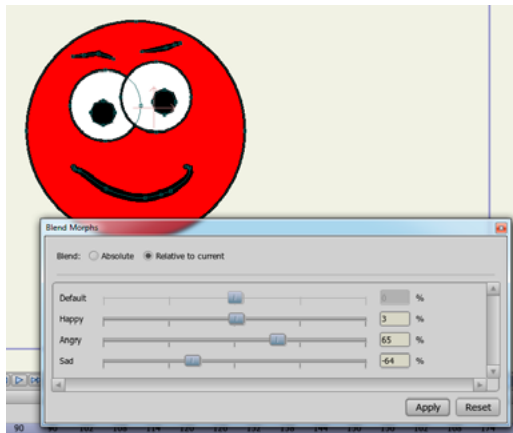
To blend your morphs, begin by moving to the frame at which you want the new morph to appear.

Next, choose the **Window > Blend Morphs** command. The Blend Morphs dialog appears. The sliders in this dialog are named the same as the morphs you created in the Actions

window. Adjust the sliders until you get a combination of the morphs that you want to keep. Then click OK to set the new combination.



*The Default slider is associated with the default state of the object at Frame 0. To blend the other morphs with this default state, check the **Relative Blend** option.*



Use the Blend Morphs dialog to combine your morphs together in any combination of values.

You can then advance to other frames in your timeline, and use the Blend Morphs command to create new combinations throughout the timeline. As you scrub through the timeline, you should then see morphs blend from one to the other.

You can select which animation channels to copy to a new frame, or you can copy everything in the document by selecting the “Copy entire document” checkbox. There doesn't need to be a keyframe at the current frame in order to copy the current value. This command will copy the current value, whether it is a keyframe or an interpolated in-between value.

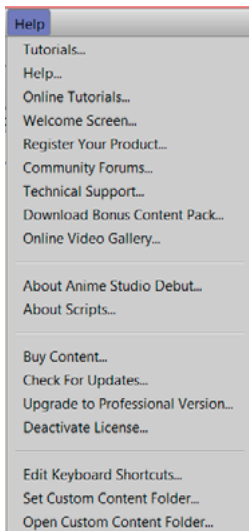


An important note about bones: if you position a skeleton system during your animation, and try to copy that pose back to frame 0, the bones themselves will take on that pose at frame 0, but anything bound to the bones (points in vector layers, warped images, other sub-layers) will not take on that pose. This is because frame 0 is a setup frame - bones are set up at frame 0, but they have no influence over other objects at frame 0. If you're trying to copy a pose back to frame 0 in order to set up an initial pose, consider copying it back to frame 1 instead - frame 1 is actually the beginning of the animation, and the bones will influence other objects starting at frame 1.

Layer Settings

Opens the Layer Settings dialog, discussed in “[Chapter 12: Layer Settings](#)” on page 129.

Chapter 26: Help Menu Tutorials



Help Menu

Opens the PDF version of the Anime Studio Tutorial Manual, which is installed on your hard disk.

Help

Opens this document, the Anime Studio User's Manual.

Online Tutorials

Opens a web browser with Anime Studio online tutorials. Internet connection will be required.

Welcome Screen

Opens the Welcome Screen.

Register Your Product

Register your product to receive information on updates and upgrades. Internet connection will be required.

Community Forums

Opens your web browser to the Lost Marble forum, where you can communicate with your peers and ask for help on any topic related to Anime Studio and animation. The forum is extremely large with over ten thousand registered members.

Technical Support

Opens your web browser to the Smith Micro website where you can access FAQ's, see answers to common issues, get help from a customer service representative etc.

Download Bonus Content Pack

Navigates to the Bonus Content Pack page on Content Paradise. You will need a Content Paradise account and a valid Anime Studio serial number to obtain the content.

Online Video Gallery

Opens your browser to a page that displays some of the animations that have been created with Anime Studio. This

is a great place to get inspired and see what others have created with Anime Studio.

About Anime Studio Debut

Displays some information about Anime Studio, including which version of Anime Studio you're running.

About Scripts

Displays some information about all the scripts currently loaded by Anime Studio. All of Anime Studio tools, and all the entries in the Scripts menu are implemented in a scripting language called Lua. Although some programming/scripting experience is required, Anime Studio users are welcome to write their own scripts to extend Anime Studio's built-in features.

Buy Content

Help speed up your animation workflow with ready to use content. Buy content from Content Paradise. Internet connection will be required.

Check For Updates

Check to see if there are any updates for Anime Studio. Internet connection will be required.

Upgrade to Professional Version

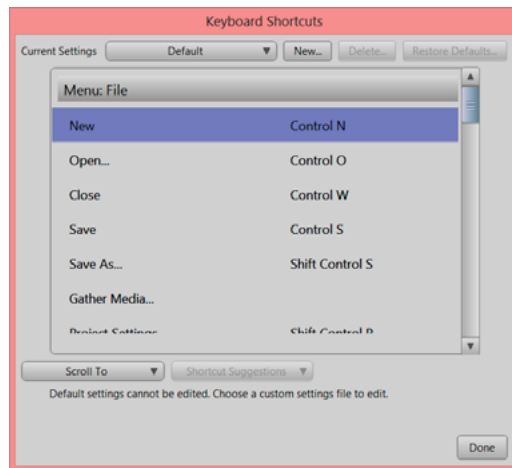
Upgrade from Anime Studio to Anime Studio Professional. Internet connection will be required. To see the differences in the two products, see [“Product Comparison” on page 359](#).

Deactivate License

Choose this command to deactivate the license before you uninstall Anime Studio, or if you want to activate the license on another computer.

Edit Keyboard Shortcuts

The Help > Edit Keyboard Shortcuts command opens the Keyboard Shortcuts dialog shown in the following figure.



The Keyboard Shortcuts Editor.

By default, the shortcuts that are built-in to Anime Studio are displayed in their default configuration, in three categories: **Menus**, **Tools**, and **Windows**.

You cannot edit the default configuration. In order to create your own shortcut configurations, you'll need to create a custom settings file.

The following options appear in the dialog:

- **Current Settings:** Displays the name of the shortcut configuration that is currently in use.
- **New:** Allows you to assign a name to a new shortcut configuration. Anime Studio will notify you if the filename is too long. After you assign a name choose **OK**. Your new custom file will appear in the Current Settings list, and you can begin to assign your custom shortcuts.
- **Delete:** Select a custom shortcut configuration from the Current Settings list, and then click this button to delete it. You cannot delete the Default configuration file.
- **Restore Defaults:** Restores all keyboard shortcuts to the default values assigned with the Anime Studio installation.
- **Shortcut List:** Displays all shortcuts by category: **Menu**, **Tools**, and **Windows**. You can use the scrollbar at the right side of the shortcut list to scroll further down the list. The left side of the list displays a menu command, tool name, or window; and the right side of the list displays the associated shortcut if one is configured.
- **Scroll To:** Jumps to a specific shortcut category. The categories are named in the order in which they

appear in the shortcut list. Select the desired category to jump to that location.

- **Shortcut Suggestions:** Click this button to have Anime Studio suggest an unused keyboard shortcut.
- **Done:** Click the Done button when you are finished editing your shortcuts.

Adding Shortcuts

To create a custom keyboard shortcut file, follow these steps:



*If a user content folder is defined, Anime will save custom keyboard shortcuts files to a **Keyboard Shortcuts** folder in the user content folder. If names conflict with custom files saved to the default location, the user location will supercede the default location.*

1. Choose **Help > Keyboard Shortcut Editor** to open the Keyboard Shortcut window.
2. If a custom configuration file has not yet been created, click the **New** button to assign a name for a new configuration file. Otherwise, select the custom

configuration that you want to edit from the **Current Settings** dropdown list.

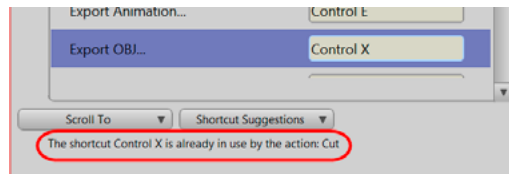
3. Scroll through the keyboard shortcut list until you find the menu command, tool, or window item that you want to modify. Click inside the shortcut field to edit it.
4. With the shortcut field selected, press the associated keys on your keyboard that you want to assign for the command.



Customized shortcuts will override default shortcuts unless there is a conflict with a default. If a conflict with a default shortcut exists, the default shortcut will take precedence over the custom shortcut.



It is possible to create duplicate shortcuts. The editor will warn you when multiple actions have the same shortcut when you assign a shortcut that is already used by another action. When multiple actions use the same shortcut, the first enabled action found will be triggered.



You will receive a warning when the keyboard shortcut that you enter is already in use.

5. After you are finished with your keyboard shortcuts, click **Done** to save the configuration file.

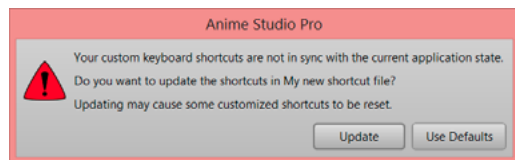


If you change your locale, there may be localized shortcuts that conflict with your custom shortcuts. Your settings will be updated to eliminate conflicts.



Switching from 32-bit to 64-bit or vice versa could potentially alter the shortcuts available and may lead to a conflict between default settings and custom settings. Your settings will be updated to eliminate conflicts.

If shortcuts have changed in the application since the last time you updated, a dialog will prompt you to update your custom shortcut list accordingly, or to use the new defaults.



Update Shortcuts dialog.

Set Custom Content Folder

Prompts you to create a content folder, as described in ["Creating a Content Folder" on page 7.](#)

Open Custom Content Folder

Opens your custom content folder in Explorer (Windows) or Finder (Mac)

Appendix

Appendix A: Product Comparison

The differences between Anime Studio Debut and Pro
 Feature Comparisons

Feature	Anime Studio Debut	Anime Studio Pro
Animation Length	2 minutes (3000 frames)	Unlimited
Motion Tracking	3 points	Unlimited
Audio Tracks	2 tracks	Unlimited
Video Tracks	1 track	Unlimited
Physics	No	Yes
Poser scene import	No	Yes
3D layer and object support	No	Yes
Morph targets	Read Only	Read and create
Automatic image tracing	Black and white only	Black and white, color, and edges
Particles	Read only	Read and Create
Import Photoshop Files	Yes (1)	Yes (2)

Appendix A: Product Comparison

Real-time media connection	No	Yes
Patch Layers	Read only	Read and create
3D Video rendering	No	Yes
Global Rendering Styles	No	Yes
Scripting	No	Yes
Layer Outline	Yes	Yes
64-bit Architecture	No	Yes
GPU Acceleration	No	Yes
Wacom Multi-Touch Support	Yes	Yes
Character Wizard	Yes	Yes
Render Cache	Yes	Yes
Separate Batch Export Process	No	Yes
Separate Render Process	No	Yes
Preview Animation	No	Yes
Multiple Document Support (Tabs)	Yes	Yes
Keyboard Shortcut Editor	Yes	Yes
Automatic Update Checking	Yes	Yes
Activation, Serialization, and License Management	Yes	Yes

(1) Layered using Anime Studio script

(2) Import directly through File menu.

Window Menu

Feature	Anime Studio Debut	Anime Studio Pro
Tools	X	X
Beginner Mode Tools	X	
Layers	X	X
Timeline	X	X
Style	X	X
Actions		X
Library	X	X
Audio Recording	X	X
Poser Parameters		X
Character Wizard	X	X (1)

(1) Character Wizard in Pro lets you use and create reusable actions that can be applied to any character created with the Wizard.

Vector Drawing Features

Feature	Anime Studio Debut	Anime Studio Pro
Text	X	X
Select Points	X	X
Transform Points	X	X
Add Point	X	X
Hide/Show Points	X	X
Delete Edge	X	X
Curvature	X	X
Freehand	X	X
Multi-brushes	X	X
Blob Brush	X	X
Eraser	X	X
Rectangle	X	X
Oval	X	X
Arrow	X	X
Shear Points X		X
Shear Points Y		X
Perspective Points H		X
Perspective Points V		X

Bend Points H		X
Bend Points V		X
Noise		X
Magnet		X
Snap to Grid		X
Reset Line Width		X
Random Line Width		X
Variable Width Curve	X	X

Vector Modifiers

Feature	Anime Studio Debut	Anime Studio Pro
Peak	X	X
Smooth	X	X
Flip Points Horizontally	X	X
Flip Points Vertically	X	X

Fill Features

Feature	Anime Studio Debut	Anime Studio Pro
Select Shape	X	X
Select Multiple Shapes	X	X
Create Shape	X	X
Paint Bucket	X	X
Delete Shape	X	X
Line Width	X	X
Hide Edge	X	X
Stroke Exposure		X
Curve Profile		X
Texture Transparency		X

Fill Modifiers

Feature	Anime Studio Debut	Anime Studio Pro
Lower Shape	X	X
Raise Shape	X	X

Bone Features

Feature	Anime Studio Debut	Anime Studio Pro
Select Bone	X	X
Transform Bone Tool (Translate, Scale, and Rotate)	X	X
Add Bone	X	X
Hide/Show Bones	X	X
Reparent Bone	X	X
Bone Strength	X	X
Manipulate Bones	X	X
Bind Layer	X	X
Bind Points	X	X
Offset Bone	X	X
Bone Physics		X
Bone Constraints		X
Smart Bones		X
Smart Bones Setup		X
Color Bones	X	X
Bone Labels		X
Nested Layer Controls	X	X

Layer Features

Feature	Anime Studio Debut	Anime Studio Pro
Set Origin	X	X
Transformation	X	X
Switch Layer	X	X
Rotate Layer X		X
Rotate Layer Y		X
Shear Layer X		X
Shear Layer Y		X
Particle Layer		X
Follow Path	X	X
Poser		X (1)
Image Masking	X	X
Video Tracking	X (2)	X
Audio Layers	X (3)	X
Layer Selector	X	X
Undo/Redo Layers	X	X
Layer Comps		X
Layer Colors	X	X
Flexi Binding	X	X

Depth Shifting		X
Fade Unselected Layers		X
Multiple Layer Editing	X	X
Colorize Layer	X	X

- (1) Requires Poser 7 or newer
- (2) Limited to 3 tracking points
- (3) Limited to 2 audio layers

Layer Modifiers

Feature	Anime Studio Debut	Anime Studio Pro
Flip Layer Horizontally	X	X
Flip Layer Vertically	X	X

Layer Types

Feature	Anime Studio Debut	Anime Studio Pro
Vector	X	X

Image	X	X
Bone	X	X
Switch	X	X
Group		X
Particle		X
3D		X
Physics (Layer property)		X
Note		X
2D to 3D Layer Conversion		X
Patch		X
Text Layer	X	X

Camera Features

Feature	Anime Studio Debut	Anime Studio Pro
Track Camera	X	X
Zoom Camera	X	X
Roll Camera	X	X
Pan/Tilt Camera		X

Workspace Features

Feature	Anime Studio Debut	Anime Studio Pro
Pan Workspace	X	X
Zoom Workspace	X	X
Rotate Workspace		X
Orbit Workspace		X
Depth of Field		X

Timeline Features

Feature	Anime Studio Debut	Anime Studio Pro
Keyframes	X	X
Playback Controls	X	X
Animation Channels	X	X
Ruler	X	X
Onionskins		X
Graph Mode		X
Smooth Interpolation		X

Linear Interpolation		X
Ease In/Out Interpolation		X
Bezier Interpolation		X
Step Interpolation		X
Noisy Interpolation		X
Bounce Interpolation		X
Elastic Interpolation		X
Stagger Interpolation		X
Sequencer	X	X
Keyframe Hold Duration	X	X
Colored Keyframes	X	X

Action Features

Feature	Anime Studio Debut	Anime Studio Pro
Store Reusable Animation		X
Edit Reusable Animation		X
Delete Reusable Animation		X

Style Features

Feature	Anime Studio Debut	Anime Studio Pro
Save Style		X
Pattern Brush	X (1)	X
Blur	X	X
Threshold	X	X

(1) Pro version contains more brushes

Preferences

Feature	Anime Studio Debut	Anime Studio Pro
Options	X	X
Editor Colors	X	X
GUI Colors	X	X
GUI Color Themes	X	X

Project Settings

Feature	Anime Studio Debut	Anime Studio Pro
Save Project Settings	X	X
Edit Dimensions	X	X
Background Color	X	X
Depth of Field		X
3D Camera		X
Stereo Rendering		X
Sort Layers by Depth	X	X
Sort by True Distance	X	X
Noise Grain		X
Up to 120 Frames/Second Maximum	X	X
Maximum export size (pixels)	900 x 900	9000 x 9000
Maximum number of frames	3000	Unlimited

Content

Feature	Anime Studio Debut	Anime Studio Pro
Built in Content	X	X
Third Party Content	X	X
3D Object		X
Character Wizard	X	X

Scripts

Feature	Anime Studio Debut	Anime Studio Pro
3D		X
Camera		X
Draw		X
Image Sequences		X
Layer Effects		X
Particle Effects		X
Sound		X
Warp		X

Appendix A: Product Comparison

Visibility		X
Script Writing		X

View

Feature	Anime Studio Debut	Anime Studio Pro
Grid		X
Adjust Grid Size		X
Side by Side View		X
Over Under View		X
Four-Way View		X
Display Quality		X
Advanced Current Layer View		X

Import

Feature	Anime Studio Debut	Anime Studio Pro
2D FORMATS		

JPEG	X	X
BMP	X	X
PSD	X (1)	X (2)
PNG	X	X
TGA	X	X
EPS, AI, Tracing Image		X
3D FORMATS		
OBJ		X
Poser Files and Scenes (Poser 7 and newer)		X
SOUND FORMATS		
WAV (Windows & Mac)	X	X
AIFF (Windows & Mac)	X	X
MP3 (Windows & Mac)	X	X
M4A (MPEG-4)	X	X
MOVIE FORMATS		
MOV (Mac and Windows)	X	X
AVI (3)	X	X
MP4 Video	X	X
MOHO FORMAT		
MOHO File Format	X	X

(1) Layered using Anime Studio script.

(2) Directly through File menu.

(3) AVI Import works on Windows, and on Macintosh systems depending on codecs. If you can play the AVI file in QuickTime on a Mac, you should be able to import it into Anime Studio.

Export Formats

Feature	Anime Studio Debut	Anime Studio Pro
IMAGE FORMATS		
JPEG	X	X
BMP	X	X
PSD (Layered)		X
PNG	X	X
TGA	X	X
Batch Image Export		X
MOVIE FORMATS		
SWF (1)	X	X
MOV (Macintosh and Windows) (2)	X	X
AVI (Windows)	X	X

Appendix A: Product Comparison

MP4	X	X
Sequential JPEG		X
Sequential BMP		X
Sequential PSD		X
Sequential PNG		X
Sequential TGA		X
Batch Movie Export		X
TV FORMATS		
NTSC Format	X	X
PAL	X	X
HD movies		X

(1) SWF: Vector animations only; image layers can be used as long as they are not warped by bones. [See “Exporting Flash” on page 245 for more information.](#)

(2) MOV: If you are using a 64-bit Windows operating system, you will need to use the 32-bit version of Anime Studio Pro to export in MOV format.

Upload Features

Feature	Anime Studio Debut	Anime Studio Pro
---------	--------------------	------------------

Upload to Facebook®	X	X
Upload to YouTube™	X	X

Optimization Features

Feature	Anime Studio Debut	Anime Studio Pro
64-bit Architecture		X
GPU Acceleration		X
Render Cache	X	X
Separate Batch Export Process		X
Separate Render Process		X
Preview Animation		X
Multiple Document Support (Tabs)	X	X
Keyboard Shortcut Editor	X	X
Automatic Update Checking	X	X
Activation, Serialization, and License Management	X	X

Appendix B: Technical Support

User Manual

The first source of help when using Anime Studio is the manual that you are reading now. We have also included a Tutorial Manual that you can view by choosing **Help > Tutorials** from the Anime Studio menus. If you're just getting started and need some basic tips on how to use Anime Studio, begin with **"Quick Start" on page 3 in your Anime Studio Tutorial Manual.**

For more in-depth instructions on using Anime Studio, the sections **"Anime Studio Windows" on page 119** and **"Anime Studio Menus" on page 229** go into great detail about performing specific tasks in Anime Studio and what all the user interface elements are used for, respectively.

Anime Studio on the Web

Another good source is the Smith Micro web site at <http://anime.smithmicro.com>. There you will find product

information and a variety of tutorials. We plan to keep this updated with questions and answers and new sample files.

To view in-depth product descriptions, online video gallery, and more, visit <http://anime.smithmicro.com>.

Anime Studio Discussion Forum

Share tips and tricks with other Anime Studio users on the online discussion forum: <http://www.lostmarble.com/forum/>. Smith Micro staff members also participate in this online group, and are happy to share techniques and answer questions. News about the latest Anime Studio updates is first posted to the online forum.

Email Support

You can also get your questions answered by email. If you have a question, feature request, or would like to report a bug, contact us at cs@smithmicro.com. Please provide us with as much detail about your problem as possible, so that we can understand exactly what's happening and more quickly come up with a solution for you.

Appendix C:

Acknowledgements

Some parts of Anime Studio are based on libraries written by third party organizations. Below is a list of libraries used by Anime Studio.

- Anti-Grain Geometry <http://www.antigrain.com> Copyright © 2002-2004 Maxim Shemanarev (McSeem).
- FreeType <http://www.freetype.org> Portions of this software are copyright © 1996-2002 The FreeType Project. All rights reserved.
- libjpeg <http://www.iijg.org> This software is based in part on the work of the Independent JPEG Group. Copyright © 1991-1998, Thomas G. Lane.
- libpng <http://www.libpng.org> Copyright © 1998, 1999, 2000 Glenn Randers-Pehrson.
- libsndfile <http://www.mega-nerd.com/libsndfile/> Copyright © 1999-2005 Erik de Castro Lopo.
- Lua <http://www.lua.org> Copyright © 2004 Tecgraf, PUC-Rio.

- Ming <http://www.libming.org/> Copyright © 2001 Opaque Industries.
- PortAudio <http://www.portaudio.com> Copyright © 1999-2000 Ross Bencina and Phil Burk
- zlib <http://www.zlib.net> Copyright © 1995-2002 Jean-loup Gailly and Mark Adler.

Artist Acknowledgements

Smith Micro and Lost Marble would like to thank the following artists for contributing to the content section. To access these files, open **Window > Library** and navigate to a "Partners" Folder. Their creations will be displayed within a folder with their name as the title.

- DK Toons <http://www.contentparadise.com/Search.aspx?searchText=DKToons>
- Cartoon Solutions <http://www.cartoonsolutions.com>
- ToonProps <http://www.toonprops.com>
- Víctor Paredes (Studio: Taza Triste): <http://www.youtube.com/tazatraste>

- Hubumedia <http://www.hubumedia.com> (tweet: www.twitter.com/hubumedia)
 - Charles Kenway (Studio: Square Brush): <http://squarebrush.com/>
 - The Pirate, Monster, Monster and Rabbit was Illustrated by Óscar Chávez: <http://www.flickr.com/chavezonico>
 - The Carnivorous Plant was illustrated by Alfredo Cáceres: <http://Alfredocaceres.tumblr.com>
 - The Pirate, Monster, Monster, Rabbit and Carnivorous Plant rigging and animation was made by Víctor Paredes: <http://www.youtube.com/tazatraste>
 - The Smith Micro Content Team
- Smith Micro would like to thank the following artists for imagery used in collateral and Promos.
- DK Toons <http://www.contentparadise.com/Search.aspx?searchText=DKToons>
 - Cartoon Solutions <http://www.cartoonsolutions.com>
 - Cartoon Workshop Sdn Bhd: <http://www.cartoonworkshop.com.my>
 - ToonProps <http://www.toonprops.com>
 - Hubumedia <http://www.hubumedia.com> (tweet: www.twitter.com/hubumedia)
 - TUI Studios <http://www.tuistudios.com>
 - Freakish kid <http://www.freakishkid.com>
 - Naive: <http://www.naive.se>
 - Mike Scott Animation <http://www.909pop.com>
 - Curious Projects: <http://www.curiousprojects.com>
 - Dave Cockburn's Squeaky Pictures: <http://www.squeakypics.co.uk/>
 - Charles Kenway (Studio: Square Brush): <http://squarebrush.com/>
 - Víctor Paredes (Studio: Taza Triste): <http://www.youtube.com/tazatraste>

Content Acknowledgements

Appendix C: Acknowledgements

Appendix D: Anime Studio Shortcuts

How to Work Quickly in Anime Studio

Once you've been using Anime Studio for a while, you'll probably want to find ways to speed up certain operations. Luckily, Anime Studio provides several shortcuts for common operations, such as activating tools, navigating the workspace, and entering data.

Menu Shortcuts

File Menu

Windows	Mac	Command
Ctrl+N	Cmd+N	File > New
Ctrl+O	Cmd+O	File > Open
Ctrl+W	Cmd+W	File > Close

Ctrl+S	Cmd+S	File > Save
Ctrl+Shift+S	Shift+Cmd+S	File > Save As
Ctrl+Alt+G		File > Gather Media
Shift+Ctrl+P	Shift+Cmd+P	File > Project Settings
Ctrl+R	Cmd+R	File > Preview
Ctrl+E	Cmd+E	File > Export Animation
Ctrl+Q	Cmd+Q	File > Quit

Edit Menu

Windows	Mac	Command
Ctrl+Z	Cmd+Z	Edit > Undo
Shift+Ctrl+Z	Shift+Cmd+Z	Edit > Redo
Ctrl+X	Cmd+X	Edit > Cut
Ctrl+C	Cmd+C	Edit > Copy
Ctrl+V	Cmd+V	Edit > Paste
Ctrl+A	Cmd+A	Edit > Select All

Ctrl+I	Cmd+I	Edit > Select Inverse
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Draw Menu

Windows	Mac	Command
Ctrl+T	Cmd+T	Draw > Insert Text
Ctrl+P	Cmd+P	Draw > Peak
Ctrl+M	Cmd+M	Draw > Smooth
Shift+Ctrl+H	Shift+Cmd+H	Draw > Hide Shape
Shift+Ctrl+U	Shift+Cmd+U	Draw > Show All Shapes
Ctrl+F	Cmd+F	Draw > Freeze Points

Bone Menu

Windows	Mac	Command
Ctrl+Shift+F	Shift+Cmd+F	Bone > Use Selected Bones for Flexi-Binding
Ctrl+Shift+Y	Shift+Cmd+Y	Bone > Freeze Pose

View Menu

Windows	Mac	Command
Ctrl+J	Cmd+J	View > Show Output Only

Window Menu

Windows	Mac	Command
Ctrl+[Cmd+[Window > Timeline
Ctrl+]	Cmd+]	Window > Style
Shift+Ctrl+L	Shift+Cmd+L	Window > Library
Shift+Ctrl+B	Shift+Cmd+B	Window > Blend Morphs
Shift+Ctrl+I	Shift_Cmd+I	Layer Settings

Keyboard Shortcuts

Many tools and features in Anime Studio can be accessed quickly by pressing a single key. These shortcuts make working with Anime Studio much faster than the regular method of moving the mouse to a toolbar and clicking a button, and are worth learning to reduce your drawing and animation time. However, all these features are

also available through standard user interface elements (buttons and menus), so learning these shortcuts isn't a requirement to using Anime Studio.



These shortcuts are not the same as "menu shortcuts" listed above.

Main Window

Windows	Mac	Function
Alt+Shift+Ctrl+E	Alt+Shift+Cmd+E	Open/Close Tools Palette
Alt+Shift+Ctrl+K	Alt+Shift+Cmd+K	Open/Close Layers Palette
Alt+Ctrl+[Alt+Cmd+[Open/Close Timeline
Alt+Ctrl+]	Alt+Cmd+]	Open/Close Style Window
Alt+Shift+Ctrl+L	Alt+Shift+Cmd+L	Reload Tools and Brushes
Shift+Z	Shift+Z	Activate Previous Tool

Main/Current Editing View

Windows	Mac	Function
Alt+Shift+{	Alt+Shift+{	Rotate View Left
Alt+Shift+}	Alt+Shift+}	Rotate View Right

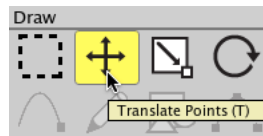
Style Window

Windows	Mac	Function
]]	Decrease Line Width
[[Increase Line Width

Timeline Shortcuts

Windows	Mac	Function
Ctrl+1	Cmd+1	Set Interpolation Linear
Ctrl+2	Cmd+2	Set Interpolation Smooth
Ctrl+3	Cmd+3	Set Interpolation Ease In/Out
Ctrl+4	Cmd+4	Set Interpolation Ease In
Ctrl+5	Cmd+5	Set Interpolation Ease Out
Ctrl+6	Cmd+6	Set Interpolation Bezier
Ctrl+7	Cmd+7	Set Interpolation Step
Ctrl+8	Cmd+8	Set Interpolation Noisy
Ctrl+9	Cmd+9	Set Interpolation Cycle
Shift+{	Shift+{	Previous Selected Key
Shift+}	Shift+}	Next Selected Key
Alt+Shift++(plus)	Alt+Shift++(plus)	Zoom In

Alt+Shift+_ (underscore)	Alt+Shift+_ (underscore)	Zoom Out
Shift+Ctrl+=(equal)	Shift+Cmd+=(equal)	Pan Up
Shift+Ctrl+-(minus)	Shift+Cmd+-(minus)	Pan Down
Shift+~(tilde)	Shift+~(tilde)	Auto Zoom



Press the T key to activate the Transform Points tool.

Tool Shortcuts

Many of the keyboard shortcuts in Anime Studio are used to activate a tool in a toolbar. If you want to know whether a tool has a shortcut, hold the mouse over the tool, and watch the tooltip that appears. If the tooltip has a single letter at the end (ex: "Transform Points (T)"), then that key can be used as a shortcut to activate the tool.



The keyboard shortcut of Shift-Z toggles between the currently selected tool and the previous tool selection.



Anime Studio auto-reverts to the previous tool selection when a shortcut for a different tool is selected and held for two or more seconds, or if held and a mouse click occurs on the canvas before the shortcut is released.

Draw Tools

Tool Shortcut	Tool
G	Select Points
T	Transform Points
A	Add Point
F	Freehand
J	Blob Brush
S	Draw Shape
E	Eraser
R	Point Reduction
D	Delete Edge
C	Curvature
X	Magnet

Fill Tools

Tool Shortcut	Tool
Q	Select Shape
U	Create Shape
P	Paint Bucket
W	Line Width
H	Hide Edge

Special Tools

Tool Shortcut	Tool
A	Video Tracking

Bone Tools

Tool Shortcut	Tool
B	Select Bone
T	Transform Bone
A	Add Bone
P	Reparent Bone

S	Bone Strength
Z	Manipulate Bones
I	Bind Points

Layer Tools

Tool Shortcut	Tool
M	Transformation
O (number)	Set Origin
L	Eyedropper

Camera Tools

Tool Shortcut	Tool
4	Track Camera
5	Zoom Camera
6	Roll Camera
7	Pan/Tilt Camera

Workspace Tools

Tool Shortcut	Tool
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8	Rotate Workspace
9	Orbit Workspace

Common Shortcuts

Some keyboard shortcuts work all the time, and some only apply in while using certain tools in Anime Studio: the sections below lists all the shortcuts and when they can be used.

The following keyboard shortcuts can be used at any time:

Keyboard Shortcut	Function
Escape	Automatically adjust the view to see everything in the active layer - hold the shift key to zoom in on the currently selected points
Home	Reset the view to see the overall project
Enter/Return	De-select all points
Tab	Select all points that are connected to the current selection
Left Arrow	Step back one frame in the timeline - hold shift to rewind
Right Arrow	Step forward one frame in the timeline - hold shift to advance to end of animation
Left Bracket [Decreases the line width setting in the Style window

Right Bracket]	Increases the line width setting in the Style window
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Working with Vector Layers

Keyboard Shortcut	Function
Delete/ Backspace	Delete the currently selected points
Spacebar	Weld two points together - usually used with the Translate or Add Point tools

Working with Fill Tools

Keyboard Shortcut	Function
Delete/ Backspace	Delete the selected shape
Spacebar	Define a shape based on current selection
Up Arrow	Raise selected shape up one level - hold shift to raise to top
Down Arrow	Lower selected shape down one level - hold shift to lower to bottom

Working with Bone Tools

Keyboard Shortcut	Function
Delete/Backspace	Delete the selected bone (and any child bones)
Spacebar	Bind points to selected bone
Up Arrow	Select parent of current bone
Down Arrow	Select child of current bone (only works if current bone has just one child)

Working with the Timeline Window

Keyboard Shortcut	Function
Alt/Option+Backspace	Delete the selected keyframe(s)
Alt/Option+C	Copy the selected keyframe(s)
Alt/Option+V	Paste the previously copied keyframe(s)
Spacebar	Play/stop the animation
Page Up	When in graph mode, zoom in on the timeline - hold shift to move the graph up
Page Down	When in graph mode, zoom out from the timeline - hold shift to move the graph down
End:	Auto-zoom the timeline, based on the active animation channel (when in graph mode)

Appendix D: Anime Studio Shortcuts

Working in the Layers Window

Keyboard Shortcut	Function
Alt-Click	If you Alt-Click a layer in the Layers window, it will hide all of the other layers and keep the layer that you clicked visible. Alt-Click again to display all layers again.


Mouse Shortcuts

There are a few shortcuts that take advantage of the mouse, making work in Anime Studio more convenient once you learn them.

Workspace Navigation

The right mouse button can be used to navigate the main Anime Studio workspace.

To pan the workspace, click and drag with the right mouse button.

-  If you hold down the spacebar while you click and drag any tool with the mouse, it will let you pan the workspace. This is similar to the panning

navigation in Photoshop and other graphics applications.

- **To zoom the workspace**, hold the shift key while dragging left or right with the right mouse button. You can also zoom the workspace by rolling the mouse wheel back and forth over the workspace.
- **To rotate the workspace**, hold down the control key while dragging with the right mouse button.
- **To fit the view to a selected layer**, select the layer that you want to view in the Layers window. Then press the **Esc** key to fit the selected layer into the view.

Timeline Scrubbing

To scrub the timeline in small increments, press Alt and roll the mouse wheel back and forth.

Numeric Fields and Angle Knobs

An easy way to make small adjustments in numeric text fields and angle knobs is to hold the mouse over the control and spin the mouse wheel back and forth. Of course, you can still enter values into a text field by typing them, but

this method lets you make small adjustments and view the changes immediately.

- On a Windows PC, when using the mouse wheel to modify the value in a text field, holding the **Ctrl** key halves the increment, holding **Shift** doubles the increment.
- On a Macintosh, when using the mouse wheel to modify the value in a text field, holding the **Cmd** key halves the increment, holding **Alt** doubles the increment.

This feature may seem cute but unimportant. However, it's actually very useful when working with the tool info panels in Anime Studio. By using the mouse wheel, you can see your changes take effect immediately. If you enter the number by hand, the change won't take effect until you press tab or enter. An especially helpful place to use this feature is when setting bone angle constraints - these numbers can be tricky to figure out, but spinning the mouse wheel you can see exactly what's happening.

Finally, you can adjust the value of a text field by dragging in it side-to-side with the right mouse button. With a regular mouse, the mouse wheel is probably more convenient, but this feature was added specifically for animators working with tablets. A drawing pen usually has no mouse wheel, so

right-dragging allows you to adjust the value of a text field without having to switch back to the keyboard.

Multi-touch Support

Certain tools support Wacom multi-touch tablets and allow you to use multi-touch gestures to perform tasks in Anime Studio. Red screen dots on screen identify the location of your fingers on the tablet. The following general notes apply to multi-touch features:



Use the Multitouch checkbox (located above the Timeline on the left side) to enable or disable Multitouch support.



If you experience problems accessing Wacom touch support, you should make sure you have the latest drivers installed, and restart Anime Studio or your computer if needed.

If the currently selected tool does not support multi-touch, then the multi-touch events will be used to navigate the workspace.

- Multi-touch events can be used for workspace navigation, regardless of whether or not the current tool supports multi-touch events. Hold down the spacebar while using the multi-touch tablet to use it for workspace navigation.
- Smoothing and zooming support has been enhanced to support multi-touch actions, and should also work better with the touch ring on Wacom tablets.

The following tables outline the tools that offer this support.

Draw Tools

Draw tools that support multi-touch actions are Transform Points, Transform Points, Transform Points, Select Points, Freehand, and Draw Shape.

Multi-touch action	Function
One finger gesture	Translates selected points
Two-finger gesture	Scales or rotates selected points
More than two fingers	Behaves similarly to two-finger gestures

Layer Tools

The Transform Layer tool supports multi-touch actions.

Multi-touch action	Function
One finger gesture	Translates selected layer
Two-finger gesture	Scales or rotates selected layer
More than two fingers	Behaves similarly to two-finger gestures
Four-finger drag	Allows you to rotate an object in 3D

Camera Tools

Camera tools that support multi-touch actions are Track Camera, Roll Camera, and Zoom Camera.

Multi-touch action	Function
One finger gesture	Tracks or Pan/Tilts camera
Two-finger gesture	Rolls or zooms camera
More than two fingers	Behaves similarly to two-finger gestures

Workspace Tools

Workspace tools that support multi-touch actions are Pan canvas.

Multi-touch action	Function
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One finger gesture	Pans the canvas
Two-finger gesture	Scales or rotates the canvas
More than two fingers	Behaves similarly to two-finger gestures
Five fingers down on tablet	Resets the canvas.

Other Actions

Multi-touch action	Function
Two-finger double-tap	Resets whatever property you are currently editing.

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