Specular TextureScape User's Manual

Written and designed at

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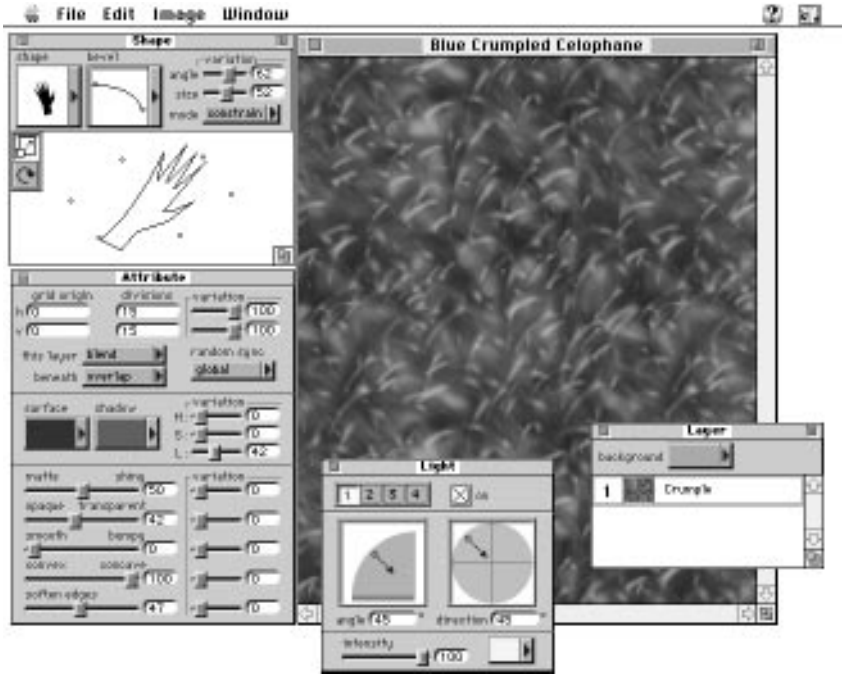
Introduction

Welcome to TextureScape!

Welcome to Specular TextureScape. TextureScape is a graphics tool for generating algorithmic patterns and textures unlike any other program available on the Macintosh. Using PostScript-based outlines as fundamental building blocks, TextureScape allows you to build tileable textures that are resolution independent and can be animated.



Images in TextureScape are constructed of layers. Each layer combines a repeated PostScript shape with surface, color and lighting effects to create rich and detailed textures. Any number of layers can be added, allowing you to create complex textures that can still be tiled.

In addition to creating a single image, TextureScape can automatically "morph" between any two images over time. TextureScape allows you to define any number of these morphs and then render an animation.

USING TEXTURESCAPE WITH OTHER GRAPHICS PROGRAMS

TextureScape brings a wonderful new set of creative possibilities to artists creating both still imagery and animation on the Macintosh.

TextureScape works well in the print environment, because all the images it generates are based on PostScript outlines. As a result, TextureScape can render images of any size (up to 4,000 pixels by 4,000 pixels) without any loss of resolution. Illustrators can work and experiment with a small image during the creative process, and then render a large final image with no loss of resolution. Furthermore, TextureScape's images are always tileable, making even billboard-sized textures a reality.

TextureScape renders images with an alpha channel, making it easy to combine TextureScape images with other images in programs such as Specular Collage™ or Adobe Photoshop™.

TextureScape is well-suited to any work that involves animation. Besides generating unique backgrounds and images, TextureScape can animate between them for some unique effects previously found only on high-end computer workstations. TextureScape animations can be easily composited with other work in programs such as Adobe Premiere™, Adobe AfterEffects™, or Radius VideoFusion.™

TextureScape works extremely well with 3D programs such as Specular Infini-D. Most 3D programs allow you to import an image to wrap around an object, and it is usually preferable to have the image as small as possible to conserve memory. Most of these programs also allow you to repeat the image around the object. As a result, having tileagle images becomes extremely useful. TextureScape's ability to create rich textures that are always tileable makes the program an asset to any 3D artist.

HOW DOES TEXTURESCAPE WORK?

There are three types of documents in TextureScape: Images, Sequences and Shape Libraries. A TextureScape *image* is made of any number of layers. For each layer, TextureScape allows you to define a shape, the visual characteristics of that shape, and how that shape is repeated.

The visual characteristics of the shape (its surface information), include surface, shadow and light color, as well as characteristics like shine, transparency, bumpiness, bevel, etc.

TextureScape can randomly vary many of these attributes on a per-layer basis, making it easy to create complex, organic textures. Up to four lights may be specified for each texture layer, with control over angle, direction, intensity and color.

Each layer has information about how the shape is repeated. For each layer, TextureScape allows you to define a grid. This grid is used to repeat the shape. For example, you could define a 4 by 4 grid, which would mean 4 repeats of the shape both horizontally and vertically. TextureScape can also randomly offset shapes from the grid, creating patterns where the repetition is not so obvious.

TextureScape allows you to create any number of layers and automatically composites all of the layers together to create the final image.

All of this information is saved as an image *description*. An image description contains all the information used to generate the image and is completely self-contained. You have the option of saving images with only their descriptive information as a file on disk (which can be very small — most often in the 10K to 20K range).

TextureScape also allows you to animate between images. A *Sequence* is simply a timeline of keyframes of image descriptions. TextureScape will automatically interpolate between them to create your animation. TextureScape animations are visually exciting because they do not simply fade from one image to another, but "morph" between the different parameters of each image.

The final document type generated by TextureScape is the *Shape Library*. Shape library documents contain TextureScape bezier drawing tools, allowing sophisticated shapes to be created within the program. Shapes from other drawing packages may also be imported into shape libraries and edited with TextureScape's drawing tools.

MINIMUM COMPUTER REQUIREMENTS

TextureScape runs on all Macintosh computers with a 68020 chip or higher, and requires System 7.0 or higher. It does not require an FPU. The standard RAM configuration is 4MB, although the program can run with as little as 2MB.

TECHNICAL SUPPORT

Specular International offers a range of additional resources to help you with questions concerning TextureScape. Specular maintains on-line user forums on America Online that are excellent places to get answers and advice on particular topics, as well as exchange ideas with other TextureScape users and Specular staff.

- *On America Online, use keyword: SPECULAR*
- *On the internet, send mail to support@specular.com*
- *For access to Specular's World Wide Web site, use http://www.specular.com*

Free telephone technical support is available to registered users of TextureScape Monday through Friday, 10am-6pm Eastern Time at (413) 253-0499. Be sure to have your serial number available when you call.

To be eligible for technical support, you must send in your registration card.

REGISTERING YOUR COPY OF TEXTURESCAPE

To qualify for free technical support and receive notices of bug-fix updates or feature upgrades, you must send in your registration card. The registration card is contained in your TextureScape package. Simply fill it out and drop it in the mail. If you change your address after registering, please call us so we can update your record in our database, or send us a standard Post Office change of address notice.

WHAT IS (AND WHAT IS NOT) TECHNICAL SUPPORT

Our technical support specialists are friendly, expert users who can assist you with any problems or questions you may have in working with TextureScape. Technical Support can also provide general help and answers about the hardware and system configurations that best support our programs. If you are a user new to the Macintosh interface and technology, or if you have questions about non-Specular software, our representatives can refer you to the appropriate support

services.

FEEDBACK

We are very interested in hearing your feedback about TextureScape. Virtually all past and future changes and improvements are based on user requests and input. If you have comments or feature requests, please send them to:

TextureScape Product Manager
Specular International
479 West Street
Amherst, MA 01002

Input may also be sent via the internet to texturescape@specular.com

Tutorial

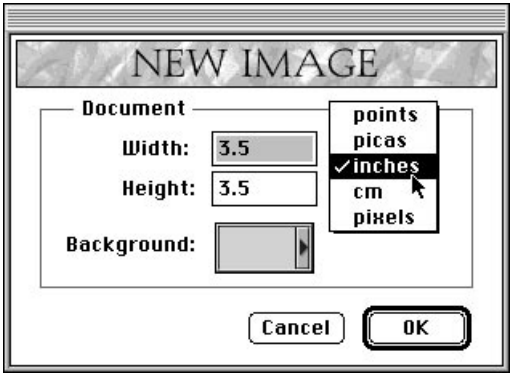
2 Creating a Basic Pattern

Now that you are familiar with the basic concepts of TextureScape, this tutorial will guide you through the process of creating a texture. There are so many possibilities to explore in TextureScape that it would be impossible to cover them all in this manual. This tutorial will give you a basis from which to start, and give you some ideas as to where to go next.

CREATING A NEW DOCUMENT

To create a new document in TextureScape:

1. **Select NEW from the FILE menu.**
   Note that there are three options under this menu: IMAGE, SEQUENCE and SHAPE LIBRARY. Select IMAGE, and the New Image dialog will appear.



The New Image dialog box

2. **Enter the size of the document.**
3. **Select the unit of measurement to be used from the pop-up menu.**
4. **Select a Background Color by clicking and holding the arrow next to the color swatch.**
   A color menu will pop-up to let you select a color.
5. **Click on the OK button.**

For the purposes of this Tutorial, use inches as the unit with a size of 3 inches wide by 3 inches tall.

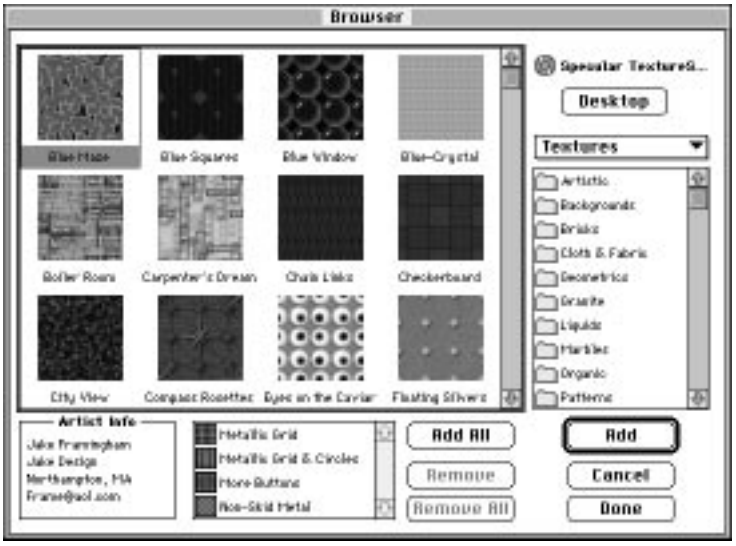
Before you continue with the tutorial, make sure the Divisions values are set to 4 x 4. The Divisions values are located on the Attribute palette.

THE BROWSER

TextureScape offers a unique way to preview and select groups of saved TextureScape files to be opened in a single batch. When opening an existing texture file, you can either choose the standard OPEN... command to select a single file, or choose BROWSE... to open the Browser.

The Browser displays TextureScape files in a large preview format and allows you to choose a selection of files to be opened all at once. In the Browser, simply click once on a folder on your hard drive containing TextureScape files, and the Browser will display the files. Scroll through the previews, select a few to be opened in the same batch, or select all the files in the folder by clicking the "Select All" button.

The Browser also displays information about a selected texture in the lower-left corner of the dialog. Information about the artist who created the texture is entered by clicking the ARTIST INFO button in the SAVE dialog.



To view texture previews, click once on any folder containing TextureScape files.

TEXTURESCAPE'S WINDOWS AND PALETTES

The TextureScape environment is made up of the Image window and five floating palettes: Shape, Attribute, Apply, Light and Layer. Just about every parameter of a texture in TextureScape can be modified using these floating palettes, making the creation process as interactive as possible. Palettes can be moved and placed anywhere on the screen, customizing the environment to suit your working style.

THE APPLY BUTTON

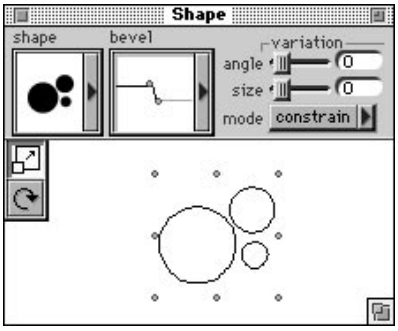
Any changes you make to any of the palettes will be shown in the Image window. In order for the changes to take place, however, you must click the Apply button. The ENTER and RETURN keys on your Macintosh keyboard are also dedicated to this function.

The advantage of this system is that it allows you to make a number of changes without having to wait for TextureScape to re-render the image after every modification.

To apply the current changes made while working with TextureScape's floating palettes, click the APPLY button or hit the ENTER or RETURN keys on the keyboard.

USING SHAPES

TextureScape is unique among texture generation programs in that it uses PostScript™ based shapes to define textures. All shape parameters are controlled in the Shape palette, including shape selection, shape scale, shape rotation, bevel selection and bevel editing.



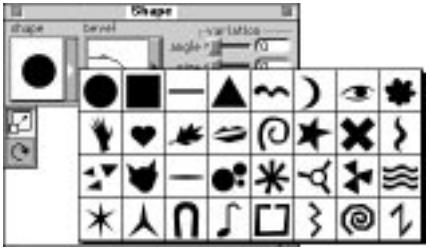
The Shape Palette

The Shape palette is divided into three areas. The top-left half of the palette controls shape and bevel selection. The top-right half controls the variation (or randomization) of shape size and rotation. (These variation controls are described in more detail in Chapter 6.) The bottom half of the palette is dedicated to manipulating the selected shape.

CHOOSING A SHAPE

TextureScape comes pre-loaded with a large number of pre-defined shapes for your use. By default, TextureScape chooses the Circle shape. To select a different shape:

1. **Click and hold the arrow next to the Circle or whatever shape is currently selected. This will bring up the shape selection menu.**



To choose a shape, simply click on this swatch and select the shape you want from the pop-up menu.

2. **TextureScape will show you a menu of the currently loaded shapes.** To select one, simply click and hold the arrow, slide the mouse over the desired shape and release. The shape is now selected, and can be manipulated with the tools in the Shape palette.

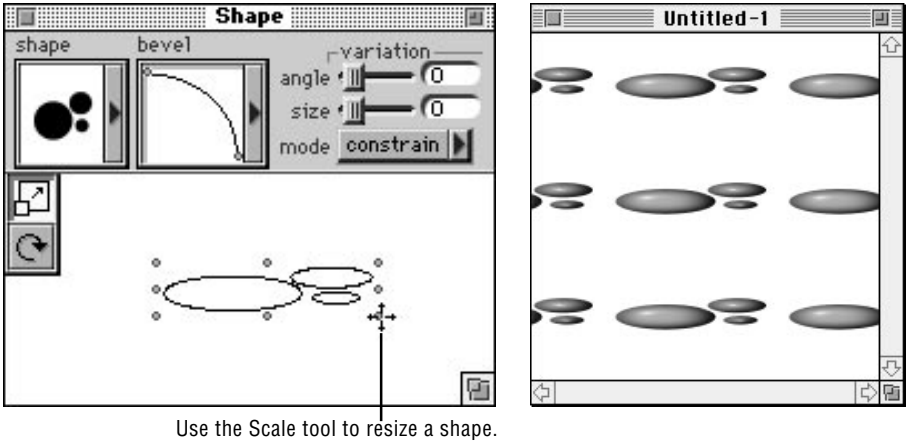
The shape will not appear in the Image window until you click APPLY or press the RETURN or ENTER keys.

MODIFYING A SHAPE

The bottom half of the Shape palette is for changing the rotation and scale of the selected shape. Like a drawing program, the shape has 8 handles that appear around the shape to modify it.

Scaling a Shape

To scale a shape, select the Scale tool and click and drag on any of the 8 handles around the shape. The scale of the shape will change differently, depending on which handles you use. Note, however, that all scaling takes place symmetrically from the center of the shape.



Use the Scale tool to resize a shape.

Grabbing any of the corner handles on the shape allows you to scale in two dimensions at the same time.

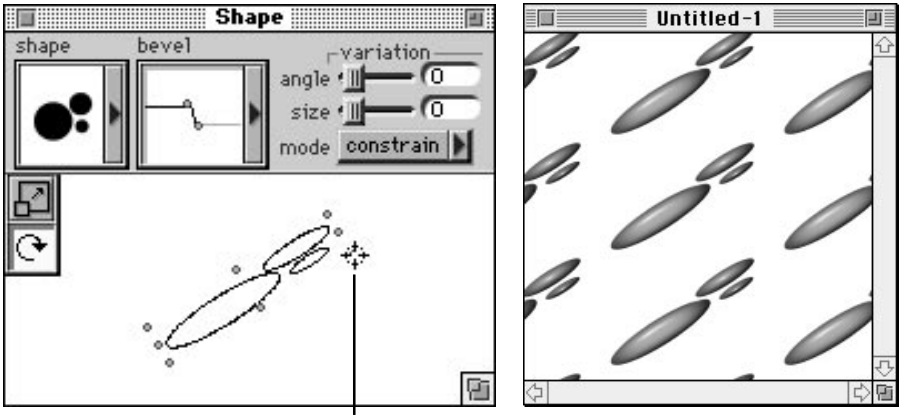
Grabbing the side handles on the shape will resize the shape in one dimension only.

Holding down the SHIFT key or the OPTION key while using the Scale tool will resize the shape proportionately. Note that with the SHIFT or OPTION keys held down, the choice of handles becomes irrelevant.

Holding down the COMMAND key will temporarily toggle to the Rotation tool.

Rotating a Shape

To rotate a shape, select the Rotation tool and click and drag on any of the 8 handles around the shape. Unlike the Scale tool, it does not matter what handle you use to rotate. Rotation always happens around the center of the shape.



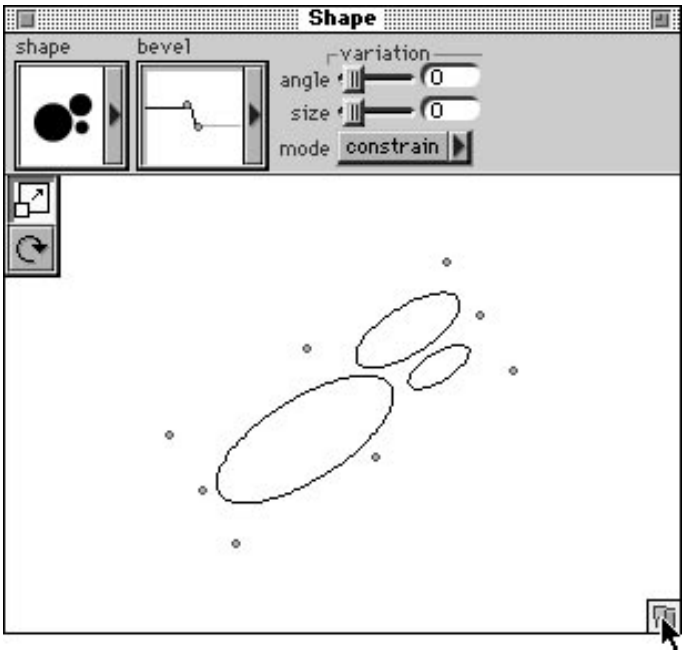
Use the Rotate tool to rotate a shape.

Holding down the SHIFT key or the OPTION key while using the Rotate tool will limit the rotation to 45˚ increments.

Holding down the COMMAND key will temporarily toggle to the Scale tool.

Resizing the Shape Palette

The Shape palette can be resized to accommodate the creation of a large shape. To resize the Shape palette, click on the Grow box in the bottom-right corner of the Shape palette. Clicking on its Zoom box will toggle the palette from its current size to the new size created by dragging the Grow box.

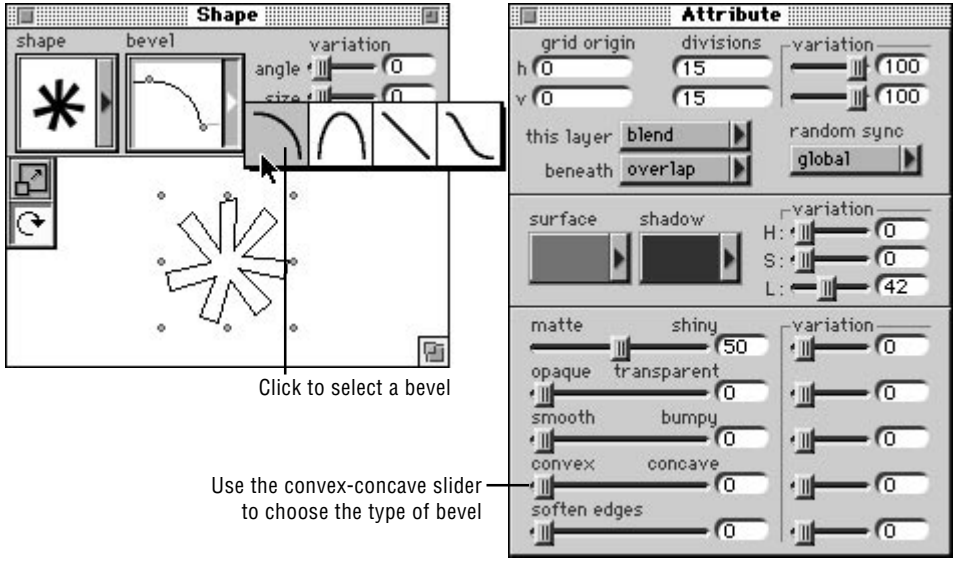


3 Shapes and Bevels

Bevels give the shapes in TextureScape a three-dimensional look. A bevel is necessary to see surface characteristics like light color. TextureScape lets you select from different bevel types and modify the characteristics of a selected bevel.

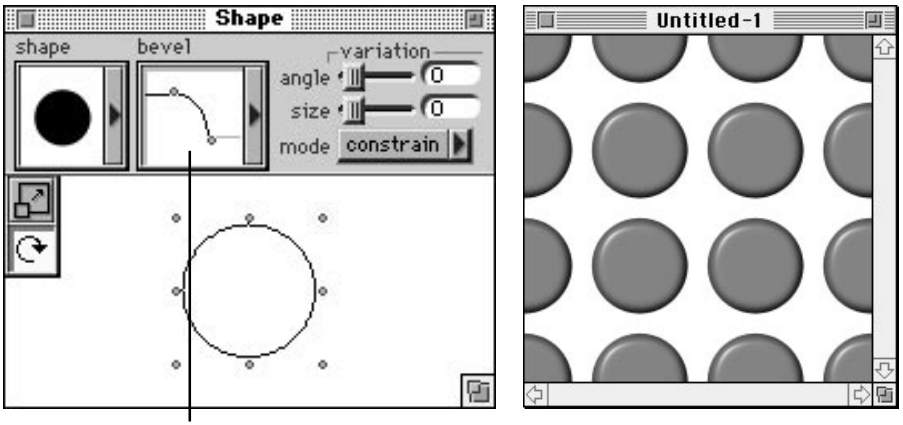
BEVEL CONTROLS

The bevel controls are found on TextureScape's Shape and Attribute palettes.



Bevel Selection

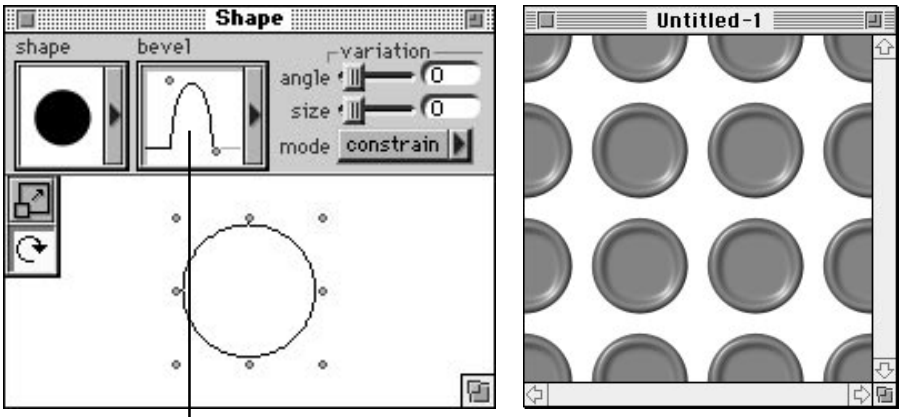
TextureScape is pre-loaded with a variety of different bevel types to choose from. The default bevel is rounded and medium in size.



The default bevel produces a rounded bevel.

To select a different bevel:

1. **Click and hold on the arrow next to the rounded bevel or whatever bevel is currently selected.**
   This will bring up the bevel selection menu, showing you the different bevel types to choose from.
2. **To select a bevel, move the mouse directly over the desired bevel and release the mouse button. The bevel is now selected.**



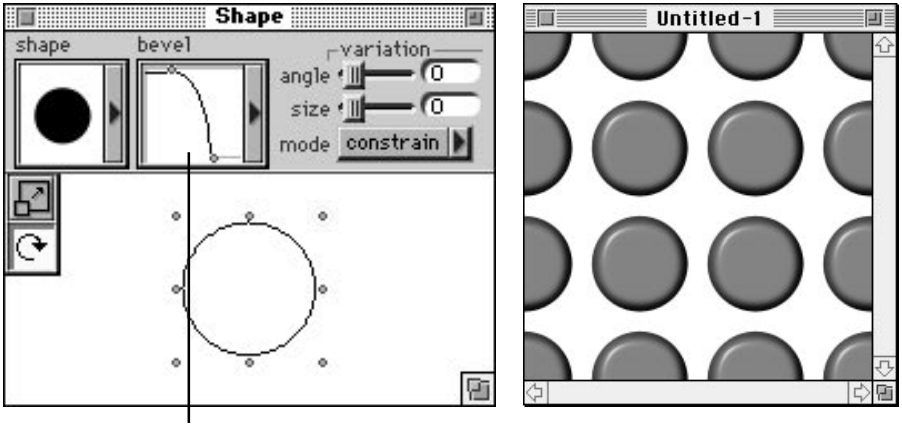
Different bevels produce varying effects.

Bevel Size

The size controls allow you to modify the size of the bevel. The larger the bevel, the more area of the shape is taken up by the bevel. You can control the size of both the width and the height of a shape's bevel.

To make the bevel taller:

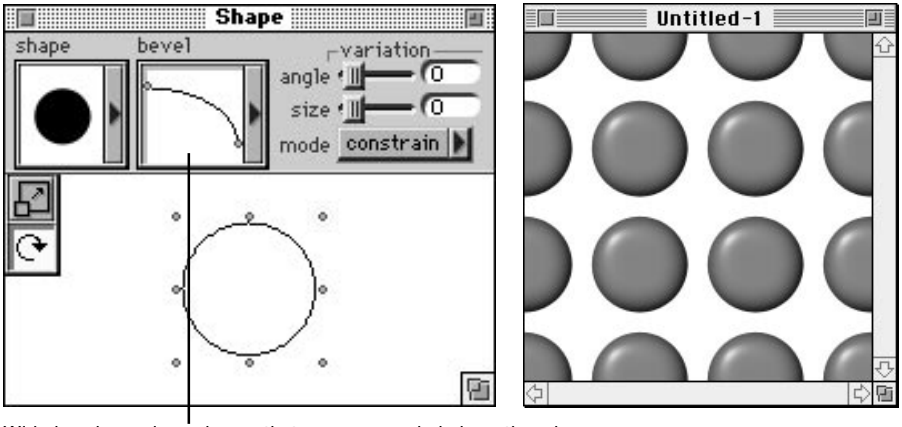
1. **Move your mouse over the control point at the top of the bevel curve.** Your mouse pointer will turn into an up/down arrow.
2. **Click and drag the mouse to increase or decrease the height of the bevel.**



High bevels produce shapes that appear to have plateaus.

To make the bevel wider:

1. **Move the mouse over the control point at the right side of the bevel curve.** Your mouse point will turn into a left/right arrow.
2. **Click and drag the mouse to increase or decrease the width of the bevel.**

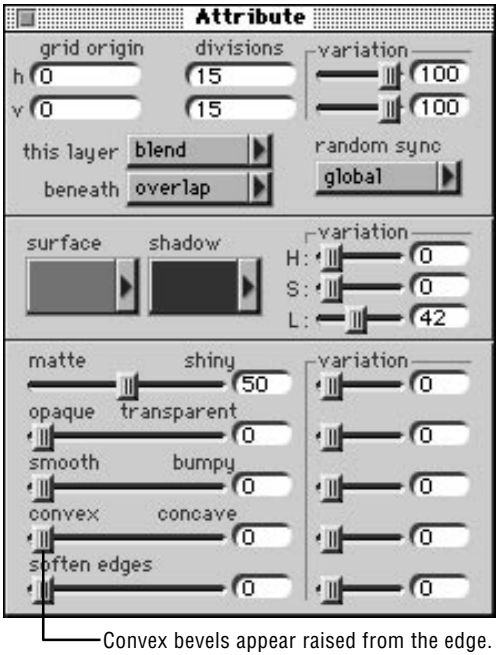


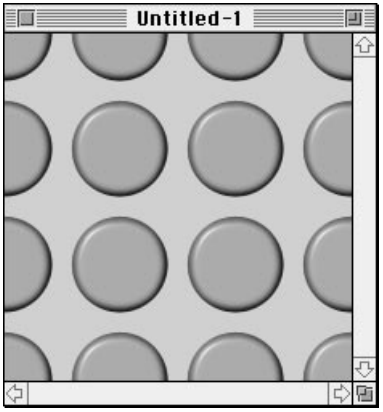
Wide bevels produce shapes that appear rounded along the edges.

Note that you won't see the effect of changing the bevel until the apply button has been pressed or the ENTER or RETURN keys are hit.

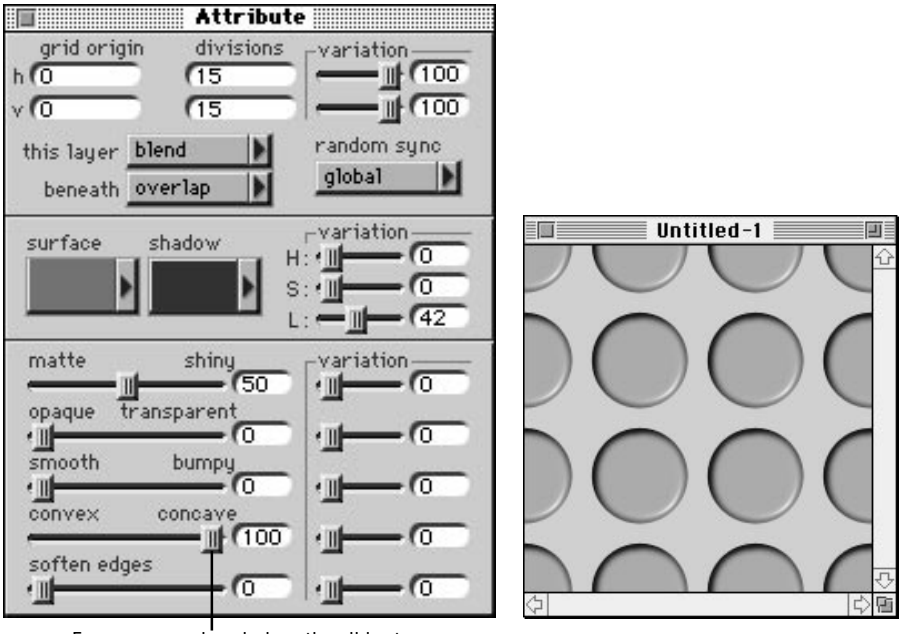
Bevel Type

The controls for changing the bevel type are found on the Attribute palette. There are two types available: Convex and Concave. The default bevel type is Convex. To make the bevel appear concave, simply drag the slider to 100 (the opposite end) so it rests under Concave. Points between Convex and Concave will result in various degrees of convexity or concavity. Placing the slider at 50 results in no bevel, since the mid-point between convex and concave is flatness.





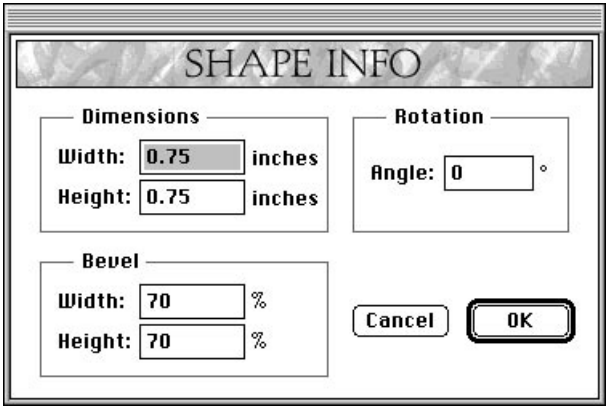
Convex bevels appear raised from the edge.



For a concave bevel, drag the slider to concave.

CHANGING A SHAPE NUMERICALLY

The scale, rotation and bevel size of a shape can also be adjusted numerically. To modify a shape's parameters numerically, either double-click on the shape or select SHAPE INFO... from the IMAGE menu. The bevel size is the percentage of the shape's area that the bevel uses.



For precision, enter numeric values for the shape's width, height, rotation and bevel size in the Shape Info dialog box.

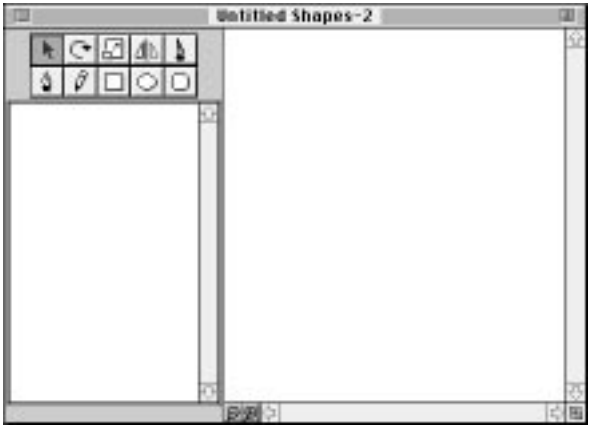
Drawing Shapes

TextureScape contains an integrated set of bezier drawing tools, similar to those found in Adobe Illustrator™ or Macromedia Freehand™, for drawing custom shapes for use in TextureScape.

You remember that TextureScape produces three types of documents: Images, Sequences, and Shape Libraries. It is in Shape Library documents that TextureScape's drawing tools are accessed. All shapes drawn with TextureScape's drawing tools are stored in customizable Shape Libraries. A detailed description of Shape Libraries can be found immediately following this section on drawing shapes.

To create a new Shape Library in TextureScape:

1. **Select NEW from the FILE menu.**
2. **Select SHAPE LIBRARY and a new library document will appear.**



TextureScape's drawing tools are accessed in shape library documents.

To begin drawing a shape, select the pen or pencil tool, or one of the polygon tools, and start drawing. To draw a new shape, choose NEW SHAPE from the EDIT menu.

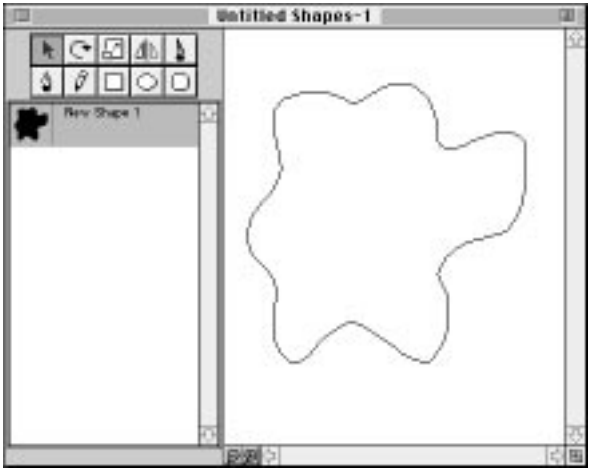
As you draw, you may want to see what the rendered results of your outlines look like. To make the outline you are working on active in the shape pop-up menu of the Shape palette, simply double-click on the name of the shape in the shape library list. Then, click on the Image document and click APPLY. Your results will appear.

Once you make an outline active in the shape pop-up (by double-clicking on the name of the shape in the Shape Library), it remains active until a different shape is selected. Therefore, you are free to move between the Image and Shape Library documents quickly and easily.

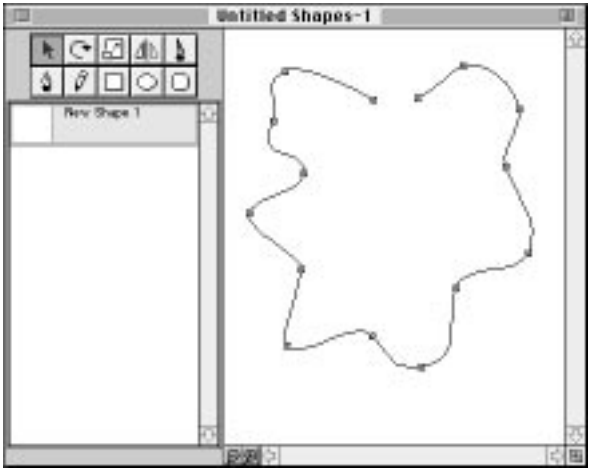
Guidelines for drawing shapes

In order for outlines drawn in TextureScape's drawing area to appear in the image window, they must be closed paths. A closed path is one that has no endpoints. In other words, its first and last points have been connected. By contrast, an open path is a path that has definite endpoints. Open paths are not recognized by TextureScape's rendering engine and will not appear in the Image window.

The small previews to the left of the shape names in the shape library list allows you to recognize whether a path is open or closed. If the path is closed, it will be filled with black. If the path is open, it will not appear in the preview.



A closed path.



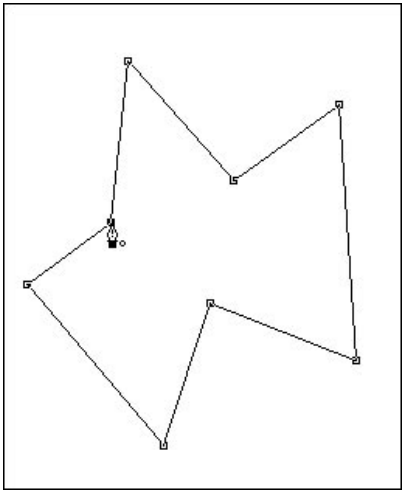
An open path. Open paths are not recognized by TextureScape.

Shapes drawn with the polygon tools are automatically closed paths.

There are three ways to create closed paths when using TextureScape's pen and pencil tools. (Descriptions of the pen and pencil tools can be found later in this section.)

To close a path drawn with the Pen tool:

1. **Begin drawing a path with the Pen tool.**
2. **To immediately close the path, click directly on the point that began the path.**
   A small "o" will appear next to the cursor indicating it is positioned over the originating point of the path. Clicking will successfully close the path.



Closing a path when actively drawing with the Pen tool.

To close a path drawn by the Pencil tool:

1. **Begin drawing a path with the Pencil tool.**
2. **To immediately close the path, drag the pencil cursor directly over the area that began the path.**
   Release the mouse button and the path will close. If the cursor is not close enough to the originating point, the path may not close. To close the path, select the final point in the path and drag it in the direction of the originating point. The two points will snap together, closing the path.

To close an open path:

1. **Click once on the path with the Arrow tool to select it.**
2. **Select either the first or last point of the path with the Arrow tool and drag it in the direction of the opposing point.**
   The point will "snap to" the other point and the path will be closed.

Snapping together points other than the first and last points of a path will not create a closed path.

THE BEZIER DRAWING TOOLS

The Toolbox

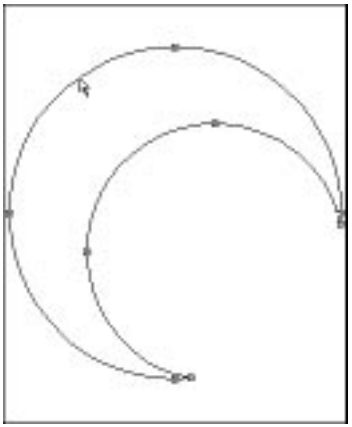
The Toolbox for TextureScape's bezier drawing tools

The Drawing Tools Toolbox contains the tools used to create and manipulate shapes.

Arrow Tool (Selection Tool)

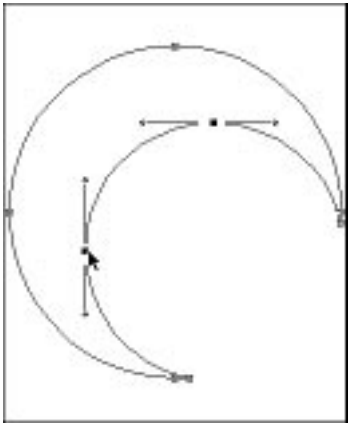
Before you perform any operation on an outline, you need to indicate which part you want to work on. You do that by selecting the desired part. The Arrow tool is used for selection and manipulation of the various elements of an outline. It is used to select and position anchor points, direction handles and entire outlines. Points can be in one of three states: de-selected, highlighted or selected. When the Arrow tool is over a point, handle or outline, it will fill in with white to indicate something can be selected or moved. Press the DELETE key to remove any selected items.

Click once on a de-selected outline to highlight all the points on that outline. (Highlighted points are represented by hollow squares.) This is also considered selecting the outline. Any operation you now apply will affect the entire outline. The outline can be moved as a whole by clicking on it and dragging.



Click once on outline to highlight all of its points.

Clicking on a highlighted anchor point will select the point. A selected point is represented by a filled square. If there are direction handles associated with a point, they will become visible when the point is selected. (Direction handles are described in the section pertaining to the Pen tool.) You can drag a marquee around an area to select all the points in that area. Double-click on an outline to select all the points on that outline.



Click on a point, double-click on an outline or drag a marquee with the Arrow tool to select points and show direction handles.

The entire contents of a window can be selected by choosing Select All (COMMAND+A) from the EDIT menu. Choosing Select None (COMMAND-SHIFT+A) will de-select everything in the active window.

Once a point or group of points is selected, you may move them by clicking on one of the selected points and dragging. The direction handles of an anchor point are manipulated by clicking on them and dragging.

Selected outlines may be duplicated by choosing Duplicate from the EDIT menu.

Hold down the SHIFT key after clicking on a point, handle or outline to constrain movement to 45° angles emanating from the point. An asterisk-like shape will appear indicating the permitted directions of movement.

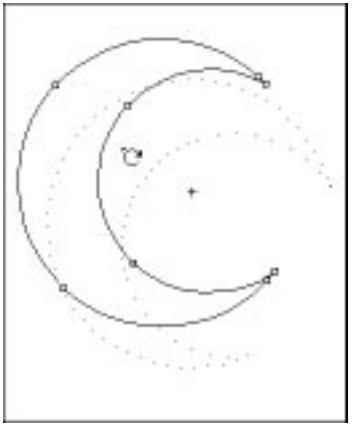
If another tool is selected, you can temporarily switch to the Arrow tool at any time by holding down the CONTROL key.

Rotate Tool

The Rotate tool allows rotation of the currently selected points around a specified centerpoint. Rotation can be applied to a point, a group of points, an outline or a group of outlines. Rotation is a two-step process: First, the rotation centerpoint (represented by a small cross-hair) must be set; then the selection can be rotated.

To rotate a selection of points:

1. **Select the desired control points with the Arrow tool as described above.**
2. **Select the Rotate tool in the Toolbox.**
3. **Click once in the window to specify the center-point reference for rotation.**
   A cross-hair marker will be placed indicating this center-point.
4. **Click and drag the mouse to rotate the selected points around the center-point.**



Click once with the Rotate tool to set the center-point. Then click and drag to rotate the selection.

Hold the SHIFT key while using the Rotate tool to constrain rotation to 45° increments.

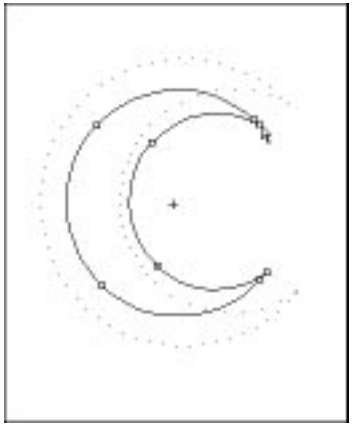
Move the cursor on a straight horizontal line away from the reference point when dragging to rotate; this gives you more precision and control.

Scale Tool

The Scale tool allows you to scale the currently selected outlines or points. As with the Rotate tool, using the Scale tool is a two-step process: First you must set a reference point for scaling, then you click and drag to scale.

To use the Scale tool:

1. **Select an outline or a group of points with the Arrow tool.**
2. **Choose the Scale tool and click once in the window to set the scaling reference point.**
   A small cross-hair mark will indicate the reference point.
3. **Click and drag in the window to scale the points.**
   Dragging up or down scales them vertically, to the right or left scales them horizontally. As you drag with the Scale tool, the curve will be scaled relative to the reference point. Points close to the reference point will be scaled less than those far away.



Use the Scale tool to change the size of outlines or groups of points.

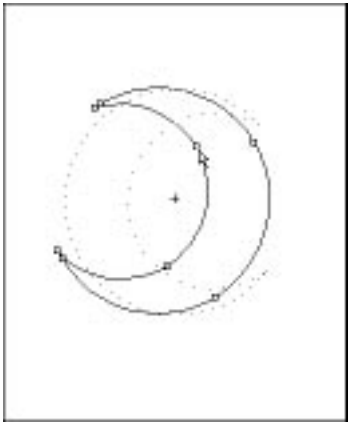
Hold the SHIFT key while dragging with the Scale tool to constrain movement to the eight horizontal, vertical and diagonal directions from the point where you clicked. Dragging along the diagonal lines is most useful as it will maintain the aspect ratio of the object being scaled.

Flip Tool

The Flip tool allows you to mirror the selection of points around an arbitrary line and then rotate the flipped points. As with the Rotate and Scale tools, using it is a two-step process: First you must click once to set a reference point, then click and drag to flip and rotate. Unlike the Rotate and Scale tools, however, the second click has special significance — it causes an imaginary line to be drawn between the reference point and the point where you clicked. This line is the axis around which the outline is flipped. The mid-point of the line is used as the center-point for rotation while dragging.

To use the Flip tool:

1. **In the window, select an outline or a group of points with the Arrow tool.**
2. **Choose the Flip tool and click once in the window to set the reference point.**
3. **Click and drag to flip and rotate the selected points or outlines.**



Use the Flip tool to mirror and rotate an outline.

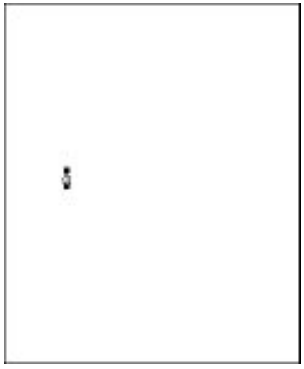
Hold the SHIFT key while using the Flip tool to constrain rotation to 45° increments.

Pen Tool

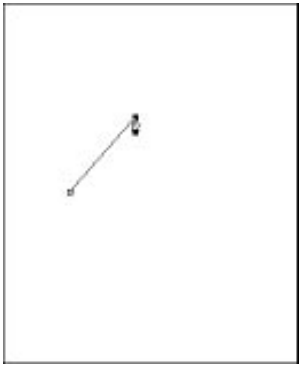
Both the Pen and Pencil tools are used to draw new outlines. Outlines are created with the Pen tool by successively clicking to place a series of anchor points. Each point you place will be connected to the previous point by a line.

Creating an anchor point by clicking with the Pen tool leaves the new point selected. Any time an endpoint of a line is selected, clicking with the Pen tool to place another point will connect them, leaving the new point selected.

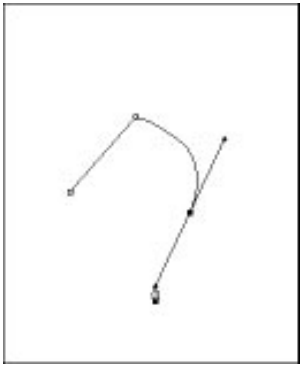
If you click and drag when placing a point, direction handles will appear and make a smooth curve to the previous point, rather than a straight line. The position and orientation of the direction handles relative to the anchor point determines the size and shape of the curve.



Click with the Pen tool to create an anchor point.



Click again to add a straight line.

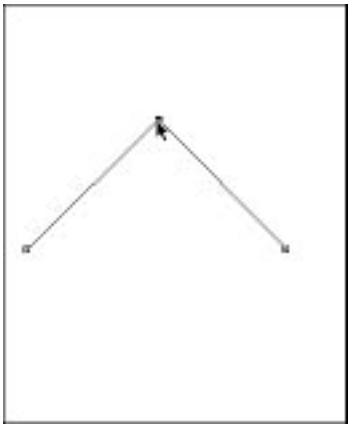


Click and drag to create a smooth curve.

There are four different point types to choose from when drawing shapes: plain, corner, curve and smooth.

Plain Point

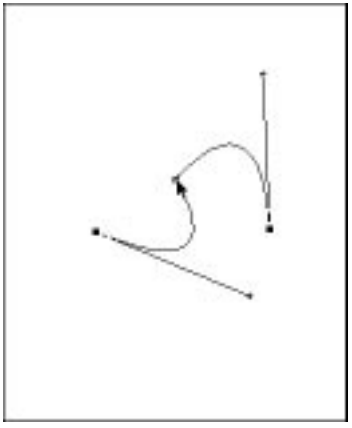
A plain point is completely sharp and has no curves on either side of the point. This type of point is created when you click once with the Pen tool.



Plain points have no curves on either side.

Corner Point

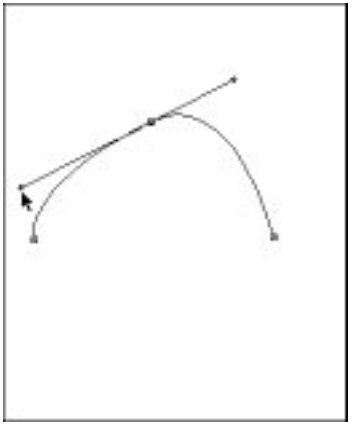
A corner point has curves on both sides, but the direction handles are controlled independently, allowing for a discontinuous outline.



Corner points allow you to adjust the surrounding curves independently.

Curve Point

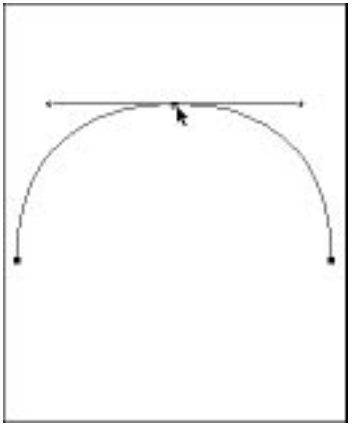
A curve point is curved on both sides. The direction handles are connected but can be of different lengths. This is the type of point created when clicking and dragging with the Pen tool.



Curve points have continuous curves on either side, but the sizes of the curves are not connected.

Smooth Point

Smooth points have the same size curve on either side. They are similar to curve points except the direction handles on each side of the points are always the same length.



Smooth points have continuous curves on either side, and the lengths of the direction handles are the same.

To change a point type:

1. **Select the point to be changed with the Arrow tool.**
2. **Hold down the COMMAND key and click directly on the point.**
   The point will be changed to the next point type in the cycle. In other words, if a plain point is COMMAND-clicked, it will become a corner point. If a corner point is COMMAND-clicked, it will become a curve point.

However, to change a point to a smooth point:

1. **The point must already be a curve point and selected.**
2. **Hold down the CONTROL key and drag on one of the direction handles.**
   The point will become a smooth point.

Pencil Tool

The Pencil tool allows you to draw outlines freehand. Click the Pencil tool and drag the mouse to draw an outline. TextureScape will create anchor points and fit a smooth curve between them.

Use the Pencil tool to draw freehand curves.

It is also possible to draw straight lines with the Pencil tool if the SHIFT key is pressed.

Once an outline is created, the anchor points and direction handles can be manipulated with the Arrow tool.

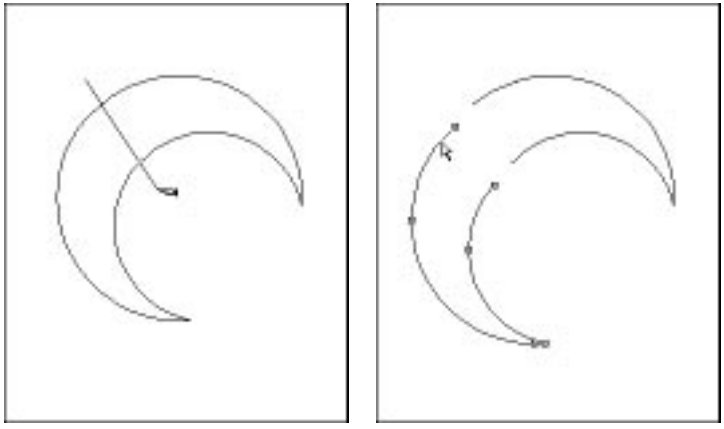
Hold the OPTION key and click on an outline with the Pen or Pencil tool to add an anchor point on the outline. A "+" symbol will appear next to the cursor indicating you are adding points. Hold the OPTION key and click on an anchor point to delete that point. A "–" symbol will appear, indicating that you are removing points.

Hold the SHIFT key while dragging to constrain the angle of the direction handle to 45° increments.

Remember, you can add to the end of an outline by selecting the endpoint and drawing with the Pen tool.

Razor Tool

The Razor tool is used to split outlines. To use this tool, click and drag a straight line across the portion of the curve you wish to split. The curve will be split at all points the line has crossed.



Use the Razor tool to split a line or series of lines into two parts.

Polygon Tools

The Polygon tools are used to create simple closed-path polygon shapes. You can choose from three different shapes: rectangle, oval and rounded rectangle. The shape is created by clicking in a window and dragging out the shape to the desired scale.

Holding the SHIFT key while dragging with the Polygon tool constrains the shape so it has equal height and width. This will create perfect circles and squares.

ADVANCED OUTLINE OPERATIONS

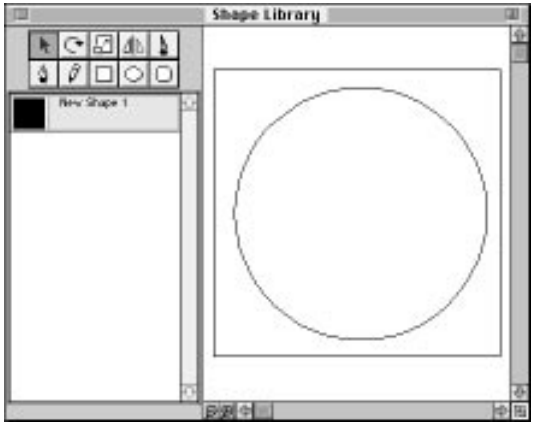
TextureScape's drawing tools provide you with a tremendous amount of power and control. The following are some advanced techniques on how to get the most out of the tools.

Reverse Path

When working with more than one outline in TextureScape's drawing area, it is useful to use the Reverse Path command to create interesting "punch outs" of intersecting paths. The Reverse Path command controls whether paths that overlap each other are transparent (punched out) or filled.

To create a shape with a reversed path:

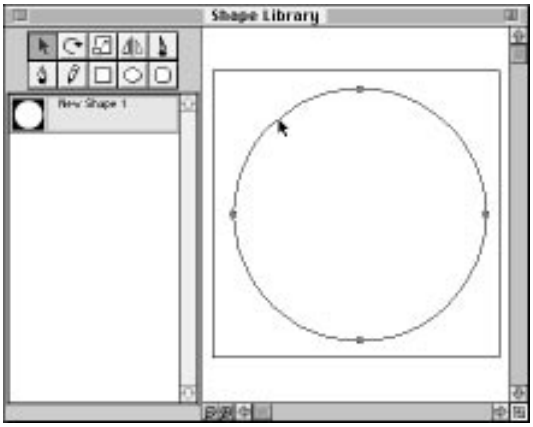
1. **Open a shape library document and draw a large square.**
2. **Draw a circle inside the square.**
3. **Double-click the shape in the shape library list to make it active in the Shape pop-up, click in the Image window, and click Apply.**
   Only the square is visible in the Image window.



Reverse path not activated.
Notice how the icon of the shape only shows the outside path.

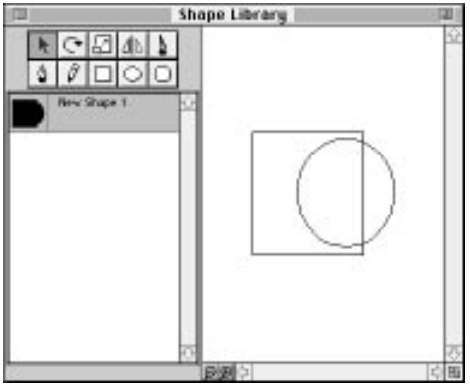
4. **Return to the shape library document and with only the circle selected choose REVERSE PATH from the EDIT menu.**
5. **Make the Image window active and click the Apply button.**

The effect of reversing the path of the circle is that it now appears to be "punched out" of the square shape.

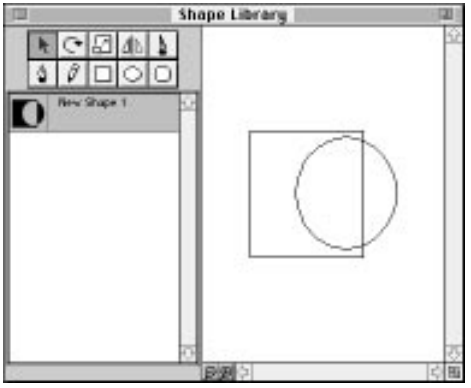


Reverse path activated.
Notice how the icon of the shape shows the inside path punch out of the ouside path.

By default, TextureScape's drawing tools automatically join together closed outlines that are touching. In the above example, if the path of the circle is reversed again and the outline is dragged so that it is only half-covered by the square, the resulting effect is of the square and circle being joined together.



Overlapping outlines appeared joined when reverse path is not activated.



Overlapping outlines are 'punched out' when reverse path is activated.

Outline Feedback

TextureScape's bezier drawing tools allow you almost instant feedback on how a particular shape appears when rendered in the Image window. Although the Shape Library and Image documents are totally separate, they are closely integrated with each other. It is possible to adjust a shape in a Shape Library and view the rendered results in the Image window almost immediately.

Here's how:

1. **Create a new Shape Library or open an existing one.**
2. **Draw a new shape or adjust an existing one.**
3. **Double-click the name of the shape in the Shape Library list (making the shape active in the Shape pop-up of the Shape palette).**
4. **Select the image window to make it active and click Apply to view the changes.**
4. **Return to the Shape Library and adjust the outline.**
5. **Click the Image window and then Apply.**
   The shape has changed right before your eyes.

Using Shapes From Other Programs

TextureScape also allows you to import shapes from other drawing programs, This means you are not limited to using the default shapes found in the Shape pop-up menu, or shapes generated with TextureScape's own drawing tools. You can create custom shapes in either Adobe Illustrator or Macromedia FreeHand and import them into TextureScape. Simply follow the guidelines below when creating the shape, and then import the desired shape into a TextureScape shape library.

TextureScape can import the shapes from:

- *Adobe Illustrator™*
- *Macromedia Freehand™ (Exported as EPS only)*

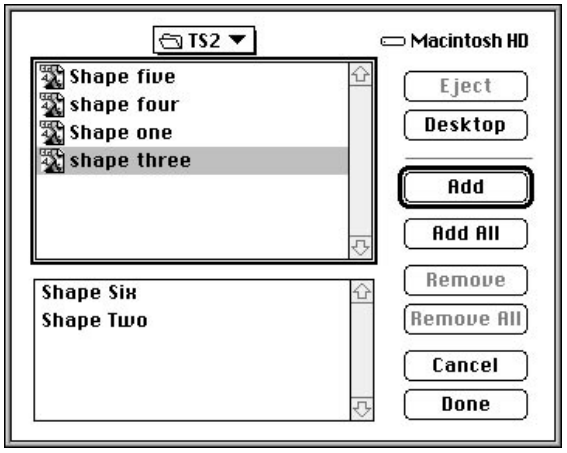
Not all commands in these packages will be imported. Here are some guidelines to ensure that as you create shapes for use in TextureScape, you make them to be used as effectively as possible by TextureScape.

- *Shapes should consist of one or more closed, filled, unstroked paths.*
- *Open paths are not supported.*
- *A path can be constructed with any number of lines and curves; however, shapes should generally be kept simple. Complex shapes will take more time to render, and since TextureScape adds complexity by combining shapes, there are diminishing returns on the amount of detail complex shapes will show.*
- *Text is not directly supported. To import text or character shapes, you must first convert the type into paths within the illustration program itself.*
- *Do not include header or preview data in the file. This will allow TextureScape to import these files faster.*
- *The shape's size does not matter. TextureScape looks at the bounding box that encloses the drawing and normalizes the points that define it. Final scale is* ***always*** *determined within TextureScape via these scaling parameters.*

Before importing a shape, you must first open a new or existing Shape Library.

To Import a New Shape

1. **Select NEW from the FILE menu.**
   Select SHAPE LIBRARY from the submenu and a new Shape Library will appear. Or, open an existing Shape Library by choosing OPEN from the FILE menu and locating the existing Shape Library document.
2. **Select IMPORT from the FILE menu**
3. **Find the PostScript file you wish to import**
   TextureScape allows you to import multiple shapes at once. Click the Add button repeatedly to add multiple files to the batch import area. Clicking the Add All button will add all the shapes in the selected folder to the batch import list. You can also remove shape files from the batch import list with the Remove and Remove All buttons.



Click the Add button to select shapes to be imported.

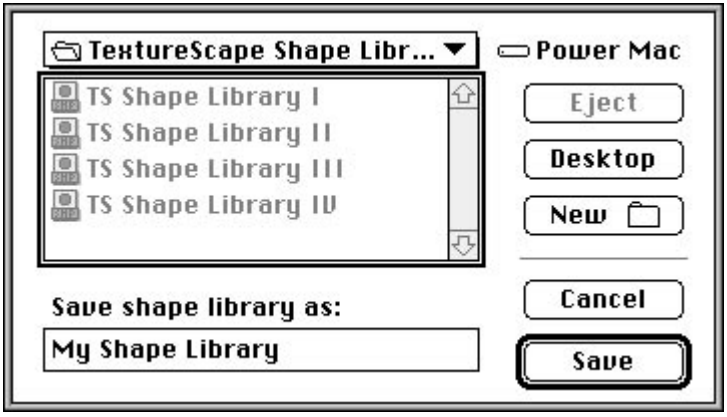
4. **Click Done**
   TextureScape will now import the file(s).
5. **To save the Shape Library to disk, select SAVE from the FILE menu.**
   Remember the Shape Library document you are saving must be active when you choose SAVE.

To Remove a Shape from a Shape Library:

1. **Select OPEN from the FILE menu and open the desired Shape Library.**
2. **Select the shape in the Shape Library list and choose CLEAR from the EDIT menu.**
3. **Select SAVE from the FILE menu to save the changes to the Library.**

SHAPE LIBRARIES

Because shape libraries are actual documents, it is very easy to create custom shape libraries that store particular collections of shapes. TextureScape allows you to import and remove shapes from shape libraries (instructions detailed above), copy and paste shapes between shape libraries and rename the shapes contained in any shape library. In addition, TextureScape allows you to draw new shapes from within the program and save them to shape libraries, as well as edit the shapes contained in current shape libraries.



Hiding/Showing Shape Libraries

Once a new Shape Library document has been created, or an existing Shape Library has been opened, you may choose to hide it from view. To do this, simply make the Shape Library document active and choose HIDE from the WINDOW menu. Although the library is now hidden, the shapes it contains are still accessible from the Shape pop-up menu in the Shape palette.

To access a Shape Library once it has been hidden, choose SHAPE LIBRARIES from the WINDOW menu and select the appropriate library from the submenu.

Loading Multiple Shape Libraries at Launch

TextureScape allows frequently-used Shape Libraries to be automatically loaded into the program when launched. All Shape Libraries placed into the “Specular Folder” are automatically loaded into the shape pop-up menu when the program starts up. (The Specular Folder is located inside your Preferences folder in the System folder on the hard drive). Shape Libraries are clearly separated from each other in the Shape pop-up.

Shape Libraries loaded at launch are automatically hidden from view. To access them for editing, choose SHAPE LIBRARIES from the WINDOW menu and select from the submenu. Remember that if you close a Shape Library instead of hiding it, it will not be accessible from the Shape pop-up menu.

Temporary Shapes

You may have noticed that a Shape Library called "Temporary Shapes" is always present in the SHAPE LIBRARIES submenu under the WINDOW menu. This library is where shapes from opened textures are stored if they cannot be found in any of the currently opened Shape Libraries. This library is different from other shape library documents in that it cannot be saved, but the shapes it contains can be edited with the drawing tools, and copied and pasted into different libraries.

To Copy Shapes Between Libraries

1. **Open the Shape Libraries you wish to copy and paste shapes between.** Since Shape Libraries are separate documents, you can have multiple libraries open at once.
2. **Select the desired shape in the Shape Library list and choose COPY from the EDIT menu.**
3. **Select the Shape Library where you want to copy the shape and choose PASTE from the EDIT menu.**
4. **Select SAVE from the FILE menu to save the Shape Library file.**

To Rename Shapes

1. **Select the shape in the Shape Library list and choose RENAME from the EDIT menu.**

A dialog box will appear prompting you to enter a new name for the shape. Click OK when you are finished.

2. **Select SAVE from the FILE menu to save the Shape Library file.**

Drawing Shapes and Saving Them In Shape Libraries

1. **Open an existing Shape Library or create a new one.**
2. **Choose NEW from the EDIT menu.**
3. **Draw a shape.**

The shape will automatically be placed into the current Shape Library. If the library already contains shapes, the shape will be added to the bottom of the shape list.

4. **Select SAVE from the FILE menu to save the Shape Library file.**

Editing Shapes in Shape Libraries

1. **Open an existing Shape Library.**
2. **Click on the desired shape in the shape list. The shape outlines will appear in the drawing area to the right.**

Once the shape is selected, it may be manipulated with TextureScape's drawing tools.

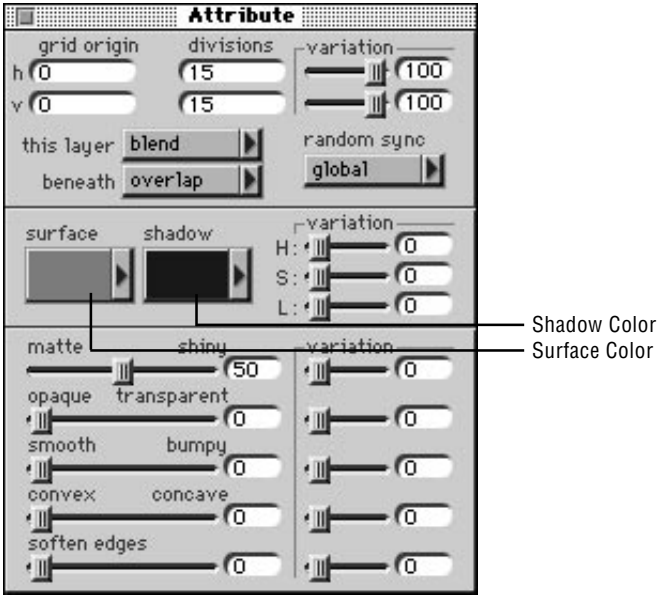
If you wish to manipulate a copy of a shape rather than the original, select the shape and choose DUPLICATE from the EDIT menu. The shape will be duplicated and placed at the bottom of the shape list.

Included with TextureScape are five separate Shape Libraries, totaling about 200 shapes. One is installed with the TextureScape application and the other four can be found on the TextureScape CD-ROM. Feel free to use these libraries as you work with TextureScape, or copy selected shapes from them into your own custom Shape Libraries.

4 Surfaces and Shapes

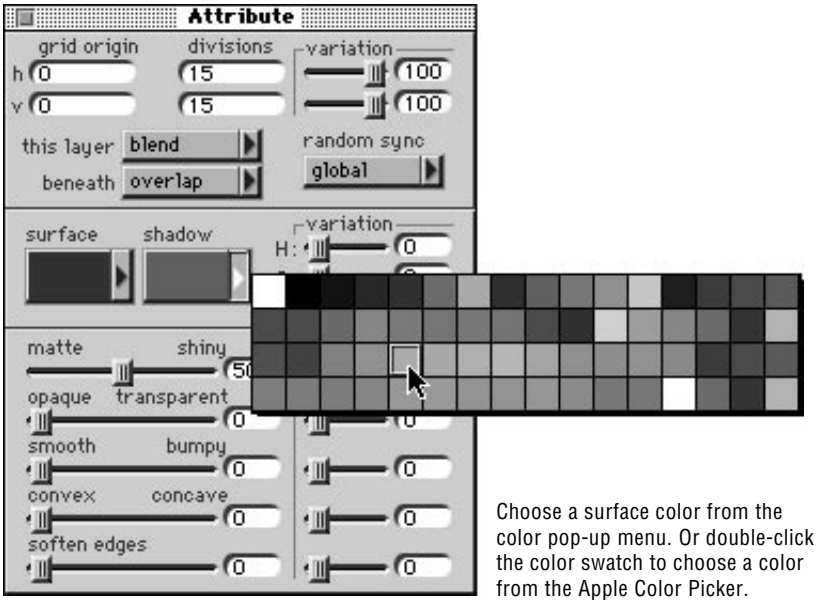
Each shape has its own surface. The surface is where its attributes (color, gloss, transparency or opacity) are evident. All surface controls are found in the Attribute palette.

To learn about building random variation into a shape's final rendered attributes via the Attribute palette's variation sliders, please see Chapter 6.



Surface Color

Surface color represents the overall color of the shape. To select a different color for a particular shape, click on the arrow next to the currently selected color and a menu will appear showing the available colors.



Choose a surface color from the color pop-up menu. Or double-click the color swatch to choose a color from the Apple Color Picker.

The colors shown in the menu do not represent the only colors available to you. You can define or modify a color at any time. If you want a color not in the current color palette, double-click on the surface color box to bring up the standard Apple Color Picker. Select any color you wish.

You can also modify the color palette numerically by going to the Color Palette dialog box. Choose COLOR PALETTE from the IMAGE menu to do this. The Color Palette dialog box is explained in detail in the reference section of this manual.

Shadow Color

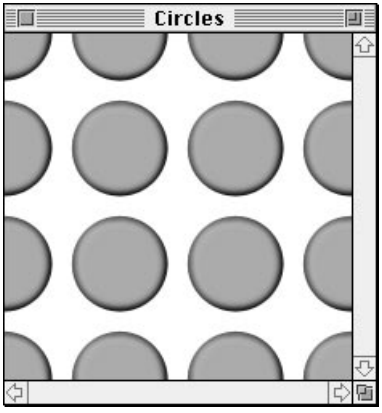
Real-world shadows make objects appear three-dimensional. TextureScape uses the shadow color to make a shape appear 3D. The traditional color for the shadow is black.

As with surface color, a different color can be selected by selecting a color from the color menu. You can select a color not available in that menu by double-clicking on the shadow color box to call up the Apple Color Picker.

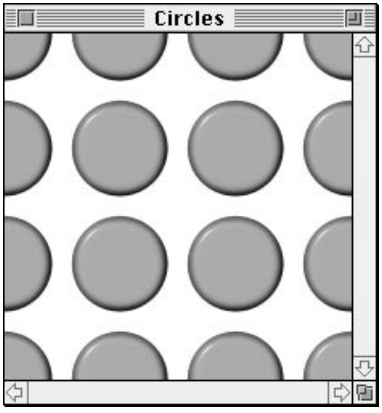
While white highlights and black shadows tend to look more "realistic" for most surfaces, you do have the option of choosing any color you wish. This can lead to surprising results that create an infinite variety of images. Keep this in mind as you experiment with TextureScape, as it can lead to some very exciting special effects.

Matte-Shiny

The Matte-Shiny slider controls the shininess of a shape's surface. Setting the slider to 0 results in a shape appearing matte (without gloss), and a value of 100 makes the shape's surface appear very shiny. Values can also be entered in the text edit box next to the slider.



Matte

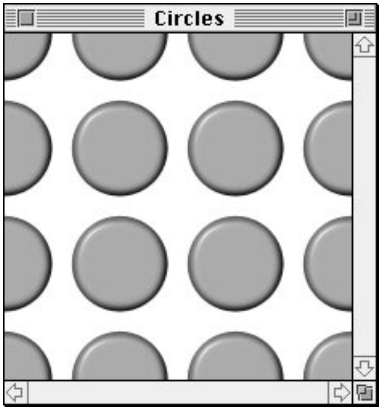


Shiny

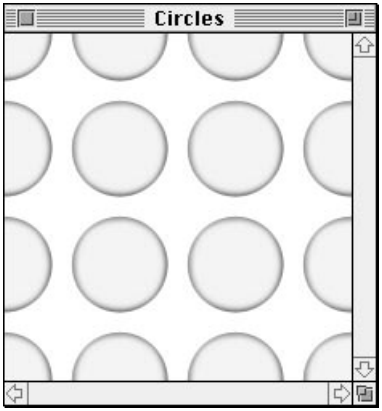
The Matte-Shiny parameters essentially control how much of the light color is seen on the surface. Just as shiny objects in the real world reflect light, a higher shine means more light color will be seen on the shape's surface.

Opaque-Transparent

This slider controls the opacity of a shape. A value of 0 makes the shape appear completely opaque and a value of 100 makes the shape completely transparent. To change the opacity of a shape, move the Opaque-Transparent slider or enter a new value in the text edit box next to the slider.



Opaque

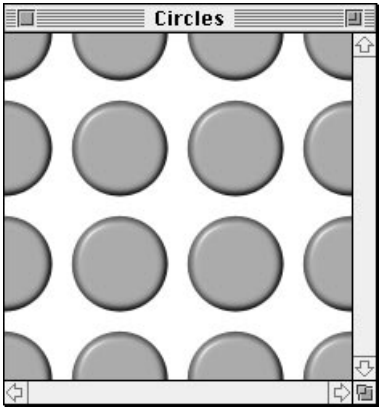


Transparent

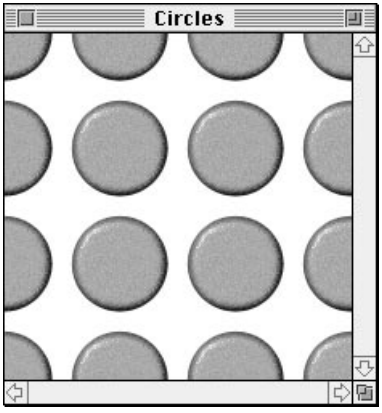
Note that the color of a transparent shape may change since it will show color from the layers beneath it. Also, although transparency may be set to 100%, shadow and light color may still appear. To make a shape completely transparent, set the height of the shape's bevel to 0.

Smooth-Bumpy

The Smooth-Bumpy slider works by increasing or decreasing the amount of "noise" present on a shape's surface as seen with the light color. It essentially changes the texture of the shape's surface to make it appear more or less smooth.



Smooth



Bumpy

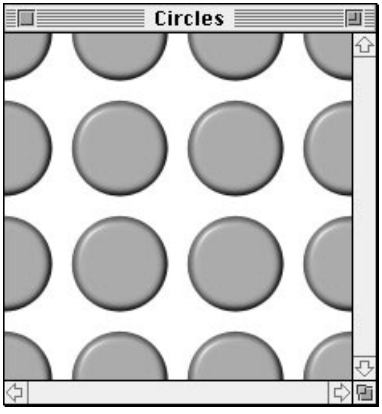
A value of 0 produces a perfectly smooth surface while a value of 100 results in maximum "bumpiness." To change the smoothness or bumpiness of a shape, move the Smooth-Bumpy slider or enter a new value in the text edit box next to the slider.

Convex-Concave

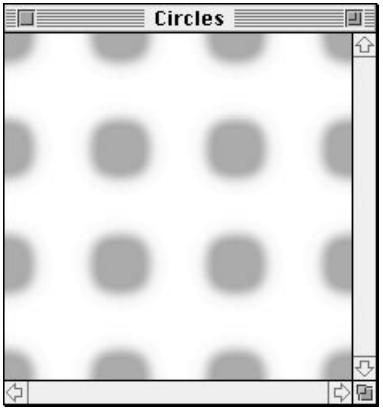
The Attribute palette also contains controls for the bevel of a shape. (For more information about bevels, please refer to Chapter 3.)

Soften Edges

Soften Edges controls how a shape blends with itself and all the layers below it. A value of 0 indicates no softening, producing crisp edges, while a value of 100 provides maximum softening. To change the Soften value, either move the Soften Edges slider or enter a new value in the text edit box next to the slider.



0% Soften Edges



100% Soften Edges

EXPERIMENTING WITH THESE CONTROLS

You can create quite a large variety of surfaces with just these basic controls. Take some time and make sure you are comfortable with these controls before continuing on with the tutorial.

5 Creating a More Complex Texture

TextureScape gives you the control to create complex textures with uniquely malleable parameters. One way to do this is to manipulate TextureScape's underlying grid in the Image window. Another is to manipulate the way layers interact with each other in color and shape, also known as "compositing" or "combining."

A third way to create more complex textures is to build random variation into the final rendered result. For information on defining random variation, please see Chapter 6.

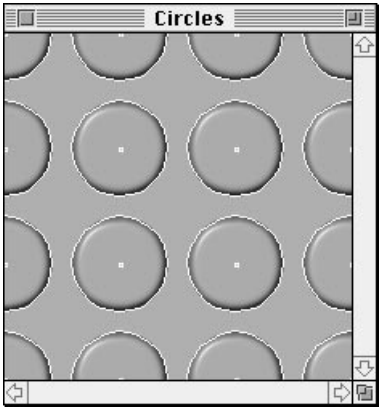
THE GRID

To get a large variety of textures out of TextureScape, it is important to understand the Grid. Most Macintosh drawing programs have a grid feature that allows you to easily align different objects. Unlike most Macintosh drawing programs, however, TextureScape's grid is always active.

TextureScape uses its grid to align shapes and to determine how often a shape is repeated. The grid is variable, meaning that you can make it compact or loose, depending on your needs. Each layer has a unique grid, allowing you to create a large assortment of images by combining layers. A very tight grid will create overlapping shapes, resulting in effects that cannot be achieved in any other way.

THE GRID AND RULERS

The grid parameters, which define the placement of shapes upon an Image document, are controlled in the Attribute palette. To view the current settings of the grid in the Image window, choose SHOW OUTLINES from the EDIT menu. You will see the outlines of the currently selected shape displayed according to the Divisions settings in the Attribute palette.

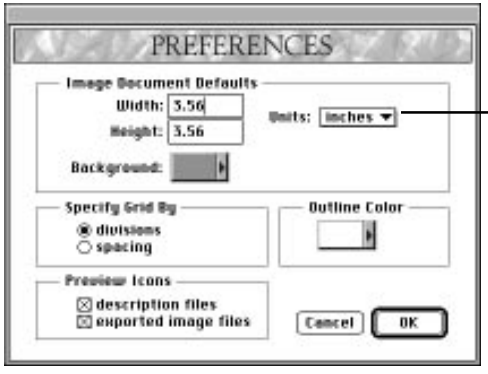


View the current grid settings by using the SHOW OUTLINES command.

In addition to the grid, it is also possible to show rulers. To show TextureScape's rulers, select SHOW RULERS from the EDIT menu. If you wish to hide the rulers, simply select HIDE RULERS from the EDIT menu. By default, the units for the rulers and all other places where measurements are used are inches. This can be changed in the Preferences dialog.

To change TextureScape's units setting:

1. **Select PREFERENCES... from the FILE menu.**

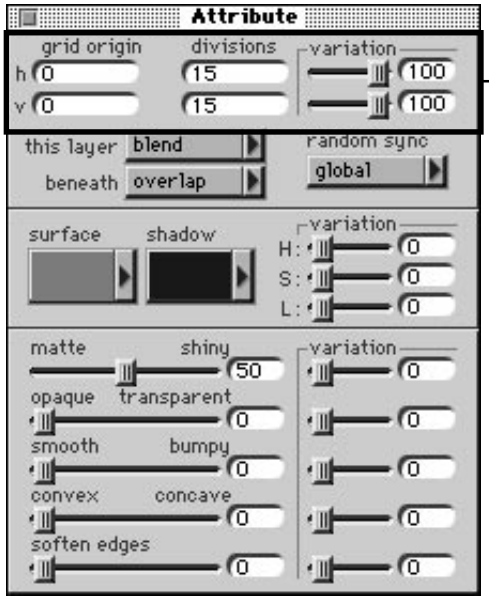


Use this pop-up menu to change the default units. When you show the rulers in the Image window, the current unit system will be used in the rulers.

2. **Select the desired units of measurement from the Default Units pop-up menu.**
3. **Click on the OK button. Any part of TextureScape that uses units of measurement will now reflect the change.**

CHANGING THE GRID PARAMETERS

All the grid parameters are found in the Attribute palette. These parameters include Grid Origin, Divisions and Variation.



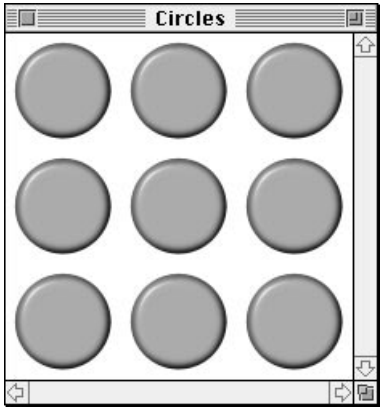
Divisions

The Divisions parameter controls the number of sections the image will be divided into. For example, with the Divisions set to X=4 and Y=4, the image will be divided into 16 equally-sized boxes with a shape at each vertex. If you raised the number of Divisions to X=8 and Y=8, you would see twice the number of intersections in the same space.

The higher the number of Divisions, the tighter the Grid will be. The tighter the grid, the more repeats a shape will have.

Note that you do not have to use the same values for X and Y. You will create a much wider selection of textures by using different values for the X and Y Divisions.

Offsetting the Grid



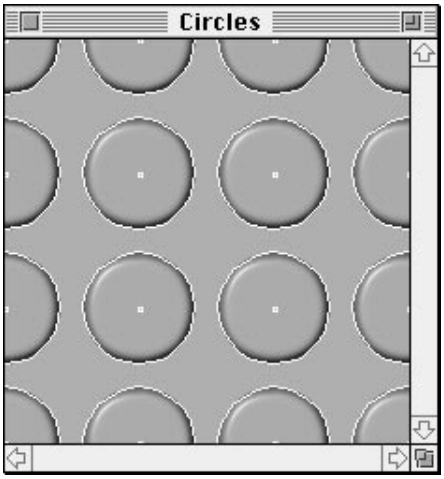
By changing the grid offset, the entire pattern shifts, but remains tileable.

The grid normally starts at 0,0 (the upper left-hand corner of the Image window). However, you can easily offset the grid, or change the location of its origin, thereby moving the shapes that are drawn according to it. There are two ways to offset the grid and move shapes around the Image window.

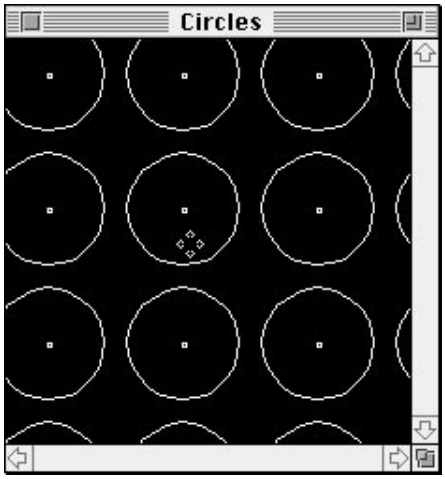
Show Outlines

The most intuitive way to move shapes around the Image window is to select Show Outlines from the IMAGE menu. When Show Outlines is activated, outlines for the shapes in the current layer are shown in white. The shape outlines, and thus the grid they are placed on, can be moved interactively simply by clicking anywhere in the Image window and dragging the mouse.

The Grid Origin values in the Attribute palette update simultaneously as you drag the outlines. However, the shapes in the Image window will only update to the new placement of the outlines after clicking APPLY.



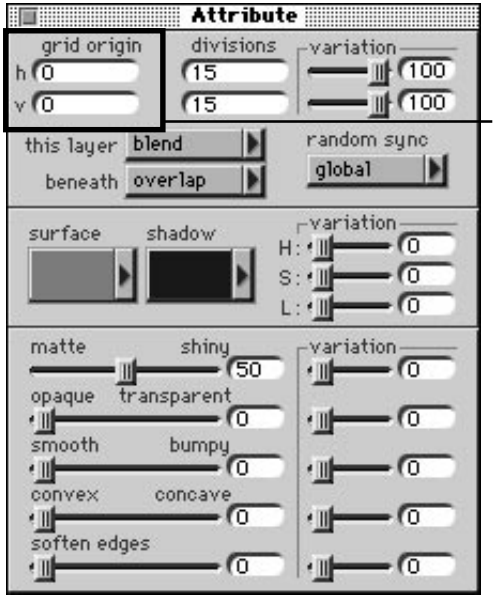
Show Outlines activated



Once Show Outlines is activated, shapes may be moved in unison to another location simply by clicking and dragging.

Grid Origin

The second and most precise way to offset the grid is to enter numerical values into the text edit boxes for Grid Origin H and V, found in the Attribute palette. Again, the shapes will update after clicking APPLY.



The grid may also be offset by entering numerical values into the Origin fields in the Attribute palette.

Note: because the grid is repeating, Origin values equal to the space between Divisions will show no difference when rendered. For example, if your image is 4" by 4" and your Divisions are X=4 and Y=4, then there will be exactly 1" between each shape (as measured from the center of each shape).

If your Origin values are X=0.5" and Y=0.5", you will see the offset. If, however, your values set to X=1" and Y=1", you will be offsetting the grid just one grid unit. As a result, you will see no difference between offsets of X=0, Y=0 and X=1", Y=1".

Variation H and V

Having shapes fall logically on a fixed grid results in symmetrical, repetitive patterns. Variation H and V control the amount of "slide" each shape can have from its placement on the grid. The higher the values, the more shapes will vary from the established grid. For more information about building random variation into a shape's final rendered placement on the grid, please see Chapter 6.

GRID DIVISIONS VS. GRID SPACING

TextureScape allows you to define the grid in two ways: Divisions and Spacing. With Divisions, the grid is defined by the number of sections the image is divided into. TextureScape also allows you to define the grid in terms of the size of each section. For example, rather than saying you want 4 Divisions, you could say you want each section to be 1" by 1".

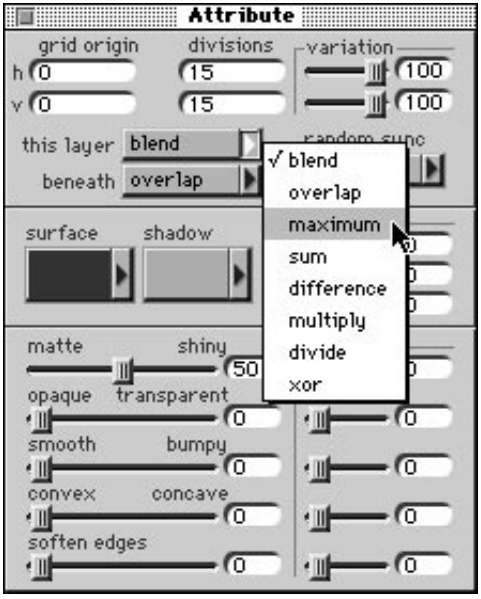
To set the Grid definition to either Divisions or Spacings:

1. **Select PREFERENCES... from the FILE menu.**
2. **Select either Divisions or Spacing next to "Specify grid using:"**
3. **Select OK to lock in your changes.**
   Note that the grid or pattern of the Attribute palette will change to reflect your selection.

The choice of whether to work with Divisions or Spacings is one of personal preference. You may find that, in some situations, working with Divisions is easier. Or you may find that Spacing intuitively makes more sense to you. Fortunately, TextureScape makes it easy to switch between them without resulting in any changes to the image. Be careful, however, to remember which mode you are working in, or you may get results you do not expect.

COMBINE MODES

As new shapes are applied to an image by increasing the grid divisions, they will sometimes partially or completely overlap shapes in their own layer, or shapes in other layers. TextureScape allows you to choose how these shapes interact with each other with the Combine modes located on the Attribute palette.



Combine modes control the interaction between overlapping shapes in a single layer and the layers beneath it.

When you lay out shapes and layers in the Image window, there are actually two interactions that take place: 1) the interaction between shapes in the currently selected layer, and 2) the interaction between that layer (the result of the first calculation) and all layers beneath it. You can select Combine modes for each interaction independently using “This Layer” and “Beneath,” allowing for a wide range of possible effects.

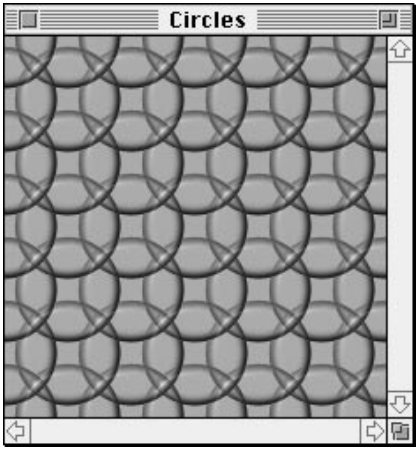
Combine modes affect the lightness, color and transparency of the resulting image in different ways. The results are entirely dependent on the two source images combined and the particular Combine mode, or calculation, performed.

If there is no interaction (i.e. overlap) between shapes, then the Combine mode will have no effect, and the shape will simply appear on top of the background color. In other words, the Combine modes control the interaction between elements in the layers, and the resulting combination of all layers is then composited onto the background.

Something else to keep in mind: The result of all Combine calculations are affected by the Transparency and Soften Edges controls to some extent. (The Soften Edges control effectively makes the edges transparent.)

Blend

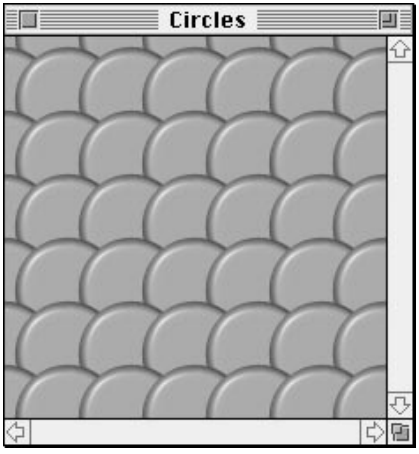
The overall color of the overlapping shapes are retained, but variations in lightness and hue from both elements show through.



Blend causes overlapping shapes to appear somewhat transparent.

Overlap

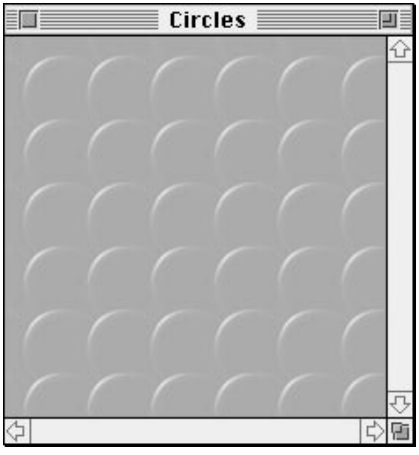
The overlapping shapes being applied are simply composited, completely covering what is underneath them. Note that the coverage is affected by the Transparency parameter.



Overlap causes shapes to appear opaque.

Maximum

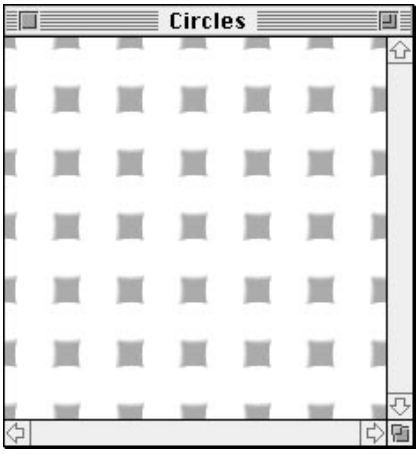
The rendered result is the maximum value for each RGB component of the overlapping elements. Note that this produces a color shift in some cases.



Maximum essentially stacks maximized RGB values into a final result.

Sum

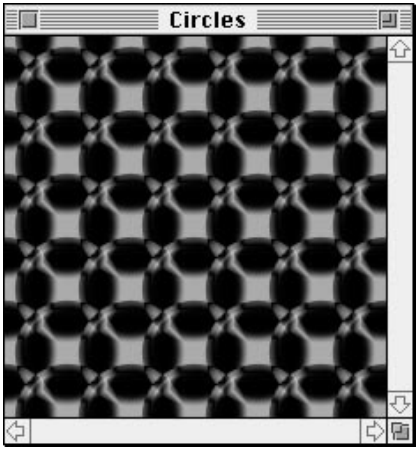
The rendered result is the sum of each RGB component of overlapping elements, up to the maximum allowable value. This can produce a color shift, and eventually a saturated “white-out” effect.



Sum stacks accumulated RGB values, up to the maximum allowable.

Difference

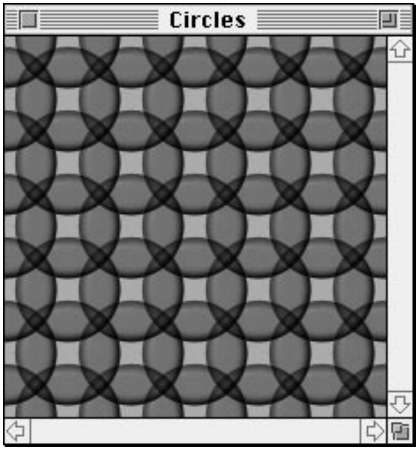
The result, in scientific terms, is the absolute value of the difference of each RGB component in the overlapping elements. But all you need to remember is that it produces a pronounced color shift, and creates dramatic results.



Difference consistently creates dramatic results.

Multiply

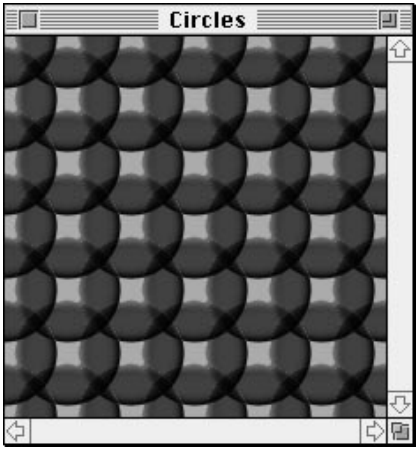
The result is the product of each RGB component in the overlapping elements divided by 256. This tends to produce a darkening of the overlapped areas.



Multiply essentially multiplies RGB values in the interacting elements.

Divide

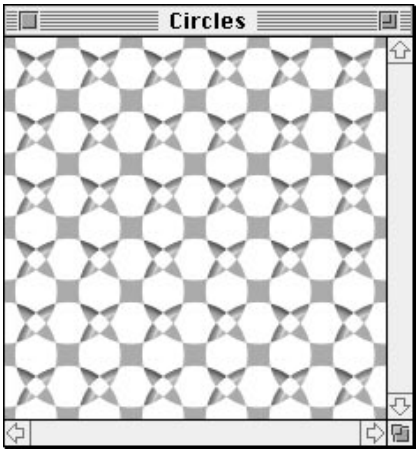
The lightness value of one element is divided by the lightness value of the overlapping element. The resulting value is then evident in the overlapping areas.



Divide divides the lightness values of overlapping elements with each other.

Xor

The effect here is to erase areas of two elements that overlap, while allowing other areas to show through. As more shapes are applied, the image tends to degenerate into smaller and smaller fragments.



Xor erases color information from overlapping areas and allows other areas to show.

6 Random Variations

A unique way to create more complex textures in TextureScape is to build random variation into the final rendered result. The variation sliders cause chosen parameters to be rendered in a randomized way. The slider values represent randomizing based on a percentage of what values are already selected.

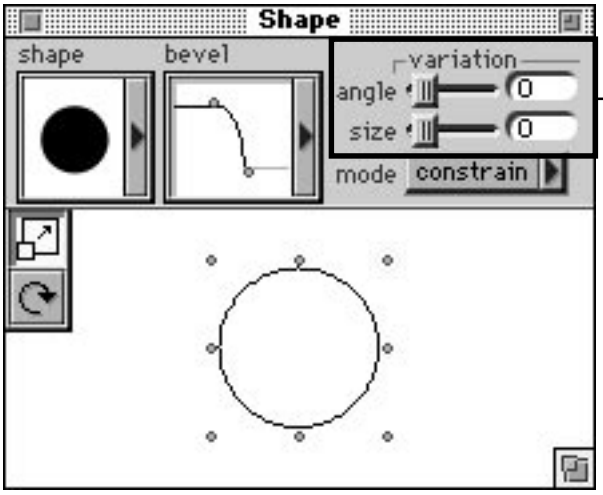
We provide the following brief explanations, but the important thing is to experiment! There are infinite combinations of random variations for each image, and it's guaranteed you'll produce interesting results.

TextureScape provides random variation controls for:

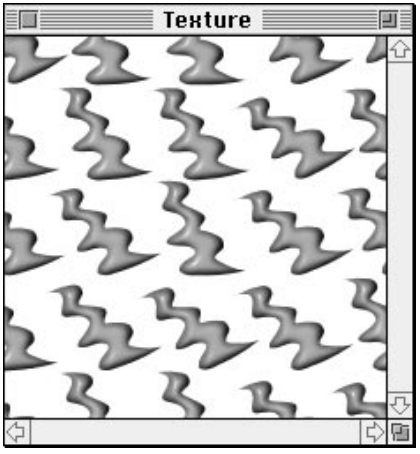
- *Shape size and rotation*
- *Surface attributes*
- *Shape placement on the grid*

VARIATION: SHAPE SIZE AND ROTATION

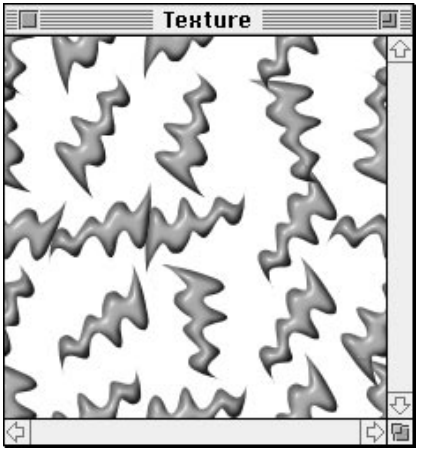
The Shape palette has the controls for varying shape size and rotation.



The **Angle** slider controls the variation of shape rotation. A value of 100% signifies that the shapes will vary through the full range of rotation angles, producing more pronounced variation. Lesser values produce less dramatic variation ranges.

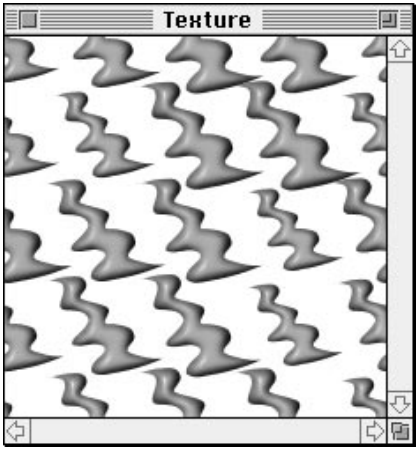


10% Angle variation

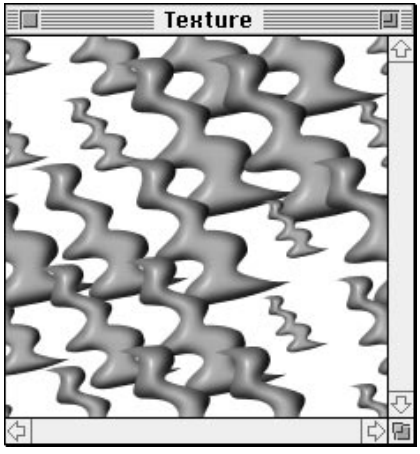


100% Angle variation

The **Size** slider controls random variation of shape size. A value of 100% signifies that the shapes will vary through the full range of size, producing more pronounced variation. Lesser values produce less dramatic variation ranges.

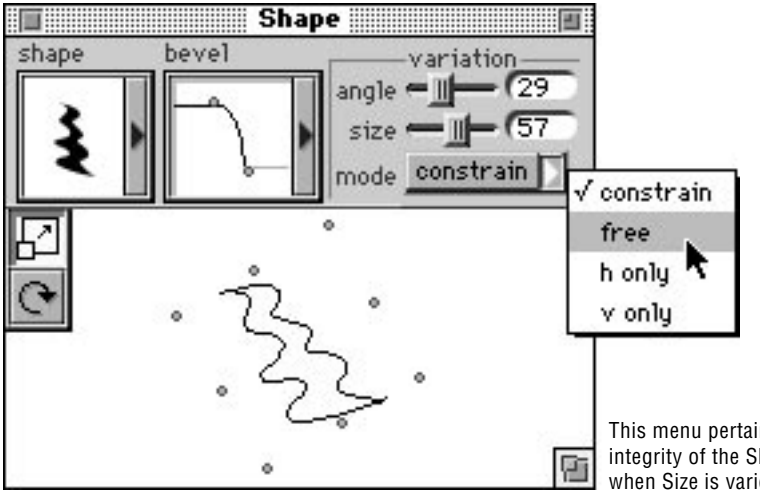


20% Size variation



80% Size variation

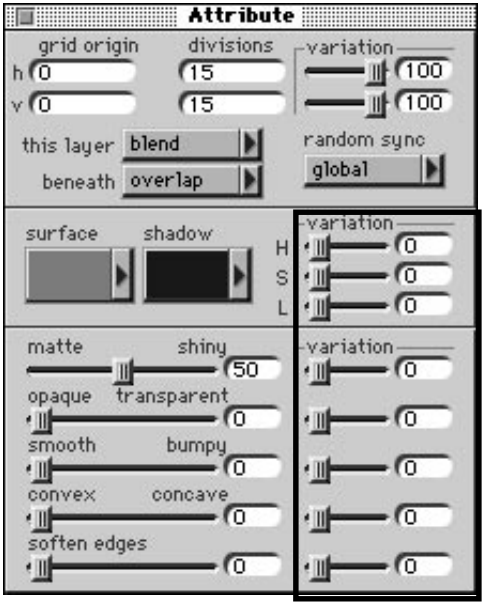
The **pop-up menu** below the two sliders pertains to the Size slider. “Constrain” maintains the integrity of the shape when varying its size. “Free” allows the shape to be squashed and stretched both horizontally and vertically. “H only” and “V only” limit the squashing and stretching to either dimension.



This menu pertains to the integrity of the Shape outline when Size is varied.

VARIATION: SURFACE ATTRIBUTES

The Attribute palette has the controls for random variation of surface attributes.



Surface Color

Hue

This randomizes between variants of the surface color. A value of 100% means the surface color will vary through the full range of hues, producing more pronounced variation. Lesser values produce a less dramatic range of hue variation.

Saturation

This varies the density of surface color. A value of 100% means the surface color will vary through the full range of possible densities, producing more pronounced variation. Lesser values produce a less dramatic range of density variation.

Lightness

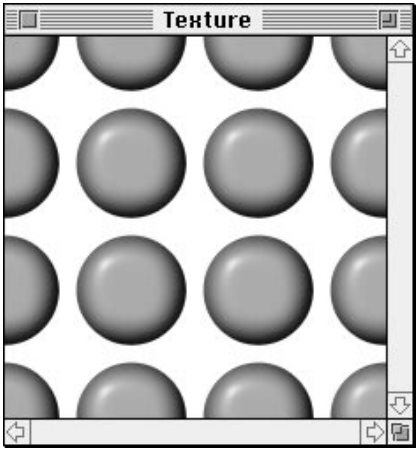
This varies the color contrast between light and dark of the shape's surface. A value of 100% means the surface color will vary through the full range of light and dark, producing more pronounced variation. Lesser values produce a less dramatic range of light and dark variation.

For the following Attributes, the Variation sliders reflect percentages of variation from the full range that their corresponding attribute sliders can go. For example, a

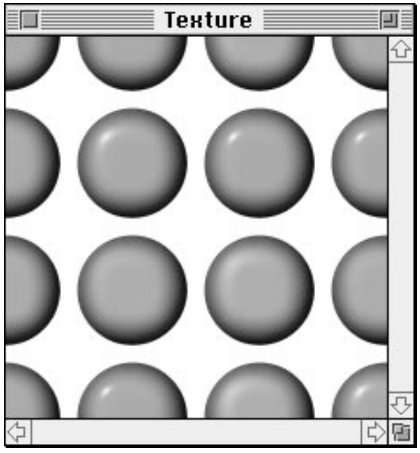
Matte-Shiny value of 50 with a Variation of 50 percent will produce random variations of matte and shiny ranging from 25 to 75 on the Matte-Shiny slider.

Matte-Shiny

Variation will result in both matte and shiny surfaces in a range relating to the value on the Matte-Shiny slider.



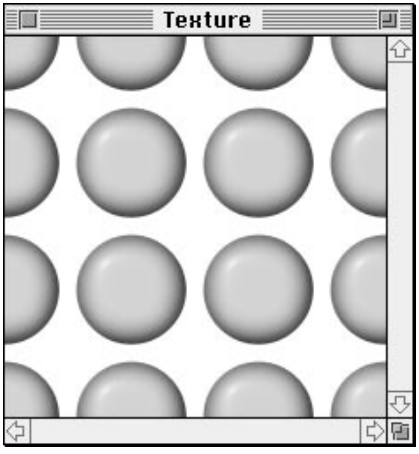
No variation



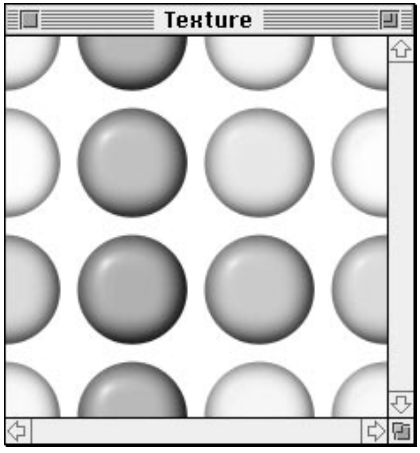
100% variation

Opaque-Transparent

Variation will result in both opaque and transparent surfaces in a range according to the value on the Opaque-Transparent slider.



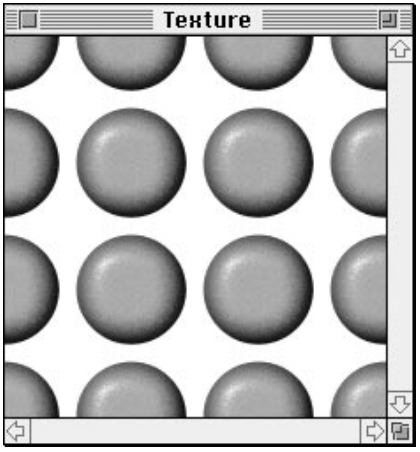
No variation



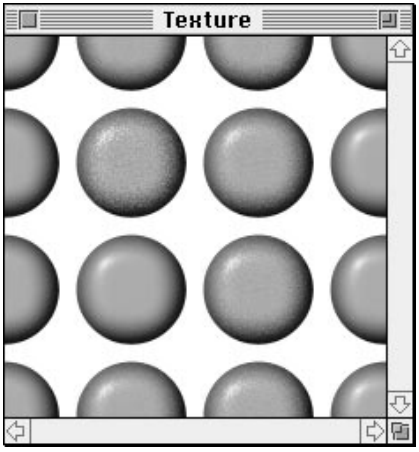
100% variation

Smooth-Bumpy

Variation will result in both smooth and bumpy surfaces in a range according to the value on the Smooth-Bumpy slider.



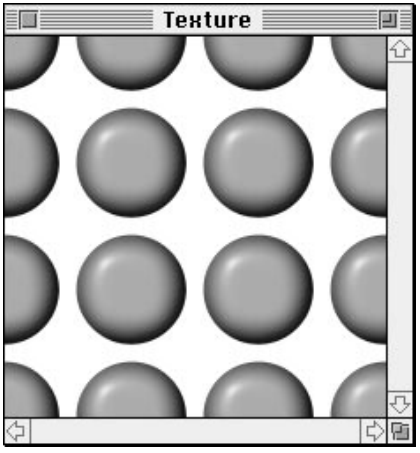
No variation



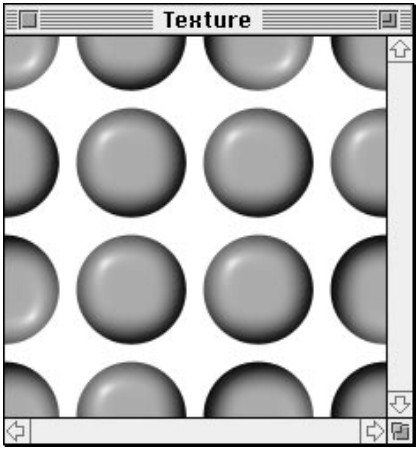
100% variation

Convex-Concave

Variation will result in both convex and concave surfaces in a range relating to the value on the Convex-Concave slider.



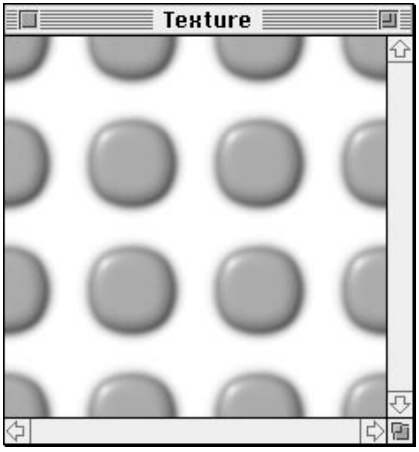
No variation



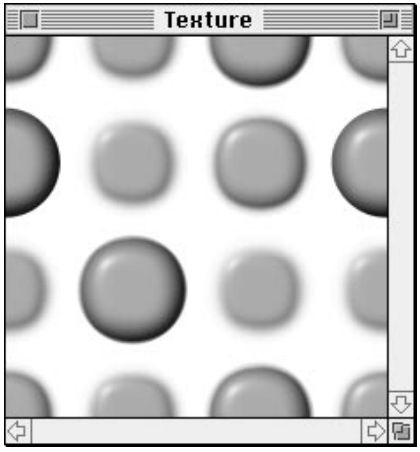
100% variation

Soften Edges

Variation will result in shapes with both crisp and soft edges in a range relating to the value on the Soften Edges slider.



No variation

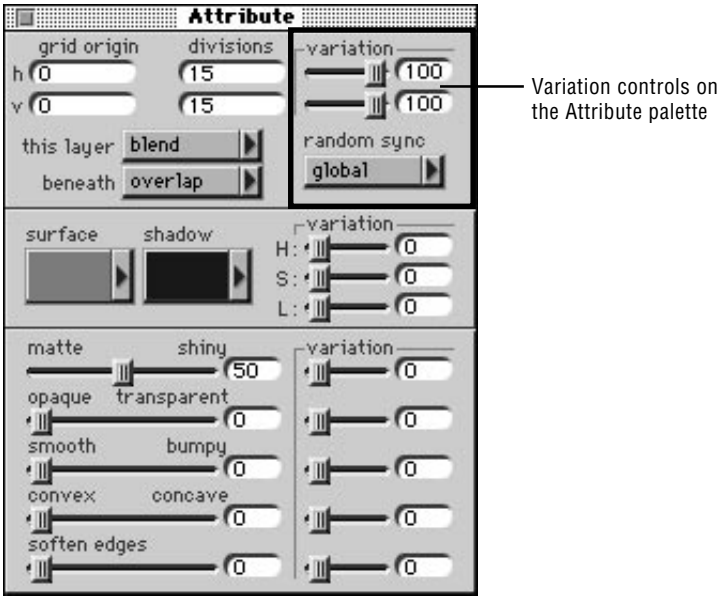


100% variation

VARIATION: SHAPE PLACEMENT ON GRID

H and V Variation

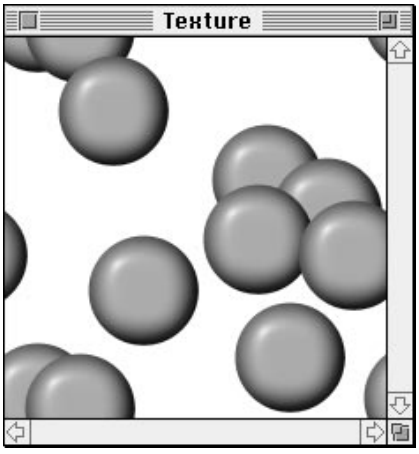
The Attribute palette has the controls for random variation of shape placement on the Image window grid.



Having shapes fall logically on a fixed grid results in symmetrical, repetitive patterns. Variation H and V on the Pattern palette control the amount of “slide” each shape can have from its placement on the grid. The higher the values, the more shapes will vary from the established grid.

The most any shape can move is half the distance between any two grid points. Variation H and V values represent the percentage of that distance, with 100% representing full placement variation, i.e. shapes slide half the distance between any two grid points. Lesser values represent smaller percentages of this movement.

Varying H and V values creates patterns with a more organic appearance, since the image does not have noticeable symmetry.

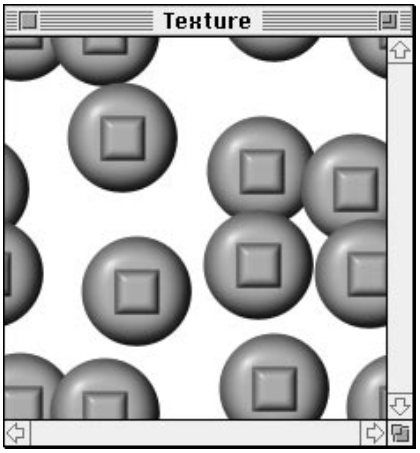


100% H and V variation.

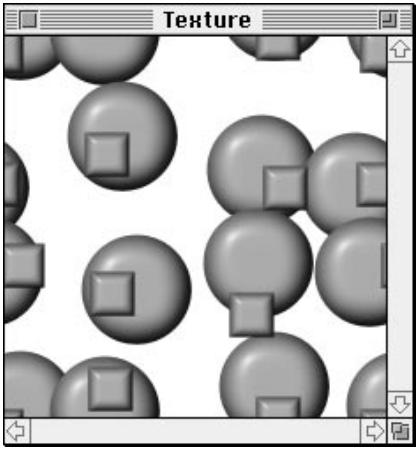
Random Sync

The selection of “Global” from the Random Sync pop-up in the Attribute palette specifies that the H and V variation values are exactly the same from one layer to the next. In other words, a layer with divisions of 3 x 3 and variation of H 50 x V 50 will line up exactly with another layer with the same settings when global is selected for both of them. This is useful when creating complex shapes which contain multiple layers stacked on top of each other, yet it is desired to have the shapes as a whole scattered randomly about the document.

The “Per Layer” option facilitates the creation of more organic textures because it specifies that the H and V variation values are unique to the particular layer selected. In other words, a layer with divisions of 3 x 3 and variation H 50 x V 50 will not line up exactly with another layer with the same settings when per layer is selected for both of them.



Shapes line up perfectly when identical variation values are chosen and GLOBAL is selected.

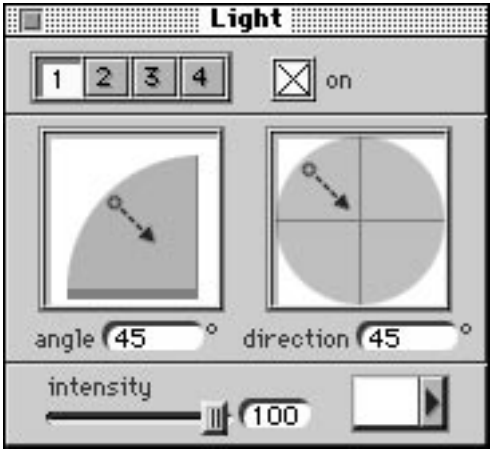


Shapes are offset from each other when identical variation values are chosen and PER LAYER is selected.

TextureScape allows you to reset the settings in all of the palettes by choosing RESET ALL from the IMAGE menu. This resets all the settings to the defaults.

7 Lighting Controls

Lighting controls are essential for creating rich or dramatic textures. TextureScape gives you the ability to control up to 4 light sources per layer. You can control both the direction and the angle of each light source, as well as the color and intensity. All of the controls for lights are found on the Light palette. To open the Light palette, select LIGHT from the WINDOW menu.

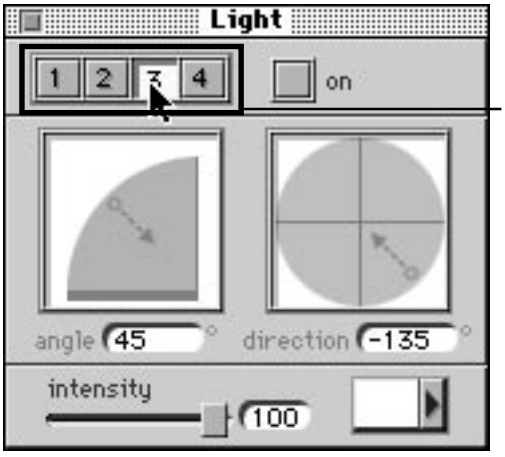


The Light Palette

Remember, as with every other palette in TextureScape, you must click APPLY to see your changes.

LIGHT SELECTION

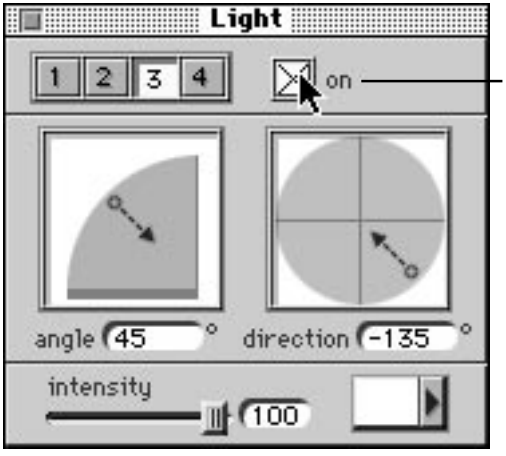
Four lights are available per layer. To select a light, click on the corresponding number on the Light palette.



To select a light, simply click one of the four light buttons.

ADDING MORE LIGHTS

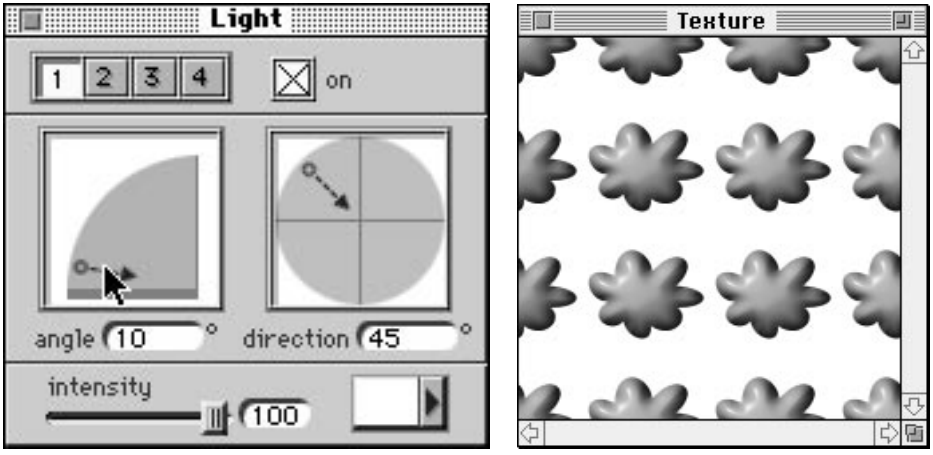
The "On" checkbox specifies whether or not a light is on. A light is on only when this checkbox is checked. To add more lights, click on any of the numbered light buttons and click the "On" checkbox. Lights can be turned on and off in any combination in each layer.



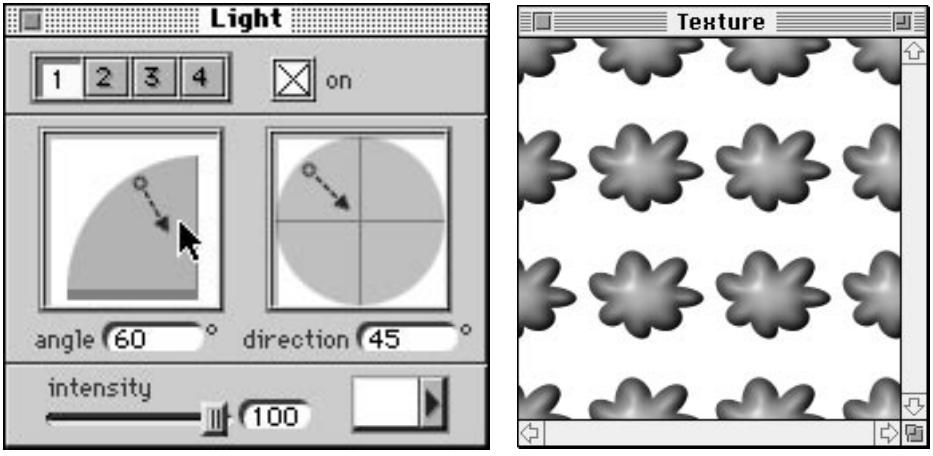
To turn on a light, click the "On" checkbox.

ANGLE

This parameter, sometimes called the elevation or altitude angle, determines the angle of the light relative to the "horizon." The window for adjusting the light angle figures the shape as flat on the horizon. Lights with higher angles will throw more light on top of the shape. The maximum angle for any light is 60°.



Lights with low angle values hit the shape more directly from the side. Notice how the highlights are spread along the edge of the shapes.

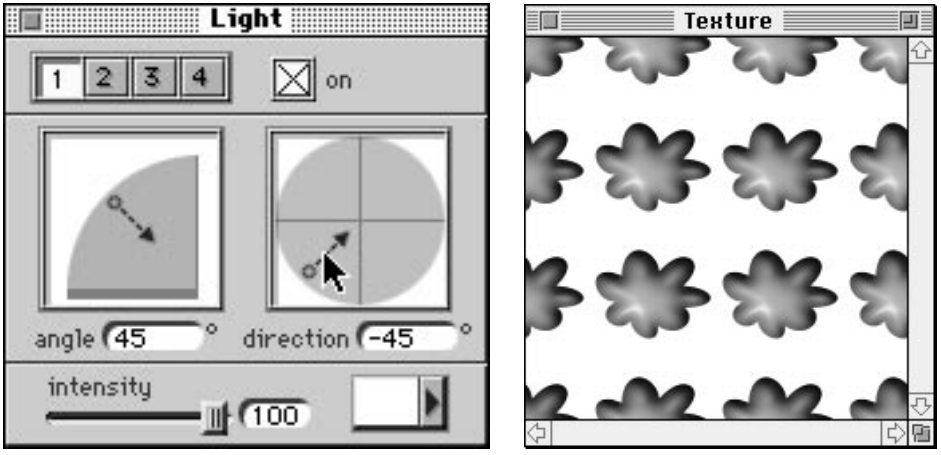


Lights with high angle values hit the shape more directly from the top. Notice how the highlights are spread along the top of the shapes.

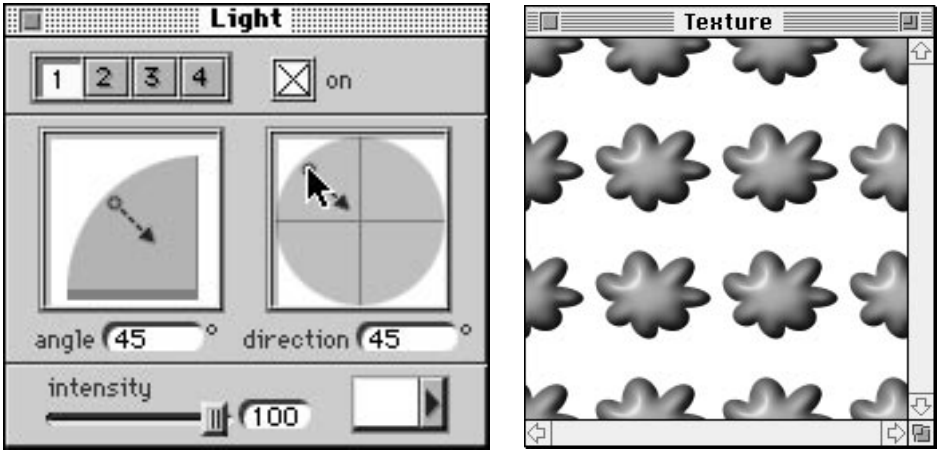
To change the angle of a light, click and drag on the control point or arrow on the angle graph. You can also enter a specific value into the text-edit field.

DIRECTION

This parameter, technically referred to as the azimuth angle, determines which direction the light points from, relative to the center of the shape. Think of this control as a compass used on a flat map: light direction can be from the north, south, east, west or any position in between.



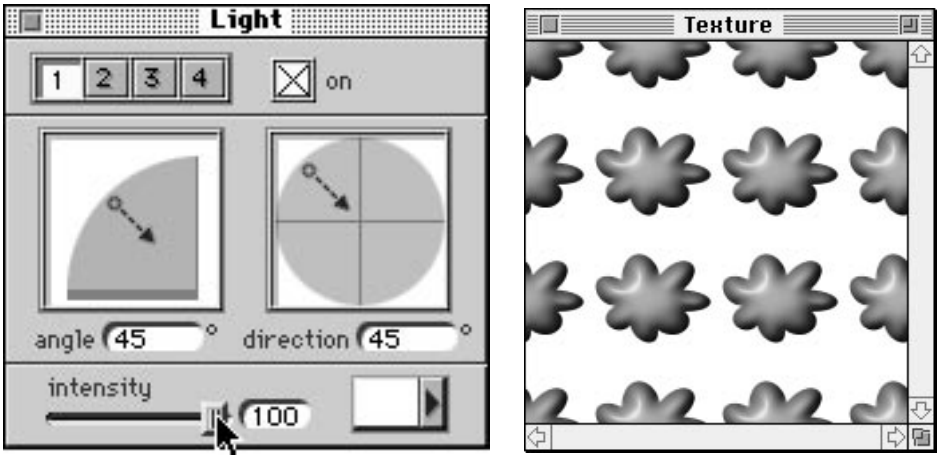
You can make a light source emanate from any direction. This example shows the light coming from the bottom-left direction; this can also be thought of as southwest.



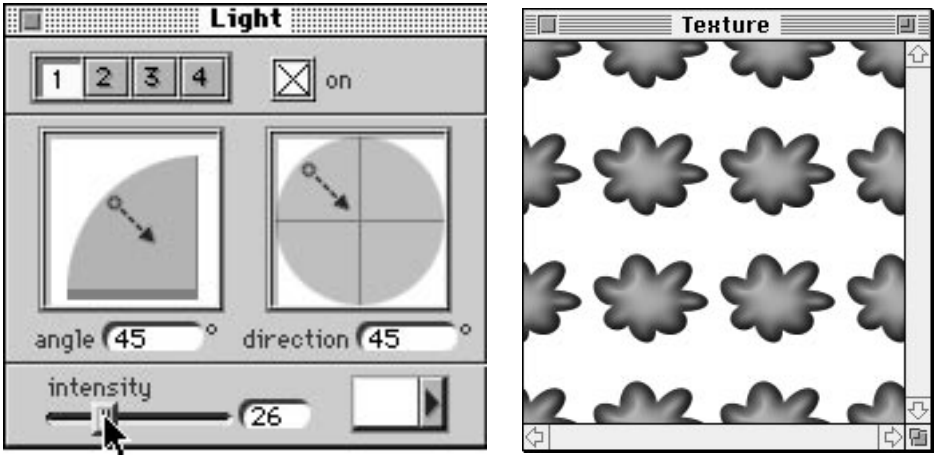
To change the direction of a light, click and drag on the control point or the arrow on the Direction graph (the same way you would change the angle). You can also enter a specific value into the text-edit field.

INTENSITY

Intensity controls the brightness of a light. A value of 100 is the maximum intensity and a value of 0 is the same as having the light turned off. To change the intensity of a light, either move the Intensity slider to the desired point or enter the value directly into the text box.



Lights with higher intensity values produce brighter highlights.



Lights with lower intensity values produce darker highlights.

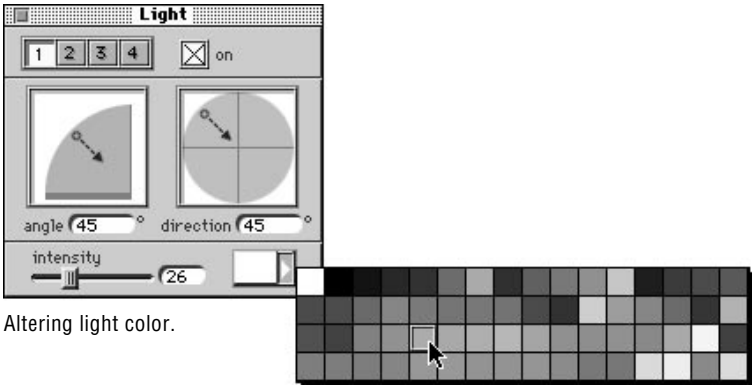
LIGHT COLOR

Manipulating the color of a light source can dramatically affect the surface dynamics of your textures. The traditional light color is white, but varying the color can produce interesting effects. Each of the four lights can have its own color.

For example, a purplish light from one direction and a yellow light from the opposite direction will produce an iridescent effect on a shape's surface.

Metallic surfaces tend to have reflections that are a hue of the surface color. To create a metallic surface, choose a lighter variant of the surface color for the light color.

Select a light color by clicking on the arrow next to the color swatch at the bottom of the Light palette. Scan through the pop-up color palette with your mouse pointer and choose a color, or create a custom color by double-clicking on the arrow and using the Apple Color Picker.

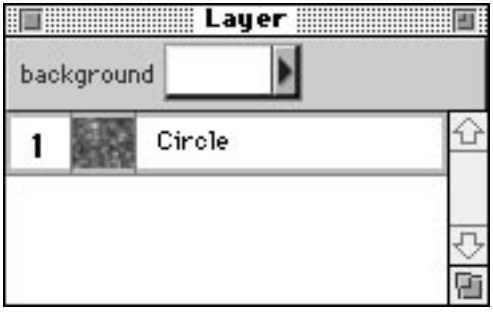


Altering light color.

8 Layered Textures

Just the controls mentioned so far would be enough to make TextureScape a fantastic texture-generation program. But it is TextureScape's ability to combine an unlimited number of layers for each texture that dramatically increases the wide variety of images you can produce.

As mentioned in the Introduction, a document in TextureScape is composed of any number of layers which combine to create the final image. TextureScape allows you to add new layers, change the order of layers or define how layers interact with each other. All of the layer controls are accessed through the Layer palette. To bring up the Layer palette, select "Layer" from the Windows menu.



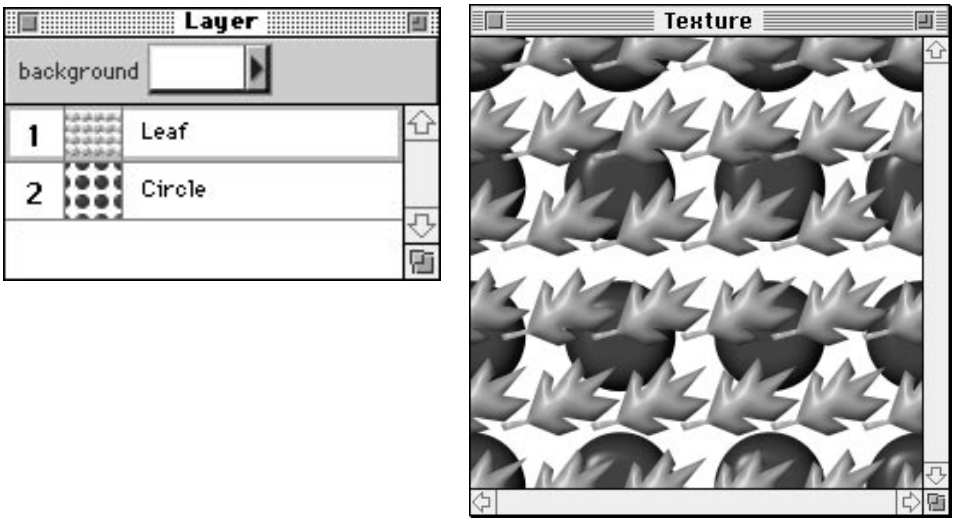
The Layer Palette

ADDING A NEW LAYER

TextureScape automatically creates one layer when you select NEW...IMAGE from the FILE menu. To add another layer, select NEW LAYER from the IMAGE menu.

THE LAYER PALETTE

Layers are represented in the Layer palette in descending order of how they are stacked in the Image window, with the top-most layer listed first. Layer 1 is in front of Layer 2 in the Image window, and so on. Each layer has its own name and preview. The preview updates as the layer is modified; the name can be edited at any time.

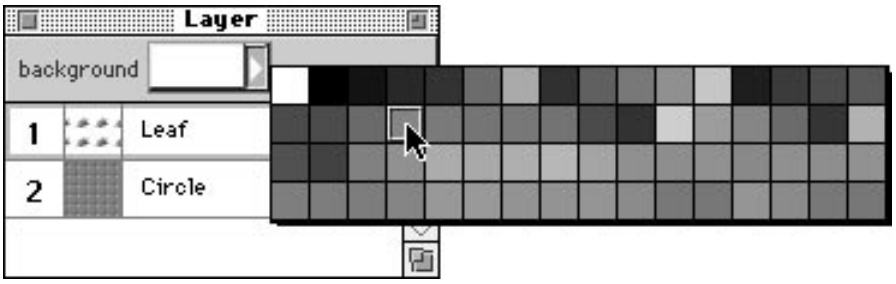


Layer 1 (Leaf) appears to on top of Layer 2 (Circle).

The Layer palette will scroll if you create too many layers to be viewed at its current size. You can also resize the palette using the Grow box in the lower-right hand corner of the palette.

Changing the Background Color

You can change the background color of the Image window at any time without re-rendering, regardless of the number of layers a texture may contain. To choose a color, click and hold the arrow alongside the swatch in the Layer palette. Double-click the color selection swatch to choose a custom color from the Apple Color Picker.

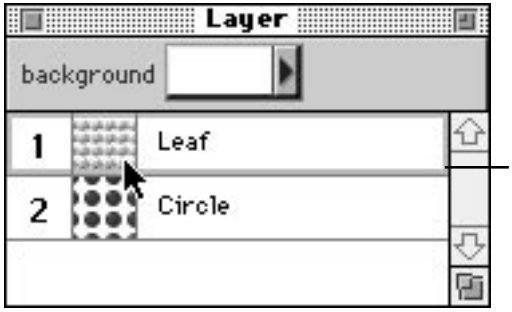


Change the background color by clicking on the color swatch on the Layer Palette and choosing a color. You can also double-click on the swatch to choose a color from the Apple Color Picker.

Selecting Layers to work on

There are two ways to select a layer:

1. **Click on the desired layer in the Layer palette.**
   It will be highlighted with a square, indicating it is selected.



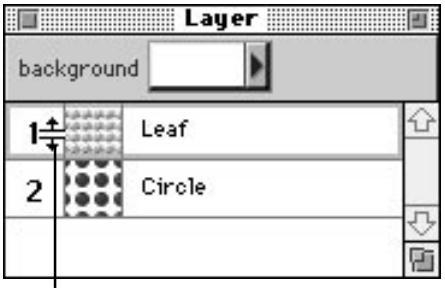
The layer with the colored border is the currently selected layer. All values and attributes from the other palettes are in reference to this selected layer.

2. **Use the SELECT LAYER hierarchical menu in the IMAGE menu.**

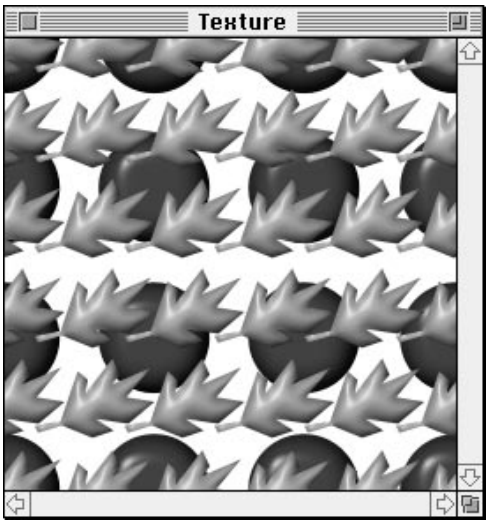
Reordering Layers

Any layer can be moved to a different position in the layer list. To move a layer's position:

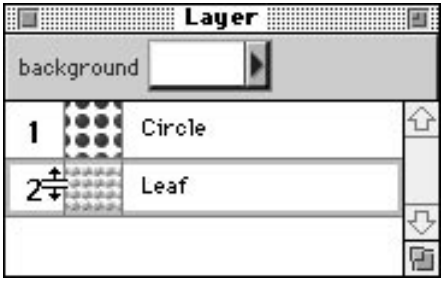
1. **Move your mouse pointer to the number column in the Layer palette.**
   The mouse pointer will change to an up/down arrow.

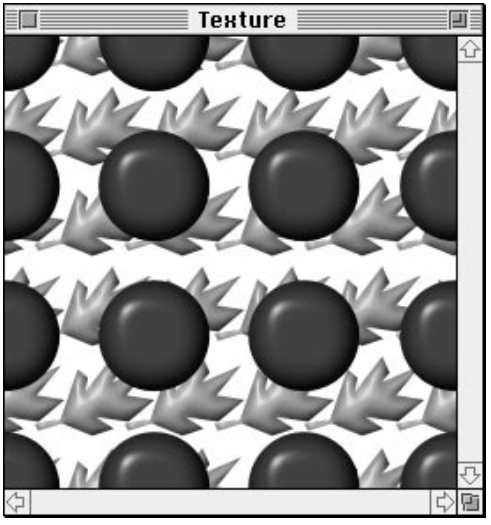


To change the layering order, click and hold the cursor over the layer number box. Then drag the mouse up or down to reshuffle the layers. Release the mouse when the layer is in the position you want.



2. **Click and drag the selected layer to the desired location, placing it over the layer with that current position.**
   The layers will then re-shuffle themselves to show the change.

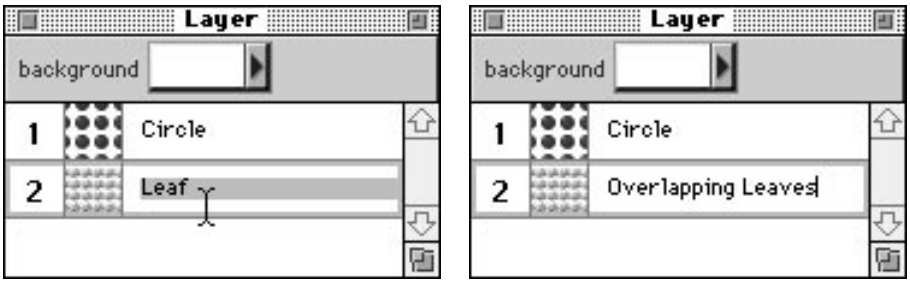




Changing a Layer Name

Layer names default to the names of their chosen shapes. To change a layer name:

1. **Click on the name in the Layer palette.**
   The mouse pointer will change to a text insertion pointer and the text will be selected.
2. **Enter the new name.**



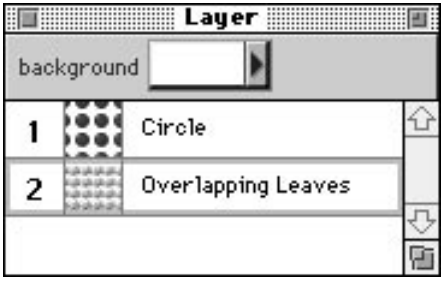
After highlighting the layer name, simply type in a new name.

SHOWING ONLY THE CURRENT LAYER

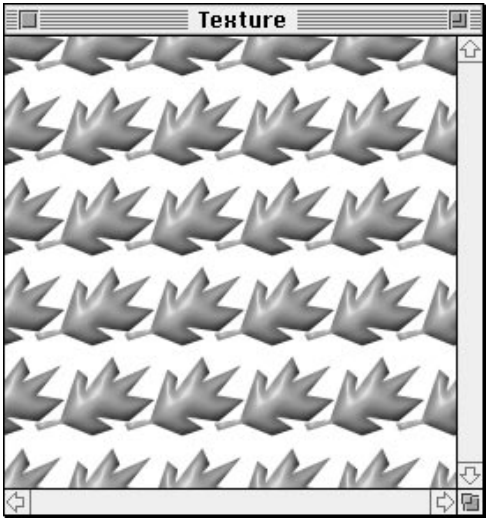
As your textures increase in layers and complexity, rendering time will increase. To save time as you work, it is often useful to display only one layer at a time.

To view only one layer:

1. **Select the layer in the Layer palette.**
2. **Select SHOW SELECTED LAYER ONLY from the IMAGE menu.**



Use the SHOW SELECTED LAYER ONLY command to view the currently selected layer.

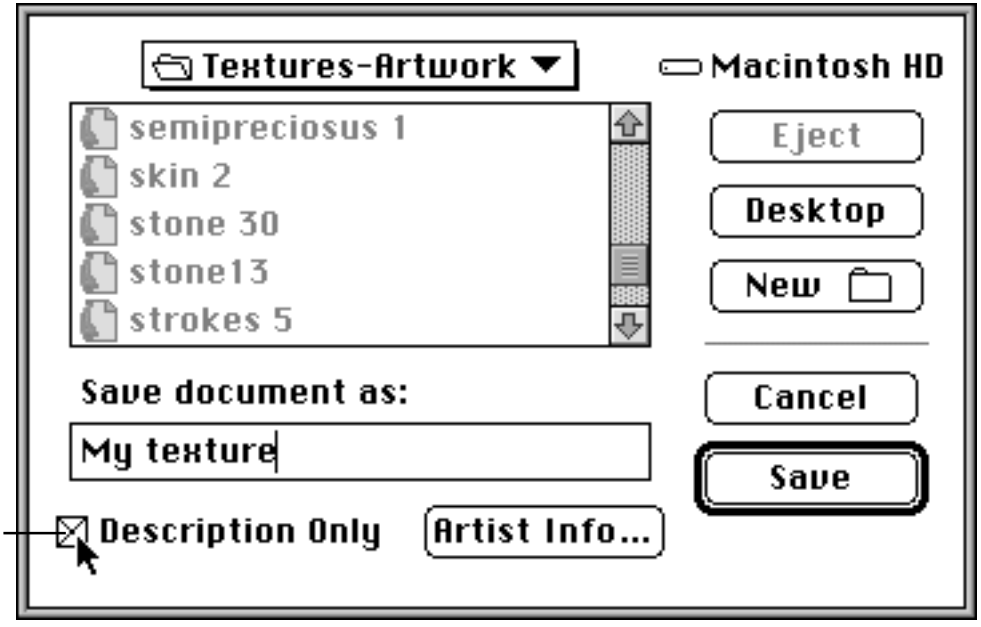


To view all layers, simply select SHOW ALL LAYERS from the IMAGE menu.

SAVING IMAGES

Once you have a texture you like, you can save it to disk for future use. Simply choose SAVE from the FILE menu and the Save dialog box will appear. Give the image a name and find the folder you wish to save it in.

By default, TextureScape saves both the image description and the rendered contents of the current Image window. This helps the file open faster in the future. However, saving your texture as "Description Only" dramatically reduces the disk space consumed by saved files. The storage needed per file typically drops from several hundred Kilobytes to a mere 15-30 Kilobytes. This way, you can "stockpile" textures for future projects. It's a great way to archive your own library of textures without taking up tremendous amounts of disk space!



Checking the "Description Only" checkbox will make a file that is very small in size, usually between 15K to 30K.

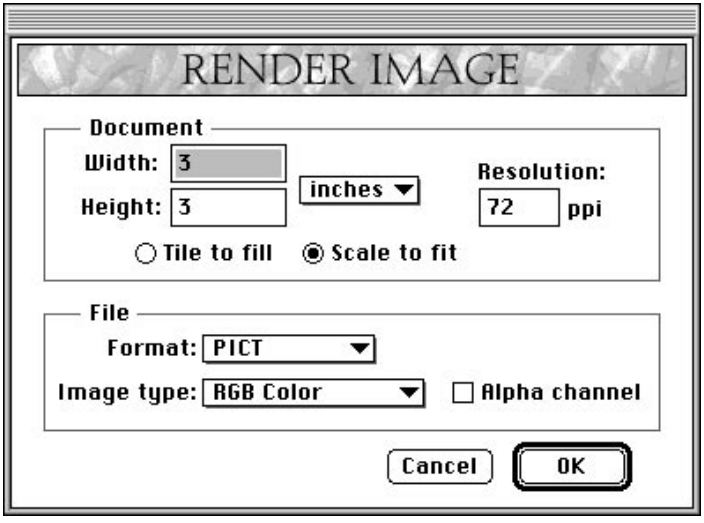
TextureScape allows you to attach information to a particular texture via the ARTIST INFO button in the SAVE dialog. Clicking this button introduces a sub-dialog where you can enter the name, company, address and e-mail of the artist. This information is then displayed in the lower-left corner of the Browser when the texture is selected.

9 Rendering High-Resolution Textures

One of the unique advantages TextureScape offers over other texture generation programs is its ability to render an image to any size or resolution. This section will guide you through the rendering process.

THE RENDER IMAGE DIALOG

When you are ready to render, select the RENDER IMAGE... command from the FILE menu. This will bring up the Render Image dialog box. Here is where you choose the size and resolution for your texture.



The Render Image dialog box

Width and Height

TextureScape allows you to specify the size of the image in either points, picas, inches, centimeters or pixels. To switch to a different measurement unit, select the desired unit from the pop-up menu next to the width and height text edit boxes. By default, the size and units will be the same as those you set when you initially created the document.

Resolution

Resolution allows you to specify the pixels per inch or pixels per centimeter of the rendered image. Your choice of what resolution to use depends on your application of the texture. If you are rendering backgrounds for a multimedia piece, then 72ppi (pixels per inch) is adequate. If, however, you are rendering an image for printing on an imagesetter, you will probably want to choose higher resolutions — anywhere from 150ppi to 400ppi. Check with your service bureau for recommended resolutions for your output.

Tile to Fill vs. Scale to Fit

You can choose to have TextureScape either tile a texture to fill the final output size, or scale the texture up or down to fit the final image size.

With “Tile to fill,” TextureScape takes the dimensions of your texture document and tiles (repeatedly duplicates) it to fill the image dimensions defined in Width, Height and Resolution. TextureScape will alert you if the dimensions entered for Width and Height are not an exact multiple of the dimensions of the texture document, and will therefore not tile exactly.

With “Scale to fit,” TextureScape scales your texture (resizes it larger or smaller) to fit into the final dimensions. Because TextureScape uses PostScript outlines to create images, no resolution will be lost when “Scale to fit” is used.

Image Formats

TextureScape supports all major image file formats, including PICT, TIFF and EPSF, as well as all the compression modes associated with those formats. You can render an image in the default RGB, CMYK for TIFF images, grayscale or the System palette.

Alpha Channel Support

TextureScape also has the ability to render an alpha channel with any image. An alpha channel specifies masking information for the image file, and allows for seamless image compositing in programs such as Specular Collage and Adobe Photoshop.

To render an alpha channel with the image, select the Alpha Channel checkbox in the RENDER IMAGE dialog.

Remember that alpha channels produced by TextureScape will be affected by the amount of softness applied to a shape via the Soften Edges slider. If no softness is specified, the alpha channel will be crisp and exact. However, if softening has been applied to a shape, the alpha channel cannot be exact.

READY TO RENDER

Once you decide on the rendering parameters, click the OK button and TextureScape will ask where you want to save the file. After you specify a location on a disk, TextureScape will render the image.

It is important to note that if you render images with very high resolutions, you may want to allocate more memory to TextureScape to prevent virtual RAM caching during rendering. When your hard disk is used as a virtual memory cache (which occurs when there is not enough normal RAM to carry out the task), the rendering process becomes slowed. You can free up more RAM by quitting all applications currently running but not in active use. You can also close all open TextureScape files not needed during rendering. The bottom line is: the more memory available, the more TextureScape can render at optimum performance.

10 Animating Textures

TextureScape is capable of producing a huge assortment of beautiful images with even a small set of variables. Even more exciting, however, is TextureScape's ability to animate between any number of images.

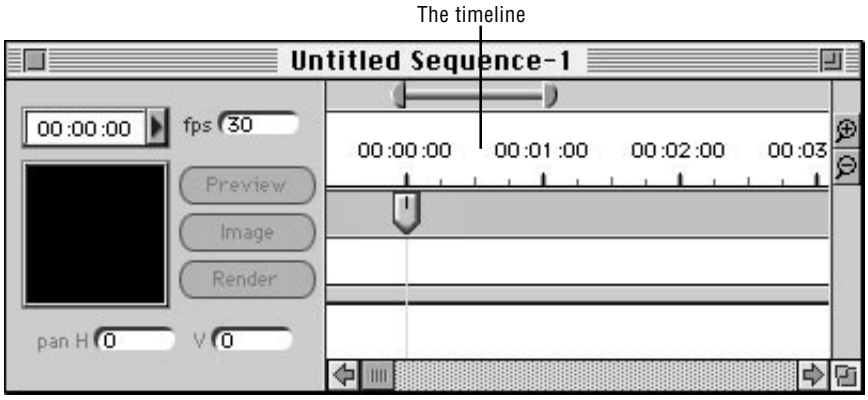
TextureScape allows you to define an animation or *sequence* in a series of steps or *keyframes*. Each keyframe represents a different image. TextureScape will then create the in-between frames necessary to change from one texture to another.

TextureScape creates the in-between frames by interpolating the parameters of one image description to the next. As a result, the textures do not simply crossfade from one to another but actually metamorphose or "morph" over time.

CREATING A SEQUENCE DOCUMENT

Up until now, we have only created individual textures. To animate between different textures, we must introduce the concept of time. A Sequence document is simply a list of textures with each texture defined at a specific point in time. TextureScape stores all of the information about a texture at each point in time and then interpolates between the parameters, creating the animation.

To create a new Sequence document, select NEW from the FILE menu. Then select SEQUENCE from the hierarchical menu. TextureScape will bring up a Sequence window.

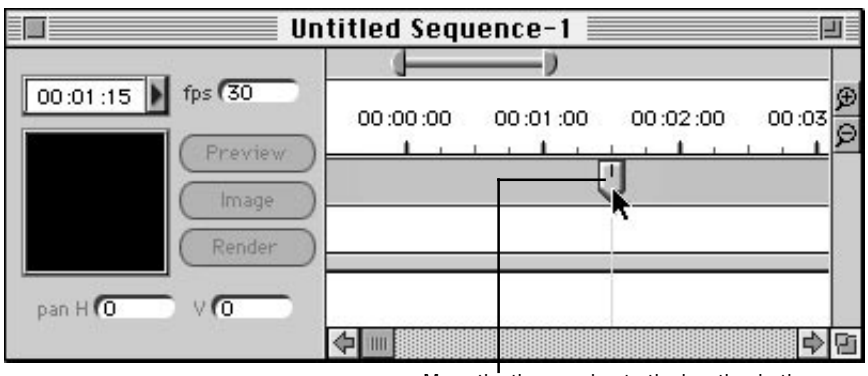


The main feature of the Sequence window is the Timeline. The Timeline is simply a bar, with time going forward as it goes to the right. The times associated with the Timeline are listed above the bar. The Timeline always starts at 0.

By default, the Timeline is displayed in minutes: seconds: frames, a shortened version of the SMPTE (Society of Motion Picture and Television Engineers) time format. This format was developed by video and film professionals for editing video clips and sound. You can use this shortened time display to better align and sequence your TextureScape animations for use within video editing programs that also use this format, like Adobe AfterEffects or Premiere.

THE TIME MARKER

Below the Timeline is the Time Marker. The Time Marker defines where you are in time, both for playback and for editing your animations. For example, if you have the Time Marker at 00:01:02, and you create a new keyframe, the keyframe will be inserted at 00:01:02.



To move the Time Marker, simply click and drag it to the desired location. As you move the Time Marker, you will see its exact location displayed on the SMPTE Display on the left-hand side of the Sequence window.

Holding down the CONTROL key will snap the Time Marker to the current time increments indicated in the Timeline.

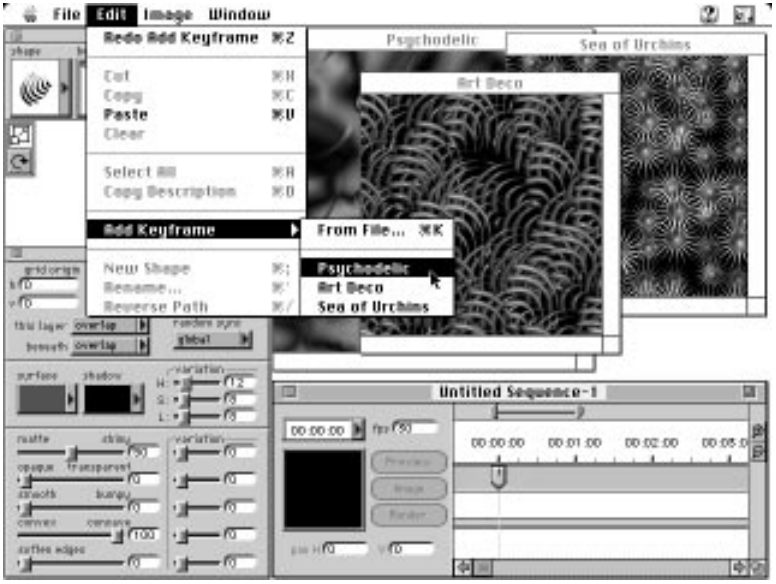
ADDING A KEYFRAME

There are two ways to add a keyframe to a Sequence:

1. **Insert the image's description as a keyframe from a file that is already open.**
2. **Load the description from an image you have already saved to disk.**

To insert an image as a keyframe into a Sequence:

1. **Bring the Sequence window to the front.**
2. **Place the Time Marker at the desired location.**



3. **Select ADD KEYFRAME from the EDIT menu.**
   In this sub-menu will be a list of currently opened images; simply choose the one you want. TextureScape will automatically insert a keyframe where the Time Marker is currently located.

To insert an image as a keyframe into a Sequence that is saved to disk and not currently open:

1. **Place the Time Marker at the desired location.**
2. **With the Sequence window active, select ADD KEYFRAME from the EDIT menu.**
   Select FROM FILE... from the hierarchical menu. TextureScape will bring up the standard Macintosh open dialog box.
3. **Find the image you have already saved to disk.**
4. **Click the OPEN button.**
   TextureScape will insert a keyframe with that texture at the current location of the Time Marker.

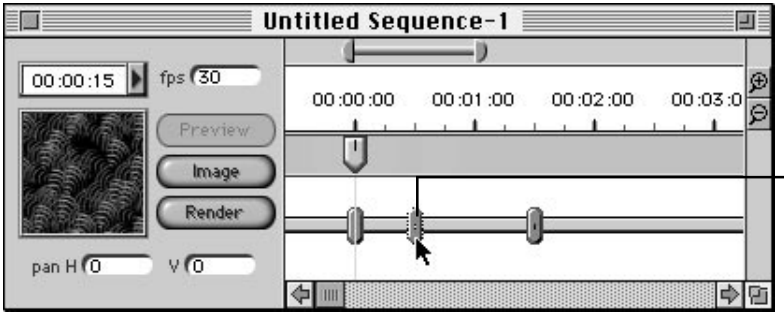
Once an image is copied into a Sequence, there is no linkage between the image and the sequence document. This means that sequence documents are self-contained files with all the neccessary information contained within them to render the animation. So, you can pass sequence documents to other machines to be rendered; you need not transport the original image documents that were used to create the keyframes.

EDITING SEQUENCES

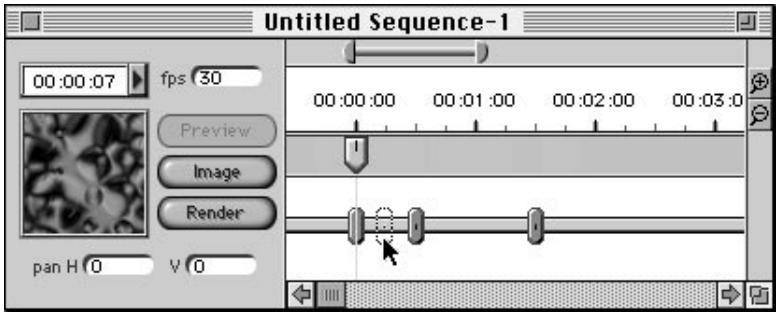
Once you have created an animation, you will probably want to make changes to the timing and order of the animation. The Time Marker will "snap" to keyframes as you get close to them. In addition, the Preview window will be updated to show which texture is associated with that keyframe.

Moving Keyframes

To move any keyframe, click on it and drag it to the desired location.



To move a keyframe, click and hold on it with the cursor, then drag it left or right to a new location on the timeline.



Holding down the OPTION key while dragging a keyframe will duplicate it.

To copy a keyframe, hold down the OPTION key while clicking and dragging it.

To snap keyframes to exact time increments, hold down the CONTROL key while clicking and dragging it.

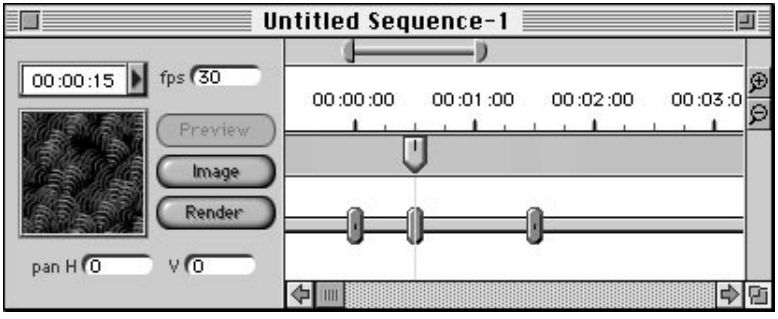
While you cannot select and move multiple keyframes, holding down the SHIFT key while moving a keyframe will move ALL keyframes to the right of the selected keyframe.

It is also possible to stretch out an animation to increase or decrease the length of the animation, while still maintaining the timing relationship between the keyframes. Holding down the COMMAND key while moving a keyframe will squash or stretch all keyframes to the right of the selected keyframe.

Deleting Keyframes

To delete a keyframe:

1. **Move the Time Marker so it is on that keyframe.**



After positioning the time marker on the keyframe, use the CLEAR command from the EDIT menu to remove the keyframe from the Sequence.

2. **Select CLEAR from the EDIT menu.**
   The keyframe will now be deleted.

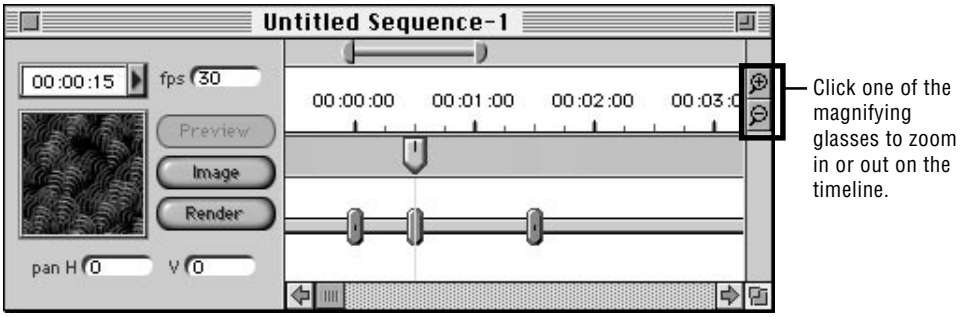
OTHER SEQUENCE WINDOW CONTROLS

The Preview Window

The Preview window is updated as you move the Time Marker. If you move the Time Marker over a keyframe, the Preview window will show the texture represented by that keyframe.

Zooming In and Out on the Timeline

There are many times during animation creation when you will need to zoom in on the Timeline to place a keyframe at a specific frame or moment in time. Likewise, there are many times when it is advantageous to be able to see the entire animation. The Zoom controls allow you to perform both of these functions.



The Zoom controls are found on the upper-right hand corner of the Sequence window. To zoom in, click on the magnifying glass with a "+" sign. To zoom out, click on the magnifying glass with a "-" sign.

Changing the Time Display

You can change the Timeline and Time Display to different time units by clicking on the arrow to the right of the display. The available units are:

- *Minutes: Seconds: Hundredths of Seconds*
- *Minutes: Seconds: Frames*
- *Frames*

Note that when the Timeline display is set to “Frames,” the “fps” (see below) also affects the Timeline.

Changing the Frames per Second

By default, TextureScape creates all animations at 30 frames per second (fps).There are times, however, when it can be useful to render an animation at a higher or lower frame rate. For example, when doing a quick preview of a large animation, rendering a version of the animation at 15 fps will take half the time.

To change the default frame rate, simply change the “fps” text box in the Sequence window. This will change the frame rate for the entire animation.

Punch-in and Punch-Out Markers

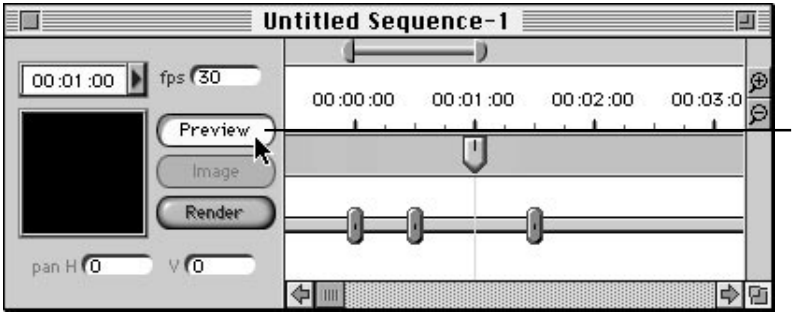
TextureScape allows you to select a portion of a Sequence for rendering. The Punch-in and Punch-out markers define that range. To move the Punch-in/Punch-out markers, simply click and drag them to the desired location.

To render only from the Punch-in/Punch-out markers, select “Render Selected Range Only” in the Render Sequence dialog. For more information on rendering, see “Rendering Sequences.”

The Preview Button

The Preview button creates an image preview in the Preview window at the current location of the Time Marker.

You do not have to be on a keyframe to use the Preview button.



The Image Button

The Image button allows you to convert a keyframe into an individual Image document. For example, if you wanted to modify an existing keyframe without opening the original document, you could image the keyframe, modify the texture and then copy it back to the Sequence.

Pan H and Pan V

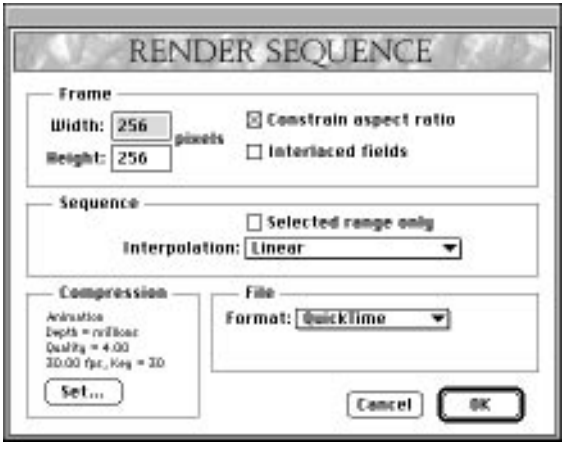
The Pan H and Pan V control the amount of pan offset for a particular keyframe. If the Pan H and Pan V values are different across two keyframes, then TextureScape will interpolate between them, causing the image to shift vertically or horizontally by the amount specified.

Pan H and Pan V values entered in pixels represent offset (as opposed to position), and affect all keyframes that come after the keyframe that contains the offset.

For example, imagine a programmed sequence in which keyframe 1 had Pan H=0 and Pan V=0, keyframe 2 had Pan H=20 and Pan V=20, and keyframe 3 had Pan H=20 and Pan V=20. The final pan offset would be 40 pixels in each direction. Also note that if keyframe 3 had Pan H=0 and Pan V=0, that keyframe would still be offset 20 pixels in each direction from keyframe 2.

RENDERING SEQUENCES

When you are ready to render your animation, either click on the RENDER button in the Sequence window, or select RENDER SEQUENCE... from the FILE menu.



The Render Sequence dialog box

1. **Select the desired size for the rendered animation.**

2. **Select the file format for the animation.**
   You can choose between QuickTime, individually numbered PICT files or PICS files. Note that QuickTime must be installed on your machine for the QuickTime file format to be available.

3. **If you are using QuickTime, you can also select the compressor to be used by clicking on the Compressor SET button.**
   This will bring up the standard Apple QuickTime dialog. For more information about the different QuickTime compressors, please consult your QuickTime manual.

4. **Click on "Render Selected Range Only" if you would like TextureScape to only render the animation between the Punch-in/Punch-out markers.**

5. **Select the Interpolation method.**
   Spline interpolation smooths out harsh or radical changes in an animation. It is particularly useful for animations with a large number of radically different textures. "Cardinal Spline" animations are very tight animations, in that the spline curve moves directly through the actual texture eventmark. "B-Spline" animations are looser than cardinal spline because the spline curve does not actually reach the texture eventmark.

6. **Click "Interlaced Fields" if you want TextureScape to field-render the animation.**
   Field-rendered animations are a sequence of interlaced fields, as opposed to frames. Most NTSC and PAL systems display one field at a time, not one frame. Movies rendered in frames look jerky when played back on systems that display only field sequences, but amazingly smooth when field-rendered. Field-rendered movies display the odd-numbered field (1/60th of a second) of frame one and the even-numbered field (1/60th of a second) of the next frame (or vice-versa) at the same time to produce frame one of the field-rendered sequence (1/60 + 1/60 = 1/30).
   In TextureScape, a field whose first line is the topmost field is called the "upper field," and a field whose first line is second from the top is called the "lower field." Whether you choose Upper Field First or Lower Field First after the Field Render button is clicked depends upon the type of system you plan to use when displaying your field-rendered TextureScape animation.

7. **Click on the OK button.**
   TextureScape will ask you for a name and a location to save the animation, and will begin rendering.

Rendering speed can vary greatly depending on your machine and the complexity of the file. If for some reason you want to stop an animation, press the Stop button, or press COMMAND-Period (".").

VIEWING YOUR ANIMATION

TextureScape is not an animation viewing package. To view a finished animation, use MoviePlayer™, Peter's Player™ or any other QuickTime playback device.

WHERE TO GO FROM HERE

We hope you enjoy using TextureScape. This concludes the tutorial section of this manual. Experimentation is the key to getting the most out of TextureScape, so spend some time exploring each feature and option. Also, remember to take a look at the example files on the disk to get some more ideas for possible images or animations. If you have specific questions about a particular feature, consult the Reference section at the end of this manual.

Reference

11 The Menus

THE FILE MENU

New

"New" creates a new TextureScape file. There are three types of TextureScape files: Image, Sequence and Shape Library.

Image... (COMMAND+N)

Opens a new Image document and brings up the New Image dialog.

- **Size (Width and Height)**
  Allows you to specify the size of the Image.
- **Units**
  The Units pop-up menu allows you to select the units for defining the size of the Image. Your choices are: points, picas, inches, centimeters and pixels. For print work, points, picas, inches or centimeters will probably be your unit of choice, depending on what you are used to. For video work, pixels would be a more suitable choice.
- **Background Color**
  Allows you to select any color for the Background of the Image. This can be changed afterwards using the Layer palette.

Sequence (COMMAND+M)

Opens a new Sequence document. Sequences allow you to animate between different images over time. A Sequence document is a list of image descriptions, or keyframes, on a timeline. After a list of image descriptions is added to a Sequence, TextureScape can animate between the different textures.

Shape Library (COMMAND+Y)

Opens a new Shape Library document. This allows you to draw your own shapes or import shapes from programs like Adobe Illustrator to create custom shape libraries.

Open… (COMMAND+O)

Opens a TextureScape document.

Browse… (COMMAND+B)

Calls up the Browser. The Browser displays TextureScape files in a large preview format and allows you to choose a selection of files to be opened all at once. Select a folder on your hard drive containing TextureScape files, and the Browser will display them. Scroll down and scan through the previews, select a few to be opened in the same batch, or select all the files pictured.

Close (COMMAND+W)

Closes the active window of an Image, Sequence or Shape Library document.

Save… (COMMAND+S)

Saves a TextureScape Image, Sequence, or Shape Library document. Normally, TextureScape Image documents are saved with the contents of the Image window embedded in the file. When saving images, the “Description Only” checkbox allows you to save only the description of the parameters of the texture. The advantage of this is that the resulting Image documents will be smaller. The disadvantage is that files will take longer to open since they will have to be re-rendered.

The Save dialog also contains a an Artist Info button for entering information about

the texture, such as the artist's name, etc.

Save As...

Saves a TextureScape document under another name or to a different location.

Revert

Reverts the TextureScape document to the last saved version of the file.

Import... (COMMAND+G)

Allows you to import PostScript outlines from such programs as Adobe Illustrator or Macromedia Freehand. Shapes are added to new or existing shape library documents.

Render Image/Sequence (COMMAND+R)

Renders the Image or Sequence file selected.

Page Setup...

Brings up the standard Macintosh Print Setup dialog. Consult your Macintosh User's Guide for more information.

Print... (COMMAND+P)

Prints the Image to the selected printer at screen resolution. Note that this feature is intended only for Image documents.

Preferences... (COMMAND+U)

Opens the Preferences dialog box. This dialog allows you to set certain TextureScape defaults according to the way you like to work.

- **Default width/height**
  Sets the default document size that TextureScape displays when NEW...IMAGE is selected from the FILE menu. To adjust the default document width and height, enter new values into the text edit fields. Be sure to verify the unit of measurement that is currently selected.
- **Units**
  This pop-up menu allows you to define what units TextureScape will use. Note that this affects all open documents.
- **Background Color**
  This sets the default background color that TextureScape displays when NEW...IMAGE is selected from the FILE menu. To select a different default background color, click on the arrow next to the background color preview swatch.
- **Divisions/Spacing**
  Allows you to select how the Grid is defined. If it is set to Divisions, then the Grid is defined by the number of sections desired. If it is set to Spacings, then the Grid will be defined by the size of each of the sections. For instance, if you had a 4" by 4" document, you could define a Grid as having 4 sections or Divisions (each 1" in size) or, with Spacings, have Grid sections be 1" each (in all 4 sections).
- **Outline Color**
  This allows you to select any color to be used for the Grid display in the Image window. To select a different color for the Grid, click on the arrow next to the Grid color preview swatch.
- **Preview Icons**
  This allows you to create thumbnail-size preview icons for the Finder for both texture files and rendered image files.

Quit (COMMAND+Q)

Quits TextureScape. TextureScape will prompt you to save any documents which have not been saved.

THE EDIT MENU

Undo/Redo (COMMAND+Z)

Undoes or redoes the last action or command.

Cut (COMMAND+X)

The Cut command works with layers in the Layer palette, keyframes in a Sequence, and shapes in Shape Libraries. The Cut command cuts the currently selected layer, keyframe or shape to the clipboard.

Copy (COMMAND+C)

The Copy command works in the Image window, the Layer palette, Shape Libraries and with keyframes in Sequences. It copies the area of the Image window selected with the marquee to the clipboard as a PICT, which then can be pasted into other bitmap programs like Adobe Photoshop. With the layer palette selected, the menu command becomes Copy Layer, allowing you to copy the selected layer to the clipboard. When a Shape Library is active, the Copy command allows you to copy a selected shape to the clipboard to then be pasted into another shape library. Finally, it copies keyframes to the clipboard, with the time marker pointing to a keyframe in a Sequence document.

Paste (COMMAND+V)

The Paste command works with the Layer palette, Shape Libraries and Sequences. The Paste Layer command pastes the copied or cut layer over the currently selected layer. When shape libraries are selected, the Paste command pastes copied shapes into new or existing shape libraries.

If you have used the Copy Description command, you can use the Paste command to copy the complete description of an Image document into a Sequence document. This will automatically create a keyframe at the current position of the Time Marker. You can also paste the description into a new, empty Image document to recreate the image from scratch.

Clear

The Clear command works with the Layer palette, keyframes in a Sequence and shapes drawn in Shape Libraries. It deletes the currently selected layer, keyframe or shape.

Select All (COMMAND+A)

Selects the entire contents of the active Image window or drawing area in an active Shape Library.

TextureScape fully supports System 7's Macintosh Drag and Drop extension. This allows you to select an area of a TextureScape texture document and drag it directly to another application which supports Drag and Drop, such as Specular Infini-D.

Duplicate (COMMAND+D)

Causes currently selected outlines to be duplicated in the Shape Library.

Copy Description (COMMAND+D)

Copies the complete description of the selected Image document, which can then be pasted into a new image document or used as a keyframe in a sequence document.

When a Shape Library is active, this command becomes Duplicate.

Add Keyframe

Add Keyframe only applies to a Sequence document. The Add Keyframe command is a hierarchical menu that contains a list of all open Image documents. Add Keyframe allows you to select any open Image document, to be added as a keyframe at the current position of the Time Marker.

- **From File... (COMMAND+K)**
  If the desired Image document is not open, you can still add it as a keyframe using the From File... command. This command will bring up the standard Macintosh open dialog, allowing you to select an Image document. The keyframe will be added at the current position of the Time Marker.

New Shape (COMMAND+;)

Allows you to draw a new shape in an open Shape Library using the provided drawing tools.

Rename (COMMAND+')

Allows you to rename a shape in a Shape Library. Select the shape from the shape list and choose RENAME from the EDIT menu. Type in a new name.

Reverse Path (COMMAND+/)

The Reverse Path command allows you to create interesting "holes" or "punch outs" when working with a group of two or more outlines in TextureScape's drawing area. The command allows you to determine whether overlapping outlines are transparent or filled.

THE IMAGE MENU

New Layer (COMMAND+L)

Creates a new layer in the active Image document.

Select Layer

Allows you to select any layer in an Image document.

Show Selected Layer Only/Show All Layers (COMMAND+J)

This command will toggle between showing only the currently selected layer or the whole image with all of its layers. When viewing the current layer only, all other layers will be temporarily hidden.

Reset All

This command resets the parameters in each of the palettes back to the defaults.

Shape Info... (COMMAND+I)

Opens the Shape Info dialog for the current layer. This dialog contains all the information relevant to the shape, including its rotation, size and the dimensions of the bevel. The size of the bevel is represented as a percentage of the total shape. At 100%, the bevel will cover the entire shape.

Use this dialog when you need to precisely control the parameters of a shape.

Color Palette... (COMMAND+E)

The Color Palette dialog allows you to modify, load and save color palettes for use in TextureScape.

TextureScape allows you to have only one color palette loaded at any time. You can define your colors in both RGB (Red, Green and Blue) values and in CMYK (Cyan, Magenta, Yellow and Black) values. Other controls in this dialog include:

- **Open...**
  Allows you to open a color palette that has been previously saved.
- **Save...**
  Allows you to save the current color palette to a separate file. TextureScape will bring up the standard Macintosh "Save" dialog asking for a name and location to store the color.
- **Apple...**
  Brings up the standard Apple Color picker to choose a color.

Show Rulers (COMMAND+-)

Displays rulers in the chosen unit of measurement along the left and top of the Image window.

Show Outlines (COMMAND+=)

Displays visible outlines of the shapes in the currently selected layer. These outlines may be moved by clicking and dragging in the window.

THE WINDOW MENU

Full-Screen Preview (COMMAND+F)

Full-Screen Preview allows you to see a texture tiled to fill the entire screen. Note that all other windows will be hidden with Full-Screen Preview turned on. To turn it

off, simply select the menu again or click anywhere on the screen.

Tile Image (COMMAND+T)

TextureScape can tile the texture in the Image window with this option selected. As you increase the size of the Image window, TextureScape tiles the image to create an infinite canvas of the texture. With Tile Image turned off, resizing the Image window so that it is larger than the document's size will simply show gray around the edges of the texture.

Apply (COMMAND+0)

Opens the Apply floater. Closes the floater if it is already open.

Shape (COMMAND+1)

Opens the Shape palette. Closes the palette if it is already open.

Attribute (COMMAND+2)

Opens the Attribute palette. Closes the palette if it is already open.

Light (COMMAND+3)

Opens the Light palette. Closes the palette if it is already open.

Layer (COMMAND+4)

Opens the Layer palette. Closes the palette if it is already open.

Hide Tool Windows/ Show Tool Windows (COMMAND+,)

Hides or shows all open palettes and floaters, while leaving document windows open.

Shape Libraries

Activates a sub-menu containing the currently loaded Shape Libraries.

Hide (COMMAND+H)

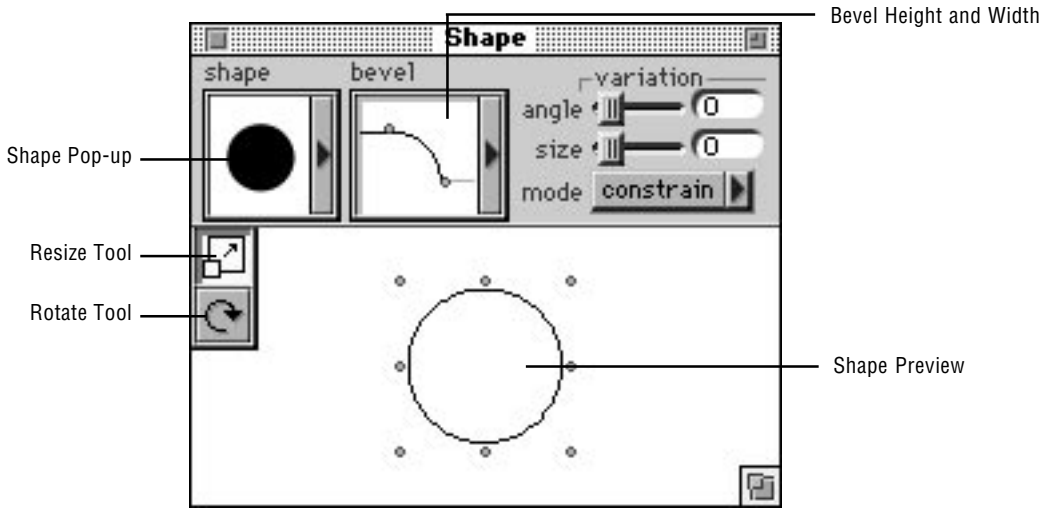
Hides an active Shape Library.

Open documents

In addition to these windows, your currently open documents are also placed under this menu and given a keyboard equivalent starting at Command+5 and going up to Command+9. After 9, documents are not given a keyboard equivalent.

12 Palettes and Windows

THE SHAPE PALETTE



Choose Bevel/Bevel Information Pop-Up

This preview displays the currently selected bevel. To change the bevel, click on the preview to see a menu of bevel choices. The height and width of the bevel curve can also be adjusted in this preview. To adjust the bevel height or width, click on one of the two circular handles on the curve. Double-clicking this icon brings up the Shape Info dialog box.

Bevel Information

This curve displays the height and width of the bevel on the current shape. To adjust the bevel height or width, click on one of the two circular handles on this curve. Double-clicking on the Bevel information will bring up the Shape Info dialog box.

Angle Variation

The Angle slider controls the variability of a shape's rotation. A value of 100% indicates the shapes will vary through the full range of rotation angles, producing very pronounced variation. Lesser values produce a less dramatic range of variation.

Size Variation

The Size slider controls the random variation of shape size over a texture. A value of 100% signifies that the shapes will vary through the full range of size, producing more pronounced variation. Lesser values produce a less dramatic range of size variation.

Size Variation Pop-Up

This pop-up menu, located beneath the Angle and Size variation sliders, pertains only to the Size slider. A setting of "Constrain" maintains the integrity of the shape when its size is being varied. "Free" allows the shape to be squashed and stretched on both horizontal and vertical dimensions. "H only" and "V only" limit the squashing and stretching to the selected dimension.

Resize Tool

This tool allows you to change the shape's size. All resize transformations occur from the center of the shape outward. Holding down the SHIFT key while using the scale tool will scale the shape proportionately. Holding down the COMMAND key will temporarily toggle to the Rotation tool.

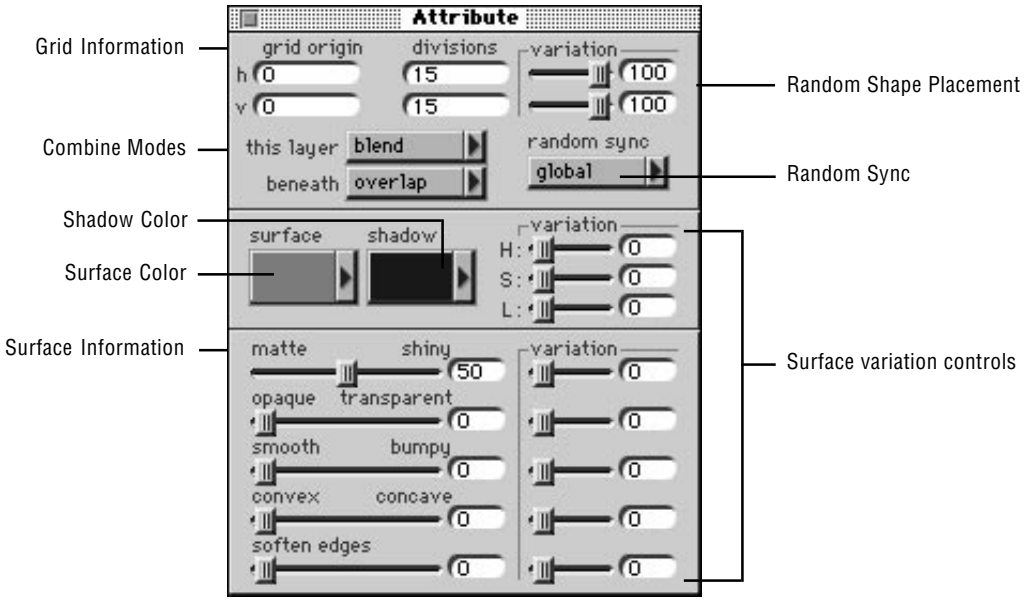
Rotate Tool

This tool allows you to rotate the shape. All rotations occur around the center of the shape. Holding down the SHIFT key while using the scale tool will rotate the shape in 45 degree increments. Holding down the COMMAND key will temporarily toggle to the Resize tool.

Shape Preview

This allows you to look at the current layer's shape after you have changed its size and rotation. To adjust the scale or rotation angle, click on the control points of the shape with the desired tool. Double-clicking on the shape will bring up the Shape Info dialog box.

THE ATTRIBUTE PALETTE



Grid Divisions / Grid Spacing

Each shape is placed at a centerpoint on a user defined grid. This grid is the basis for the repeating pattern of each shape within a single layer. Each layer in a texture can have its own grid settings.

The Horizontal and Vertical Divisions values define how many divisions are created within the current layout. For example, if the project was set to create a texture 3 inches wide by 3 inches high, and the H & V Divisions were both set to 3, then there would be centerpoint intersections for each shape at 0 inches, 1 inch, 2 inches and 3 inches going in both directions. This would create a repeating pattern of nine shapes, with quarter shapes on the edges. The shape, as defined above, would be placed at these intersections on the grid.

Horizontal and Vertical Spacing is another way of defining the grid intersections. These values simply provide a different way of defining the grid for people who like to think in spacing terms, rather than in numbers of divisions. To work in Spacing units, switch the grid value from divisions to spacing in the Preferences dialog.

Grid Origin

The Horizontal and Vertical origin allows the user to offset the entire grid from the zero point in the top left corner of the image window. This value is entered in the current measurement system chosen by the user, and changes the origin point of where the grid pattern starts. (The default is 0, 0.)

Random Shape Placement

The Horizontal and Vertical Variation values randomly offset the placement of the shape on the intersection points defined in the grid settings. The maximum a shape can vary is half the distance to any adjacent grid point.

Combine Modes

The combine modes, (also known as "methods", "calculation methods", and "transfer modes") allow you to perform complex calculations between the colors of elements that overlap each other in the image document. TextureScape performs these calculations between shapes overlapping each other on the same layer, as well as the shapes that overlap on all layers below it, or both at the same time. TextureScape offers 8 combine modes to choose from:

- **Blend**
  When Blend is chosen as a combine method, the overall color of the overlapping shapes is maintained, but variations in lightness and hue from all elements are prevalent.
- **Overlap**
  In overlap mode, any overlapping shapes are composited against each other and no calculations are made. The pixel values of the shapes are maintained entirely.
- **Maximum**
  Maximum mode compares the lightness values of the overlapping shapes and then combines the lighter values to produce the result.
- **Sum**
  The rendered result of the Sum combine mode is the sum of each RGB component of overlapping elements, up to a maximum allowable value.

- **Difference**
  The Difference combine mode subtracts the brightness values of the overlapping pixels and displays their absolute value as the result.
- **Multiply**
  Multiply takes the product of the pixel values of all overlapping shapes and divides the result by 256.
- **Divide**
  Divide mode divides the lightness values of all overlapping pixels to produce the result.
- **Xor**
  The effect of the Xor mode is to erase areas of elements that overlap each other.

Random Sync

The selection of "Global" from the Random Sync pop-up specifies that the H and V variation values are exactly the same from one layer to the next. In other words, a layer with divisions of 3 x 3 and variation of H 50 x V 50 will line up exactly with another layer with the same settings when Global is selected for both of them. This is useful when creating complex shapes that contain multiple layers stacked on top of each other, yet it is desired to have the shapes as a whole scattered randomly about the document.

The "Per Layer" option facilitates the creation of more organic textures because it specifies that the H and V variation values are unique to the particular layer selected. In other words, a layer with divisions of 3 x 3 and variation H 50 x V 50 will *not* line up exactly with another layer with the same settings when Per Layer is selected for both of them.

Surface Color

Surface color represents the overall color of the shape. To select a different color for a particular shape, click on the arrow next to the currently selected color and a menu will appear showing the available colors.

Shadow Color

Shadow colors are also chosen from a color palette. To select a different color, click on the arrow next to the currently selected color and a menu will appear showing the available colors.

Surface Information

- **Matte – Shiny**
  The Matte – Shiny slider controls the amount of specular highlight that appears on the shape. A low value makes the highlight dull and diffuse, creating a matte look, while a high value makes the highlight sharp and distinct. This is a percentage value, with 0% being no gloss and 100% being the highest amount of shine.
- **Opaque – Transparent**
  The Opaque – Transparent slider controls how opaque or transparent a shape appears. This is a percentage value, with 0% being completely opaque and 100% being completely transparent.
- **Smooth – Bumpy**
  This slider controls how much highlight and shadow color is spread into the surface color to simulate a bumpy surface. This is a percentage value, with 0 % being completely smooth and 100% being the highest amount of bumpiness.
- **Convex – Concave**
  Controls the varying degrees of convexity and concavity associated with a shape. This is a percentage value, with 0% being completely convex, 50% being completely flat, and 100% being completely concave.
- **Soften Edges**
  The soften edges slider controls how a shape blends into the layers below it as well as the background color. A value of 0 indicates no softening, resulting in crisp edges, while a value of 100 produces the maximum softening available.

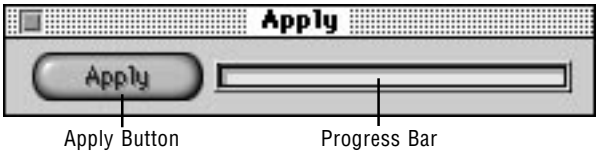
THE APPLY PALETTE

The Apply Palette contains the Apply button, which initiates the rendering of the current texture based on all setting changes. You may click the Apply button or hit the RETURN or ENTER keys to update changes. Please keep in mind that changes made in any of the palettes will not be updated until the APPLY button is pressed. This allows you to make multiple changes to the settings in the palettes without having to wait for the Image window to update after every change.

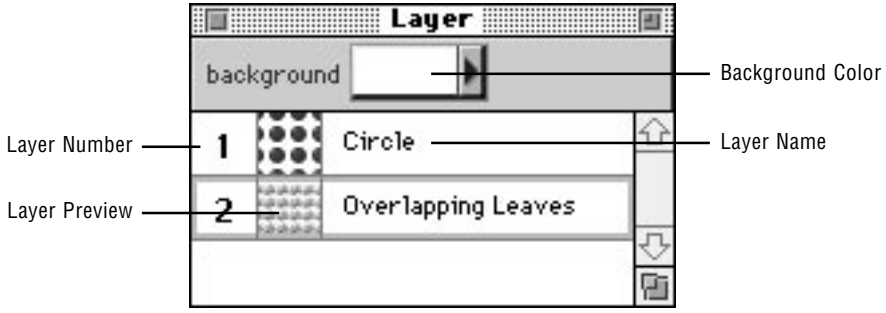
There are two exceptions to this rule. In the Layer palette, changing the background color and re-ordering layers updates automatically without the APPLY button being pressed.

Also located on the Apply palette is a progress bar indicating the progress of the rendering of the current texture in the image window after the Apply button has been pressed.

The rendering of the current texture in the image window can be canceled at any time simply by pressing COMMAND+".". The texture will revert back to the previously rendered texture.



THE LAYER PALETTE



Background Color

This is a pop-up menu that allows you to adjust the background color of the current texture. To change the background color, click on the color swatch and choose a new color from the pop-up menu. Double-click the color swatch to select a color from the Apple Color Picker.

Layer Number

This number indicates a layer's position in the layering order, with 1 being at the top of the list. If you wish to adjust the layering order, click and drag the Layer up or down the list and place it into the position desired. To remove a layer, select the layer and choose "Clear" from the Edit menu.

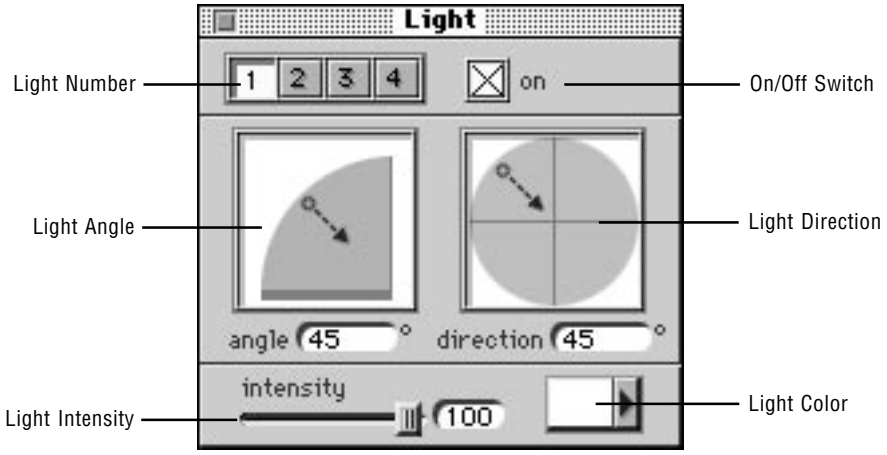
Layer Preview

This is a small iconic preview of a layer, and is updated automatically by TextureScape.

Layer Name

This is the name of a layer. It defaults to the name of the shape that is used in the layer, but can be changed at any time the user wishes. To change the name, click on the layer name, and then type in a new name.

THE LIGHT PALETTE



Light Number

These buttons indicate which light is being adjusted in the Light palette. To work on different lights, click the appropriate light number button.

On / Off Switch

This checkbox turns the currently selected light on or off.

Light Angle

This parameter, sometimes called the elevation or altitude angle, determines the angle of the light relative to the ground. Lights with higher angles will produce more light on the top of the shape. For example, an altitude of 60 degrees would have the light hitting the shape's surface from above. This value can be between 0 degrees and 60 degrees.

Light Color

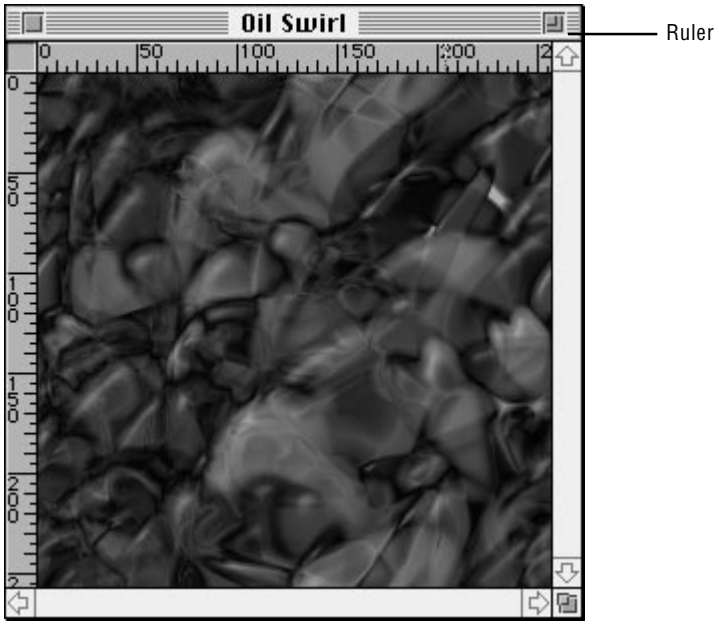
This is a pop-up menu for adjusting the color of the currently selected light. To change the light color, click on the color swatch and choose a new color from the pop-up menu of choices. Double-click the color swatch to select a color from the Apple Color Picker.

Light Direction

The light direction, technically referred to as the azimuth angle, is the direction the light is hitting the shape in a 360˚ circumference.

Light Intensity

The intensity of the light is how brightly it shines, which directly affects the shape's surface quality. The intensity values simply control how bright the lights shine. 100 percent is the highest value.



The Rulers

Rulers are available in the Image window. To make the rulers visible, select "Show Rulers" from the Edit menu. The units of the rulers are based on the unit setting in the Preferences dialog. Inches, centimeters, picas, points and pixels are all available.

Marquee Selections

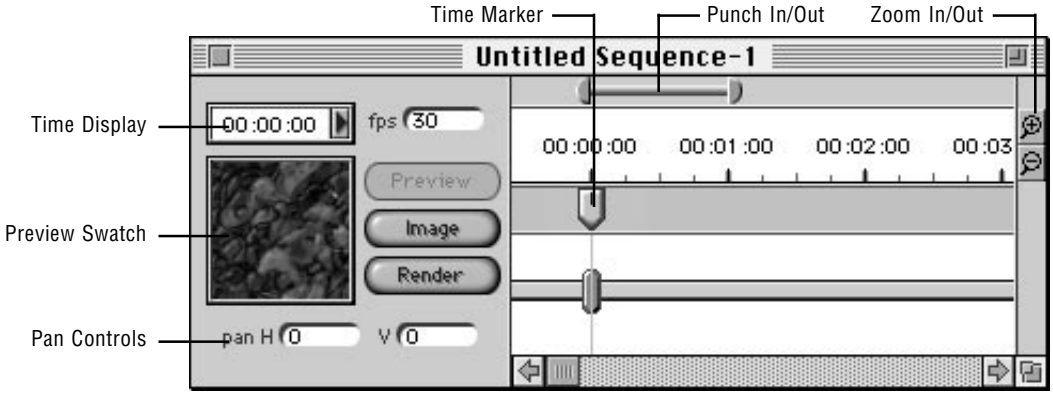
You can select a portion of the image window by dragging a marquee anywhere within the Image window. You can then copy these contents to the clipboard as a PICT and paste into other bitmap programs, such as Adobe Photoshop.

TextureScape fully supports System 7's Macintosh Drag and Drop extension. This allows you to select an area of a TextureScape texture document and drag it directly to another application which supports Drag and Drop, such as Specular Infini-D or the Apple Scrapbook.

Shape Outlines

When Show Outlines is activated from the IMAGE menu, outlines for the shapes in the current layer are shown in white. The outlines, and thus the grid, can be moved interactively simply by clicking on any of the outlines in the Image window and dragging the mouse. This feature allows you to easily and precisely position the shapes for a particular layer in the texture.

THE SEQUENCE WINDOW



Time Display

The Time Display can show the animation in a shortened version of SMPTE (The Society of Motion Picture and Television Engineers) timecode. This display also shows the current location of the Time Marker. To change the Timeline display, click on the Time Display field for a list of display format choices.

Frames per Second (FPS)

The field shows the current frames per second for the animation. You can change this value by clicking on the field and entering a new number. This affects the entire animation.

Preview Swatch / Preview, Image & Render Buttons

The Preview button updates the Preview Swatch in order to display a small version of the texture at the current Time Marker location. The Image button opens the same current texture or interpolated texture that the Time Marker points to as an

Image document. The Render button opens the Render Sequence dialog and renders a sequence as an animation file to disk.

Pan Controls

TextureScape can pan the texture across the image as it animates. This gives the user more control over the animation process. The Pan controls are dimmed, unless the Time Marker points to a specific keyframe.

Punch-in/Punch-out Markers

The Punch-in/Punch-out markers allow you to select a portion of a Sequence for rendering. To render only the portion of a Sequence defined by the Punch-in/Punch-out markers, click on “Render Selected Range Only” in the Render Animation dialog.

Zoom In / Zoom Out

These buttons zoom the timeline in or out so the user can see greater or less detail regarding where keyframes are located in time.

Time Marker & Timeline

The Timeline simply displays time in a linear fashion, starting from zero. The Time Marker points to the current location in time, and can be adjusted by clicking and dragging the marker to a new location. The SHIFT key snaps the Time Marker to keyframes. The CONTROL key snaps the Time Marker to time increments.

Keyframes

This bar displays the keyframes defined in the animation sequence. These keyframes can be moved along the timebar to adjust their locations in time. The OPTION key duplicates keyframes. The CONTROL key snaps keyframes to exact time increments when dragged. The SHIFT key maintains spacing between all keyframes to the right of the keyframe being adjusted. Clicking and dragging a keyframe with the COMMAND key held down will squash and stretch the keyframes proportionately in time.

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