

How to work with symbols

A *symbol* is a reusable object stored in a library for an Adobe Flash Professional CS5 document. It can be as simple as a static drawing or as complex as a movie clip that runs within another movie clip. Both you and the Flash Player can reuse symbols stored in the library. Not only does this approach speed development, it also helps keep your document small, making it faster for site visitors to download.

Each symbol has its own Timeline. You can add frames, keyframes, and layers to a symbol Timeline, just as you can to the main Timeline.

An *instance* is a copy of a symbol located on the Stage or inside the Timeline of another symbol. An instance can differ from its symbol in color, size, and other characteristics set through the Property inspector. Editing the symbol updates all its instances, but applying effects or changing the properties of an instance of a symbol changes only that instance.

Types of symbols

Each symbol has a unique Timeline and Stage, complete with layers. You can add frames, keyframes, and layers to a symbol Timeline, just as you can to the main Timeline. When you create a symbol you choose the symbol type.

- Use graphic symbols for static images and to create reusable pieces of animation that are tied to the main Timeline. Graphic symbols operate in sync with the main Timeline. Interactive controls and sounds won't work in a graphic symbol's animation sequence. Graphic symbols add less to the FLA file size than buttons or movie clips because they have no timeline.
- Use button symbols to create interactive buttons that respond to mouse clicks, rollovers, or other actions. You define the graphics associated with various button states, and then assign actions to a button instance. For more information, see *Handling events in Programming ActionScript 3.0*.
- Use movie clip symbols to create reusable pieces of animation. Movie clips have their own multiframe Timeline that is independent from the main Timeline—think of them as nested inside a main Timeline that can contain interactive controls, sounds, and even other movie clip instances. You can also place movie clip instances inside the Timeline of a button symbol to create animated buttons. In addition, movie clips are scriptable with ActionScript®.

Creating a new symbol

You can create a symbol from selected objects on the Stage, create an empty symbol and make or import the content in symbol-editing mode, and create font symbols in Flash. Symbols can contain all the functionality that Flash can create, including animation.

Flash adds the symbol to the library and switches to symbol-editing mode. In symbol-editing mode, the name of the symbol appears above the upper left corner of the Stage, and a cross hair indicates the symbol's registration point.

To create a new symbol:

1. Open an existing Flash document or create and save a new Flash document (ActionScript 3.0).
2. Select Insert > New Symbol.

The Create New Symbol dialog box appears (**Figure 1**).

3. In the Create New Symbol dialog box, give the new symbol a name and select a symbol type.
4. Click OK.

The new symbol has been created and opens in symbol-editing mode.

5. Add content to the symbol.
6. To exit symbol-editing mode and return to the main Timeline, click Scene 1 on the edit bar (**Figure 2**).

The new symbol is stored in the Document library and can be reused in this and other Flash documents.

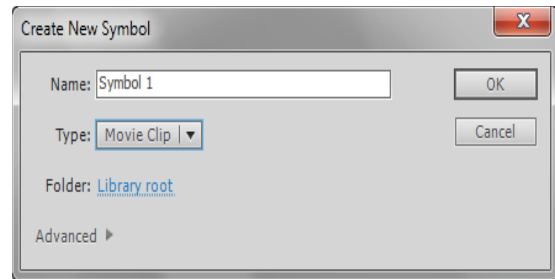


Figure 1 Create New Symbol dialog box

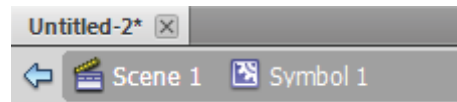


Figure 2 Edit bar

Converting an existing object to a symbol

Converting an existing object to a symbol

To convert an object to a symbol:

1. Select the object you want to convert to a symbol.

Note: To select both the stroke and the fill of a shape, you must double-click the fill unless the object is grouped. A single click on the fill selects only the fill, a single click on a stroke selects one side of a stroke where a double click on the stroke selects the complete stroke.
2. Select Modify > Convert To Symbol.

The Convert To Symbol dialog box appears (**Figure 3**).

3. In the Convert To Symbol dialog box, give the new symbol a name, and select a symbol type.

The object is now a symbol that is stored in the Document library and can be reused in this and other documents.

4. Select Window > Library to display the Library panel and see your new symbol.

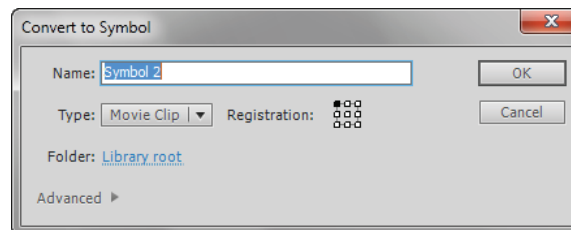


Figure 3 Convert To Symbol dialog box

Editing a symbol

You can edit an existing symbol either through the Library panel or in place on the Stage. You can also use the Edit In Place command to edit a symbol. By using the Edit In Place command, you can edit a symbol while still viewing other objects on the Stage. Editing a symbol is different from changing the properties of a symbol instance. When you click a symbol on the Stage and change its properties, you are changing the symbol instance, not the symbol

Editing a symbol in place

To edit a symbol in place, you can double-click an instance of the symbol on the Stage or you can select an instance of the symbol on the Stage and right-click (Windows) or Control-click (Mac OS) and then select Edit In Place. You can also select Edit > Edit In Place to edit a symbol.

Editing a symbol through the library

You can edit a symbol by double-clicking it in the Library panel. When you edit a symbol through the library, Flash updates all instances of the symbol on the Stage. If the symbol has no instances (that is, if you have not copied it from the Library panel to the Stage), nothing on the Stage changes when you edit the symbol.

Using symbols with the Deco drawing tool

By using the Decorative drawing tools, you can turn your symbols into complex, geometric patterns. The Decorative drawing tools apply algorithmic calculations, known as *procedural drawing*, to movie clips or graphic symbols in the library. Flash contains a range of Deco drawing tools. This guide describes a representative set of these. For information on other Deco tools, see Flash Help.

The Symmetry effect

Use the Symmetry effect to arrange symbols symmetrically around a central point.

To apply the Symmetry effect:

1. Select the Deco drawing tool, and select Symmetry Brush from the Drawing Effect menu in the Property inspector (**Figure 4**).

2. In the Property inspector, click the Edit button.

The Select Symbol dialog box appears, with a list of custom symbols from the library (**Figure 5**).

You can use any movie clip or graphic symbol in the library with the Symmetry Brush effect. This symbol-based effect gives you a great deal of creative control over artwork you create in Flash.

3. Select a symbol in the Select Symbol dialog box and click OK.

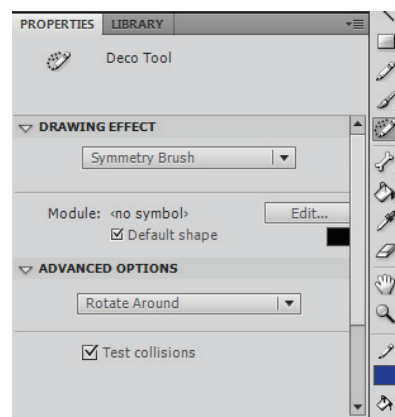


Figure 4 Drawing Effect menu in the Property inspector

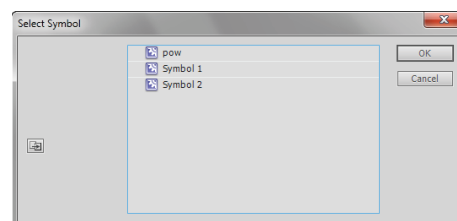


Figure 5 Select Symbol dialog box

4. In the Property inspector, choose one of the options from the Advanced Options menu (**Figure 6**).
 - *Rotate Around*: Rotates the shapes in the symmetry around a fixed point that you designate. The default reference point is the center point of the symmetry. To rotate the object around its center point, drag in a circular motion.
 - *Reflect Across Line*: Flips the shapes an equal distance apart across an invisible line that you specify.
 - *Reflect Across Point*: Places two shapes an equal distance apart around a fixed point that you specify.
 - *Grid Translation*: Creates a grid by using the shapes in the Symmetry effect you are drawing. Each click of the Deco drawing tool on the Stage creates a grid of shapes. Adjust the height and width of the shapes by using the x and y coordinates defined by the Symmetry Brush handles.
5. Click the Stage where you want the Symmetry Brush artwork to appear (**Figure 7**).
6. Use the Symmetry Brush handles to adjust the size of the symmetry and the number of symbol instances.

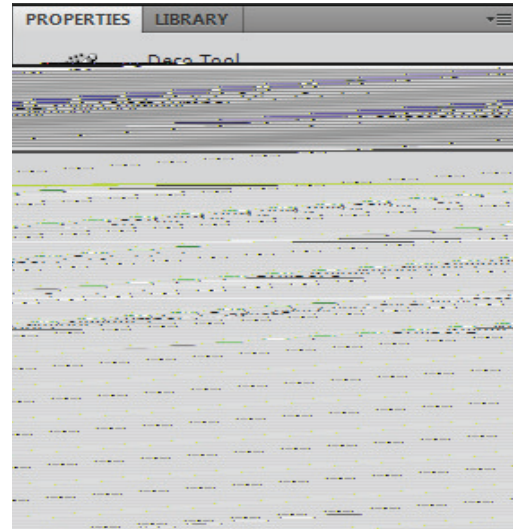


Figure 6 Advanced Options menu

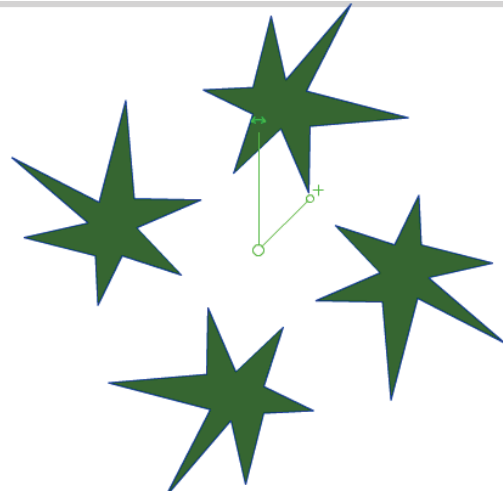


Figure 7 Placing symbols with the Symmetry Brush

The Grid Fill effect

You can use the Grid Fill effect to fill the Stage, a symbol, or a closed region with a symbol from the library. After you have drawn the Grid Fill on the Stage, if you move or resize the filled symbol, the Grid Fill moves or resizes accordingly.

The Grid Fill effect creates a repeating tiled background or an area or shape with a custom pattern. The default symbol for the Grid Fill effect is a 25-by-25-pixel black rectangular shape with no stroke.

To apply the Grid Fill effect:

1. Select the Deco drawing tool, and select Grid Fill from the Drawing Effect menu in the Property inspector (**Figure 8**).
2. In the Property inspector, click the Edit button to select a custom symbol from the library.

The Select Symbol dialog box appears, with a list of custom symbols from the library.

You can use any movie clip or graphic symbol in the library with the Grid Fill effect.

3. Select a symbol in the Select Symbol dialog box and click OK.
4. You can use the following advanced options in the Property inspector to specify the horizontal and vertical spacing and the scale of the fill shape.
 - *Horizontal Spacing*: Specifies the horizontal distance in pixels between shapes used in the Grid Fill.
 - *Vertical Spacing*: Specifies the vertical distance in pixels between shapes used in the Grid Fill.
 - *Pattern Scale*: Enlarges or shrinks an object horizontally (along the x axis) and vertically (along the y axis).

Note: After you apply the Grid Fill effect, you cannot change the advanced options to alter the fill pattern.

5. Click the Stage or click within the shape or symbol where you want the Grid Fill pattern to appear (**Figure 9**).

The pattern fills the area.

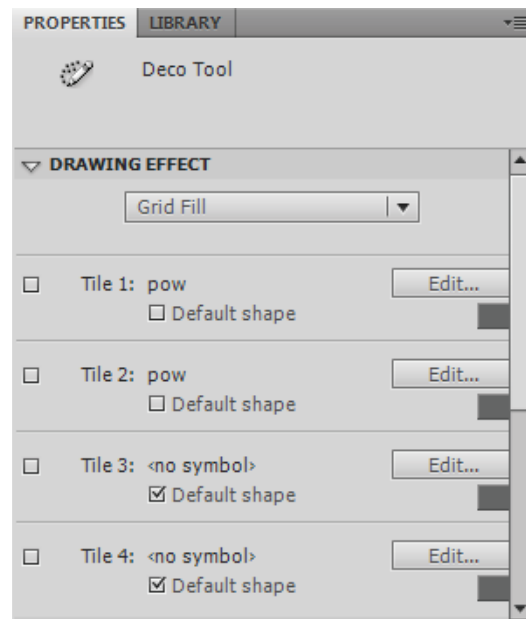


Figure 8 Drawing Effect menu in the Property inspector



Figure 9 Placing symbols with the Grid Fill effect

The 3D Brush effect

You can use the 3D Brush effect to spray symbols so that they appear to be in front of each other. After you have drawn the 3D Brush on the Stage, if you resize or otherwise change the filled symbol, the 3D Brush changes accordingly.

To apply the 3D Brush effect:

1. Select the Deco drawing tool, and select 3D Brush from the Drawing Effect menu in the Property inspector (**Figure 10**).
2. In the Property inspector, click the Edit button to select a custom symbol from the library.

The Select Symbol dialog box appears, with a list of custom symbols from the library.

You can use any movie clip or graphic symbol in the library with the 3D Brush effect.

3. Select a symbol in the Select Symbol dialog box and click OK.
4. You can use the following advanced options in the Property inspector.
 - *Max Objects*: Specifies the total number of shapes used in the 3D Brush.
 - *Spray Area*: Specifies the area covered in each spray of the 3D Brush.
 - *Perspective*: Specifies that objects appear in front of each other.
 - *Distance Scale*: Specifies how far in front of each other objects appear to be.
 - *Random Scale Range*: Specifies the degree to which objects vary in size.
 - *Random Rotation Range*: Specifies the degree to which objects are rotated.

Note: After you apply the 3D Brush effect, you cannot change the advanced options to alter the fill pattern.

5. Drag the pointer across the Stage to draw with the 3D Brush (**Figure 11**).

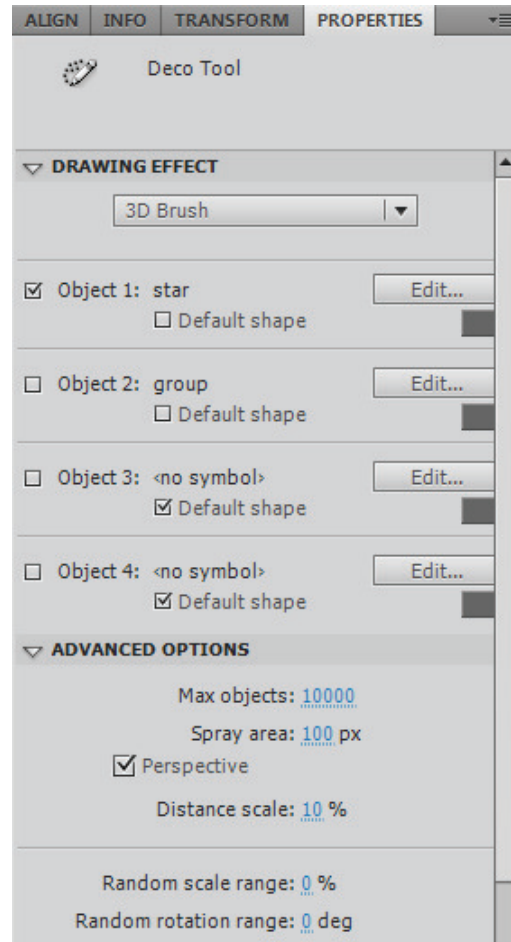


Figure 10 Drawing Effect menu in the Property inspector



Figure 11 Placing symbols with the 3D Brush effect

The Vine Fill effect

You can use the Vine Fill effect to fill the Stage, a symbol, or a closed region with a Vine pattern. You can substitute your own artwork for the leaves and flowers by selecting symbols from the library. The resulting pattern is contained in a movie clip that itself contains the symbols that make up the pattern.

To apply the Vine Fill effect:

1. Select the Deco drawing tool, and select Vine Fill from the Drawing Effect menu in the Property inspector.
2. In the Property inspector (**Figure 12**), click an Edit button to select a custom symbol from the library if you want to replace the default flower and leaf symbols.

The Select Symbol dialog box appears, with a list of custom symbols from the library.

You can use any movie clip or graphic symbol in the library to replace the default flower and leaf symbols when applying the Vine Fill effect.

3. Select a symbol in the Select Symbol dialog box and click OK.
4. You can specify the horizontal and vertical spacing and the scale of the fill shape.
 - *Branch Angle*: Specifies the angle of the branch pattern.
 - *Branch Color*: Specifies the color for the branch.
 - *Pattern Scale*: Adjusts an object by enlarging or reducing it both horizontally (along the x axis), and vertically (along the y axis).
 - *Segment Length*: Specifies the length of the segments between leaf and flower nodes.
 - *Animate Pattern*: Specifies that each iteration of the effect is drawn to a new frame in the Timeline. This option creates a frame-by-frame animated sequence of the flower pattern as it is drawn.
 - *Frame Step*: Specifies how many frames to span per second of the effect being drawn.

Note: After you apply the Vine Fill effect, you cannot change the advanced options in the Property inspector to alter the fill pattern.

5. Click the Stage or click within the shape or symbol where you want the Vine Fill pattern to appear (**Figure 13**).

The pattern fills the area.

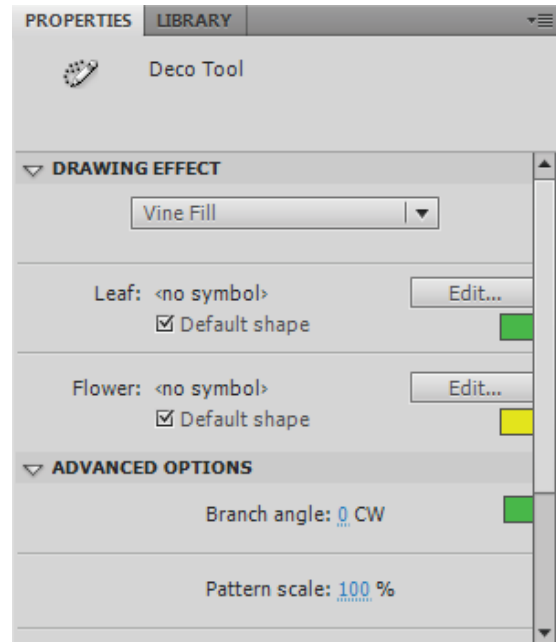


Figure 12 Edit buttons in the Property inspector



Figure 13 Vine Fill pattern

The Lightning Brush effect

You can use the Lightning Brush effect to draw a Lightning pattern.

To apply the Lightning Brush effect:

1. Select the Deco drawing tool, and select Lightning Brush from the Drawing Effect menu in the Property inspector.
2. You can specify the following advanced options in the Property inspector (**Figure 14**).
 - *Lightning Color*: Specifies the color for the lightning.
 - *Lightning Scale*: Adjusts the size of the lightning pattern by enlarging or reducing it both horizontally (along the x axis), and vertically (along the y axis).
 - *Beam Width*: Specifies the maximum width of the segments between lightning branches.
 - *Animation*: Specifies that each iteration of the effect is drawn to a new frame in the Timeline. This option creates a frame-by-frame animated sequence of the lightning pattern as it is drawn.
 - *Complexity*: Specifies how the amount of branching that will be generated in the lightning.

Note: After you apply the Lightning Brush, you cannot change the advanced options in the Property inspector to alter the fill pattern.

3. Drag the pointer across the Stage to create lightning (**Figure 15**).

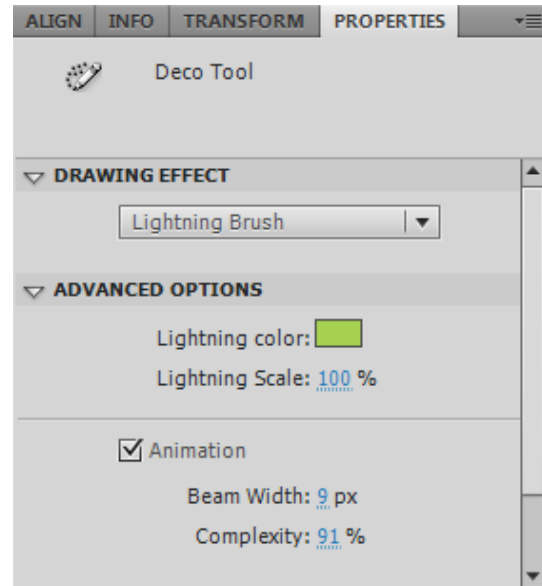


Figure 14 Advanced Options in the Property inspector

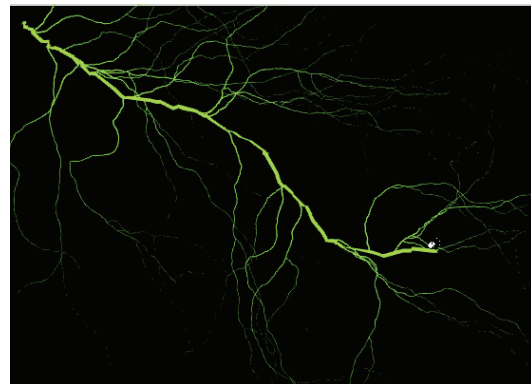


Figure 15 Lightning pattern

The Building Brush effect

You can use the Building Brush effect to draw buildings on the Stage.

To draw with the Building brush:

1. Select the Deco drawing tool, and select Building Brush from the Drawing Effect menu in the Property inspector.
2. You can specify the following options in the Property inspector (**Figure 16**).
 - *Building*: Specifies Random Building or one of four skyscraper patterns.
 - *Building Size*: Adjusts the width of the building from 1 to 10

Note: After you apply the Building Brush effect, you cannot change the advanced options in the Property inspector to alter the fill pattern.

3. Drag the pointer up from the bottom of the Stage to draw buildings (**Figure 17**).

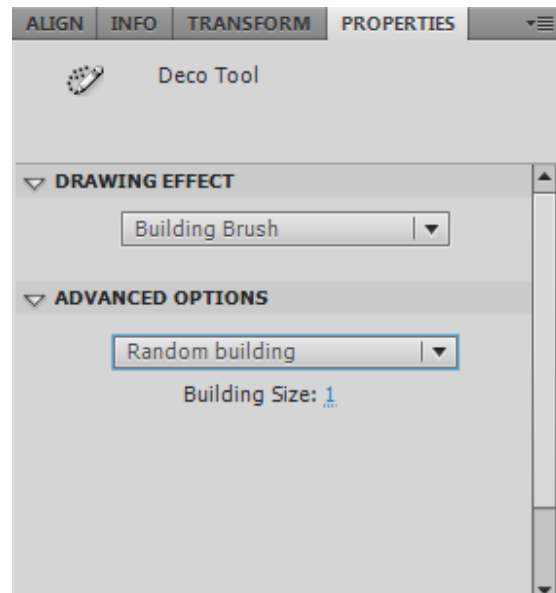


Figure 16 Advanced Options in the Property inspector

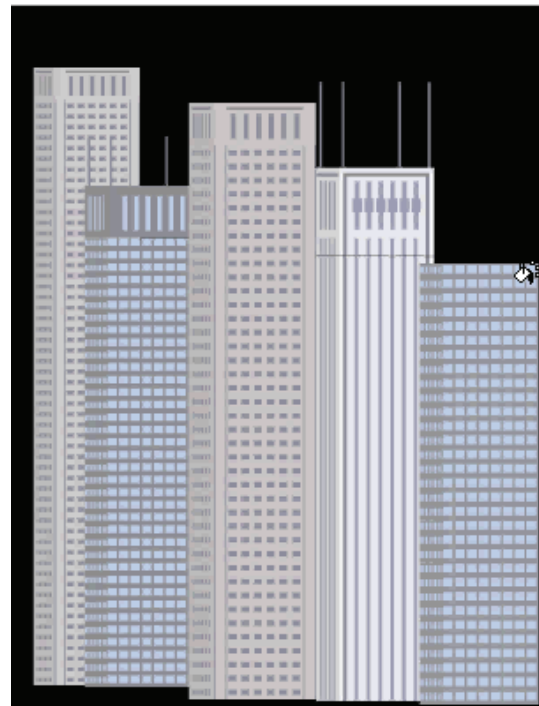


Figure 17 Building Brush Fill pattern