

Creating Graphics

Introduction

Flash offers a full suite of tools for creating and editing graphics. When you draw in Flash, you create vector art. **Vectors** are mathematical descriptions of lines and points that, when connected, form shapes and objects. Vector-defined art is not limited by resolution like bitmaps are so they can be scaled to any size without a loss in quality or increase in file size. This is the basis of Flash; the main reason Flash files are so small and why they can be deployed on so many platforms. Vector graphics are also fully editable after they are created so you can continue to adjust their properties. Included in Flash are many of the drawing tools and procedures familiar to the seasoned user of vector drawing programs. It is also a good place for the beginner to learn. Sketch naturally with the Pencil and Brush tools or use vector-based objects, such as the Rectangle or Oval tools or the Polystar tool. Use the Pen tool to create lines and shapes with Bézier curves. Whatever is drawn can be edited and modified with a variety of tools and palettes. When you select an object or graphic on the Stage, the Property Inspector displays the attributes of that object that are modifiable, such as fill and stroke color, position, and scale.

You can draw shapes in Flash using two drawing models: Merge Drawing and Object Drawing. The **Merge Drawing** model, the default (like previous versions of Flash), automatically merges shapes that you draw when you overlap them. If you select a shape that has been merged with another, and move it, the shape below it is moved too. The **Object Drawing** model allows you to draw shapes as separate objects that do not automatically merge together when you overlap them. You can now extend the Object Drawing mode by creating primitive rectangles and ovals in **Primitive mode (New!)**, which allows you to edit properties in the Property Inspector and specify the corner radius of rectangles and inner radius of ovals. This makes it easy to create pie wedges, round off corners, and other curved shapes.

What You'll Do

Change Drawing Settings

Draw Lines and Shapes

Use the Selection Tools

Zoom In and Out

Move Around with the Hand Tool

Use Rulers, Grids, and Guides

Modify Grid and Guide Settings

Use Snap Align

Change Stroke and Fill Colors

Create Custom Colors

Edit Strokes with the Ink Bottle

Edit Fills with the Paint Bucket

Edit Strokes and Fills with the Eyedropper

Create Gradients

Use the Fill Lock

Use Paint Brush Modes

Draw with the Pen Tool

Modify Shapes

Use the Free Transform Tool

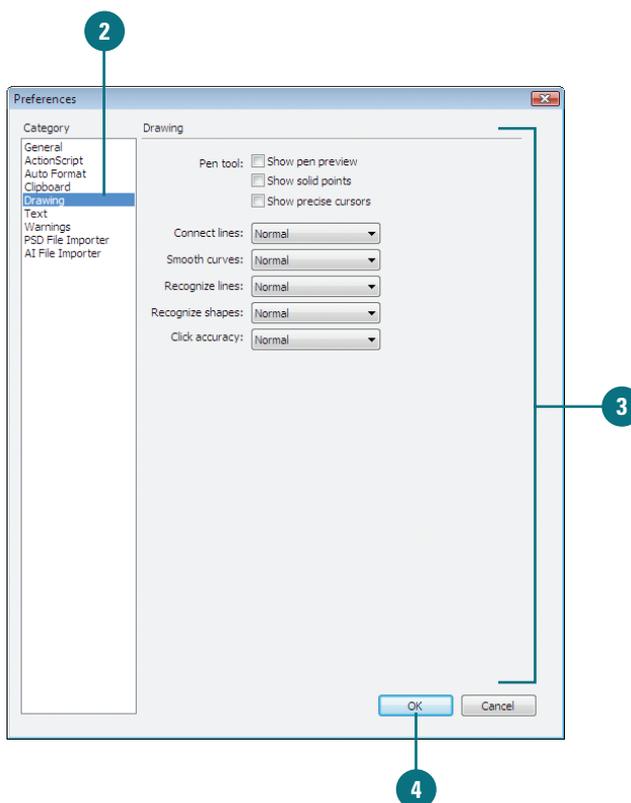
Use Transform Options for Shapes

Changing Drawing Settings

Change the Drawing Settings

- 1 Click the **Flash** (Mac) or **Edit** (Win) menu, and then click **Preferences**.
- 2 Click the **Drawing** category.
- 3 Specify the drawing option you want:
 - ◆ **Pen Tool options.** Select check boxes to show pen preview, solid points, and precise cursors.
 - ◆ **Connect Lines.** Determines how close the ends of any two lines need to be before Flash connects them. It controls when a line is converted into a perfectly straight line.
 - ◆ **Smooth Curves.** Determines the amount of smoothing applied to a drawn line. The lower the smoothing applied, the closer the line appears to what you have drawn.
 - ◆ **Recognize Lines.** Defines how a straight line drawn with the Pencil tool must be before it's converted into a perfectly straight line.
 - ◆ **Recognize Shapes.** Sets how precise simple geometric shapes must be drawn before they are detected as shapes.
 - ◆ **Click Accuracy.** Determines how near to a shape the pointer must be before Flash recognizes it.
- 4 Click **OK**.

The Drawing category on the Preferences dialog box contains a number of drawing settings that control the sensitivity and behavior of Flash's drawing tools. Make changes to the tolerance levels for smoothing or straightening, set the sensitivity for line and shape recognition, or fine-tune snapping. You can exercise greater control over your drawing or allow Flash to perform corrections and adjustments as you draw. You can customize the way you use Pen tools, draw connecting lines and smooth curves, and recognize line and shapes.



Drawing with the Line Tool

Use the Line Tool

- 1 Click the **Line** tool in the Toolbar.

The pointer becomes a crosshair that you can drag on the Stage.

TIMESAVER Press **N** to select the Line tool.

- 2 Click and drag on the Stage, and then release the mouse when the line is the length you need.

TIMESAVER Hold down the **Shift** key, and then drag to draw a 45-degree line.

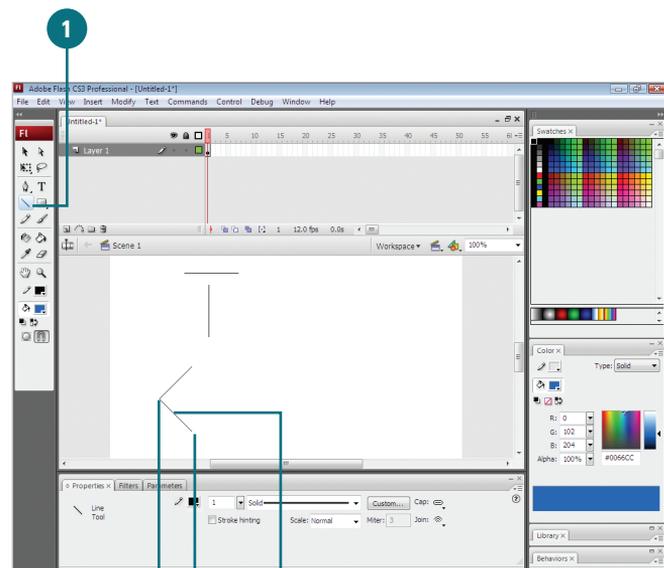
- 3 To change line properties, click to select the stroke, and then specify the options (Color, Weight (0-200), Style, Width and Height, Cap, Join, or Stroke Hinting) you want in the Property Inspector.

TROUBLE? To display the Property Inspector, click the Window menu, point to Properties, and then click Properties.

See Also

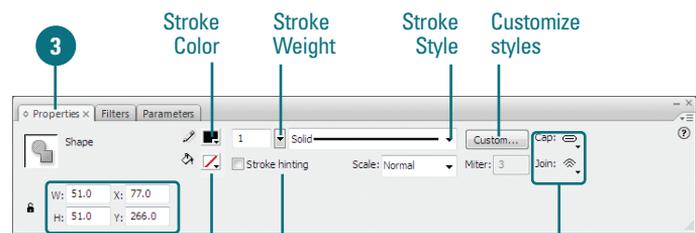
See "Changing Stroke and Fill Colors" on page 96 for information on using color.

The Line tool draws perfectly straight lines in any direction you drag your mouse. In Flash, a line is called a stroke and there is a variety of thickness (0-200 pixels), styles, colors, and gradient fills that can be applied to it. You can also create your own line style for specific types of dashed, dotted or artistic lines. You can constrain the path a line draws to 45-degree angles or create closed shapes by intersecting the lines you draw. In Merge Drawing, when a line overlaps another line on the same layer, it essentially 'cuts' it into two pieces that can be edited as separate objects. You can also specify a line cap and join type. A **join** is the place where two strokes meet (Miter, Round, or Bevel). A **cap** is the end point of a stroke that does not join with another stroke. Select Stroke hinting to make stroke intersections easier to view.



Stroke join

A preview of the line appears as you drag. A circle beneath the crosshair indicates the line's endpoint.



Stroke width and height

Fill Color

Stroke Hinting

Cap and Join options

Drawing with the Pencil Tool

Use the Pencil Tool in Straighten Mode

- 1 Click the **Pencil** tool in the Toolbar.

The pointer becomes a pencil. The Pencil tool options appear at the bottom of the Toolbar. The default mode is Straighten.

TIMESAVER Press *Y* to select the Pencil tool.

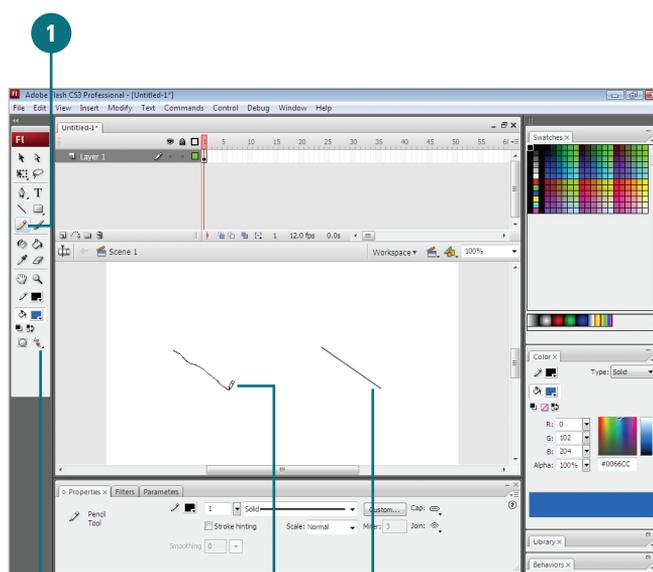
- 2 Draw on the Stage with the Pencil, and then release the mouse.

A rough preview of the line appears as you draw. In Straighten mode, Flash transforms the line into a series of straight-line segments and standard curves.

Did You Know?

Flash converts rough shapes into clean, geometric shapes. If you draw a rough rectangle in Straighten mode, Flash converts your shape into a clean rectangle with straight sides. It does the same for other shapes, such as ovals and triangles. Set the tolerance level of shape recognition in the Drawing preferences.

Use the Pencil tool for freeform drawing. When you draw with the Pencil tool you are creating strokes. It works the same way as a real pencil with options for smoothing and straightening. Depending upon which mode you choose, Flash makes corrections to the drawn line. Smooth mode softens the curve of the line you draw while Straighten mode transforms the line into a series of straight-line segments and standard curves. If you are using the Pencil or Brush tools with Smooth mode, you can specify the degree of smoothness. Additionally, Flash performs shape recognition to the lines you draw so that if it detects something approximating a simple geometric shape such as a rectangle, oval, or triangle, it converts your drawing into whichever shape it detects. To bypass these modifications, select Ink mode. This mode allows for the most freeform drawing with minimal correction by Flash.



Pencil mode is set to straighten by default.

2

Flash straightens the drawn line.



Flash applies shape recognition in Straighten mode.

Use the Pencil Tool in Smooth Mode

- 1 Click the **Pencil** tool in the Toolbar.

The pointer becomes a pencil. The Pencil tool options appear at the bottom of the Toolbar.

- 2 Click the **Pencil mode** popup in the Options area of the Toolbar, and then click **Smooth**.

- 3 In the Property Inspector, click the **Smoothing** popup, and then click a value from 1 to 100 (**New!**).

The default value is set to 50. The greater the smoothing value, the smoother the resulting line.

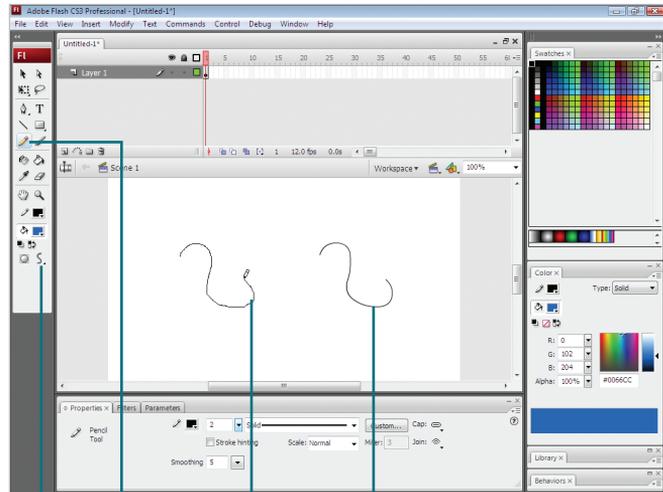
TROUBLE? To display the Property Inspector, click the Window menu, point to Properties, and then click Properties.

- 4 Draw on the Stage with the Pencil, and then release the mouse.

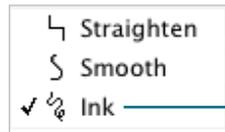
A rough preview of the line appears as you draw. In Smooth mode, Flash smooths the line you draw into curved line segments.

Did You Know?

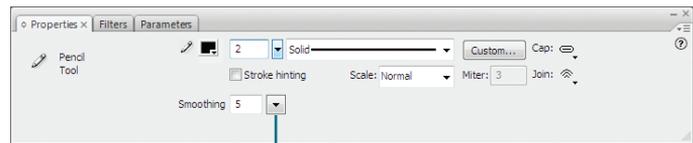
You can disable straightening and smoothing. Click the Pencil mode popup in the Options area of the Toolbar, and then click Ink mode to yield a line closest to the line you've drawn with minimal corrections performed by Flash.



Flash smooths the drawn line.



Use Ink mode for more freeform drawing.



3

For Your Information

Smoothing Curves Another Way

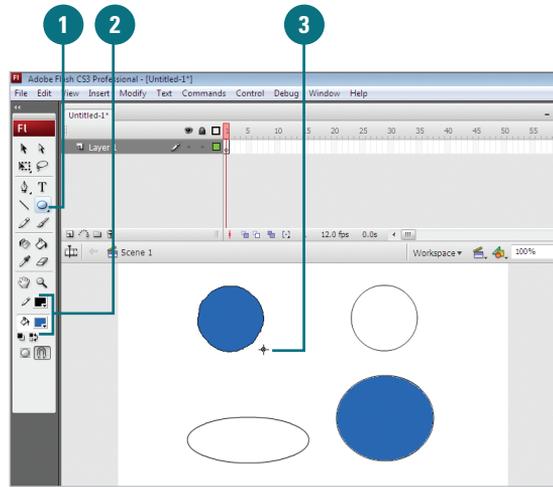
You can also smooth curves by optimizing the shape. Optimizing a shape refines curved lines and fill outlines by reducing the number of curves used to define the shape. To optimize a shape, click it, click the Modify menu, point to Shape, click Optimize, specify a smoothing level, select additional options (select Use Multiple Passes to repeat the smoothing process until you can't anymore, and select Show Totals Message to display an alert when smoothing is complete), and then click OK.

Drawing Shapes with the Rectangle and Oval Tools

Draw with the Oval Tool

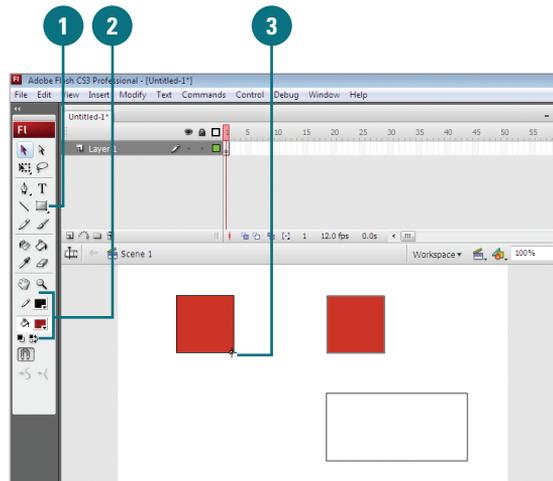
- 1 Click the **Oval** or **Oval Primitive** tool in the Toolbar.
TIMESAVER Press *O* to select an Oval tool.
- 2 Select a **Stroke** and **Fill Color** from the Colors area of the Toolbar.
- 3 Click and drag on the Stage, and then release the mouse.
TIMESAVER Press and hold *Shift* while you drag to create a circle.
- 4 In the Properties Inspector, change the values you want.

The Flash Toolbar includes several tools for quickly creating simple geometric vector shapes. They are easy to use; you just click and drag on the Stage to create the shapes. The Rectangle tool creates rectangles with square or rounded sides. The Oval tool creates circular shapes such as ovals and circles. These shapes can be comprised of Strokes, which are lines that surround and define the shape, Fills, which are a color or texture inside the shape, or both. You can create two types of shapes: Drawing or Primitive. Drawing, or standard, shapes are self contained; the stroke and fill of a shape are not separate elements, while Primitive shapes (**New!**) are separate elements.



Draw with the Rectangle Tool

- 1 Click the **Rectangle** or **Rectangle Primitive** tool in the Toolbar.
TIMESAVER Press *R* to select a Rectangle tool.
- 2 Select a **Stroke** and **Fill** color from the Colors area of the Toolbar.
- 3 Click and drag on the Stage, and then release the mouse.
TIMESAVER Press and hold *Shift* while you drag to create a square.
- 4 In the Properties Inspector, change the values you want.



Draw a Rounded Rectangle

- 1 Click the **Rectangle** or **Rectangle Primitive** tool in the Toolbar.
- 2 Enter a value for the corner radius in the Properties Inspector (**New!**).
- 3 To create an exact size rectangle shape, select the shape, enter the width and height values in the Properties Inspector (**New!**).
- 4 Click and drag on the Stage, and then release the mouse.

Did You Know?

You can enter values ranging from 0 to 100 points in the Rectangle Settings dialog box. A value of zero gives you a straight-sided-square. Higher numbers produce squares with more rounded sides.

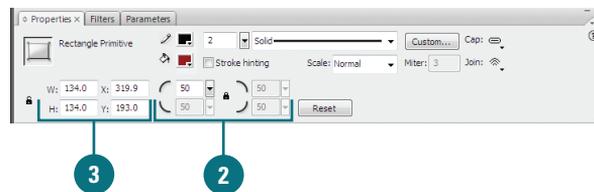
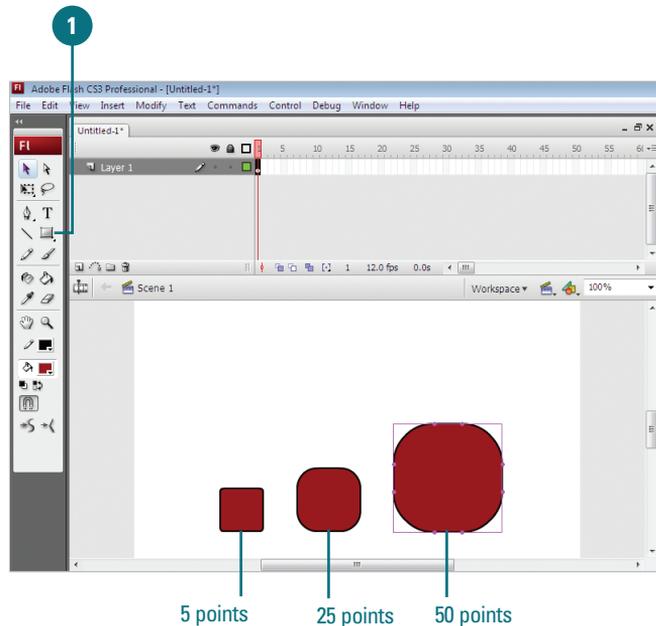
You can hold down the Shift key while dragging to produce a perfect square with equal sides or a perfect circle. If you want to draw an oval or a rectangle without a stroke or fill, you can set either of these options to No Fill in the Colors area of the Toolbar or in the Color Mixer.

You can draw shapes without a stroke or a fill. Set either of these properties to No Fill in the Colors section of the Toolbar or in the Color Mixer.

You can set specific sizes with a dialog box. Alt+click (Win) or Option+click (Mac) a rectangle or oval, set the values you want, and then click OK.

See Also

See “Changing Stroke and Fill Colors” on page 96 for information on changing shapes.



For Your Information

Creating Primitive Rectangles and Ovals

In addition to creating standard rectangles and ovals, you can now create Primitive rectangles and ovals (**New!**). A Primitive shape allows you to change their attributes in the Property Inspector. The Primitive shape tools allow you to specify the corner radius of rectangles, and the start and end angle and the inner radius of ovals using controls in the Property Inspector, which makes it easy to create pie wedges, round off corners, and other curved shapes. When either of the Primitive shape tools is selected, the Property Inspector retains the values of the last primitive object that you edited.

Using the Polystar Tool

Draw a Polygon or Star Shape

- 1 Click and hold the **Rectangle** tool in the Toolbar, and then point to **PolyStar Tool**.

The pointer becomes a crosshair that you can drag anywhere on the Stage.

- 2 Click **Options** in the Property Inspector.

TIMESAVER Press $\text{⌘} + \text{F3}$ (Mac) or $\text{Ctrl} + 3$ (Win) to open the Property Inspector.

- 3 Click the **Style** popup, and then select **Polygon** or **Star**.

- 4 Enter a value for the number of sides. You can create an object with up to 32 sides.

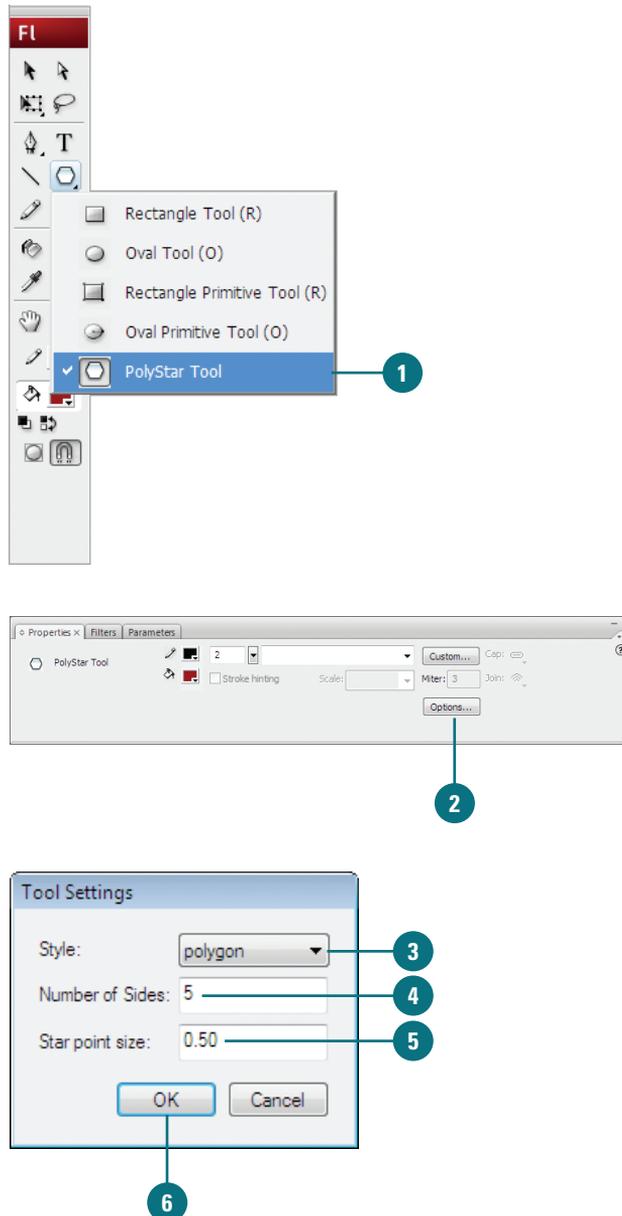
- 5 For the Star style, you can specify an additional option for your point size. You can enter a value ranging from .10 to 1.0 points.

- 6 Click **OK**.

See Also

See “Editing Strokes with the Ink Bottle” on page 100 for information on editing an object.

Working in much the same way as the Oval and Rectangle tools, the new Polystar tool allows you to easily create complex vector shapes. You can use this tool to create polygons and stars with up to 32 sides. Choose between creating a polygon or a star. Both styles have characteristics that can be adjusted in the Property Inspector before you draw the shape. Both the polygon and star style can have up to 32 sides, with the star style having an additional star point size that can be set. Experiment with several options to get the kind of shape you want.



Understanding Selections

When you create vector graphics in Flash, they are comprised of distinct elements that can be selected separately or as a whole with a variety of selection tools. The type of editing you need to perform determines which tool you use. For example, a simple rectangle drawn is comprised of four line segments that surround the contour of the shape and one fill in the center. Each of these five parts can be selected in tandem or individually with the Arrow Selection tool. Likewise, any stroke that intersects another stroke or fill splits them into distinct elements that can be selected separately.

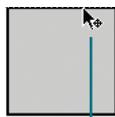
In Normal selection mode, holding down the Shift key adds to the selection any additional elements you click on. You can change this option in the General tab of the Preferences window so that it isn't necessary to use the Shift key to perform this function.

Double-click any stroke to select other strokes connected to it or double-click a fill to select it and any strokes that touch or intersect it. To select an entire shape (strokes and fills) or just a portion of it, you can drag a selection rectangle with the Arrow tool or draw a freeform selection area with the Lasso tool. These methods work best for very complex shapes with many intersecting strokes and fills, or if there is only a portion of the shape you need to edit.

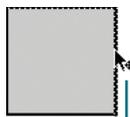
The Sub-Selection and Pen tools allow you to select the entire shape (strokes and fills) simultaneously, making its anchor points and Bézier handles visible for editing. Use this method when you need to edit the contours of the shape with precision.

For information on making selections using the Object Drawing model, see "Working with Object Drawing, on page 122.

Selection Examples



Each element (4 lines and a fill) can be selected separately.



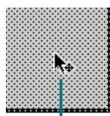
Shift-select to add elements to the selection.



Single line segment.



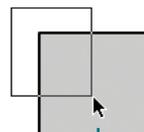
When two line segments intersect, four new line segments are created that can be selected separately.



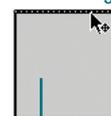
Double-click a fill to select it and any connected strokes.



Double-click a stroke to select all connected strokes.



Click and drag to select a portion of the shape.



Only a portion of the fill and strokes is selected.

Selecting Strokes with the Arrow Tool

Select a Stroke with the Arrow Selection Tool

- 1 Click the **Arrow** tool in the Toolbar. The pointer becomes an arrow.

TIMESAVER Press *V* to select the Arrow tool.

- 2 Position the arrow on the edge of the shape.

Notice that Flash displays a small curved line icon when you position the arrow over a Curve point and a corner line icon when over a Corner point.

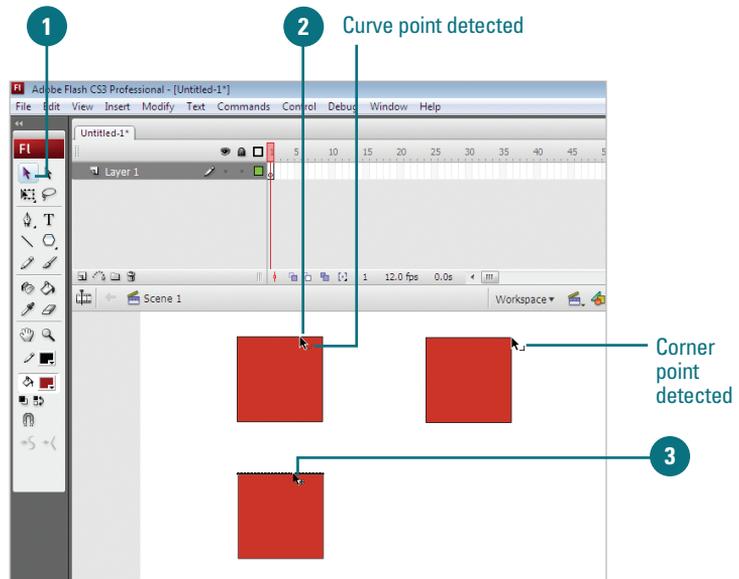
- 3 Click on any part of the stroke.

Flash only selects a portion of it. This is because what appears to be one whole shape is actually a series of lines connected by points and each can be selected separately.

See Also

See “Working with Object Drawing” on page 122 for information on selecting overlapping objects on the same layer.

There are a variety of ways to select objects in Flash. You can select an object's stroke or fill or both. You can use the Arrow tool to select parts of the object or drag over a portion of it to create a selection rectangle. The Property Inspector displays the properties of what is selected including Stroke line weight and style, Fill color, pixel dimensions, and X and Y coordinates. When a stroke or fill is selected, a dotted pattern appears over it indicating it has been selected. This makes editing and modifying graphics simple and illustrates the versatility of the vector-based graphics model used in Flash.



Select Multiple Stroke Segments

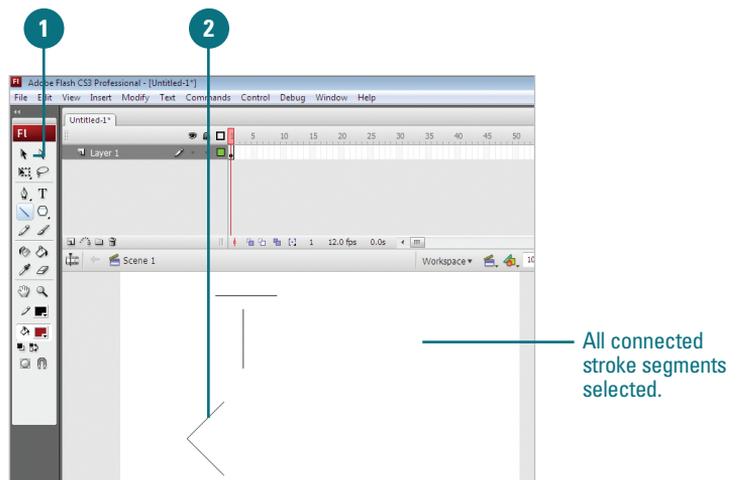
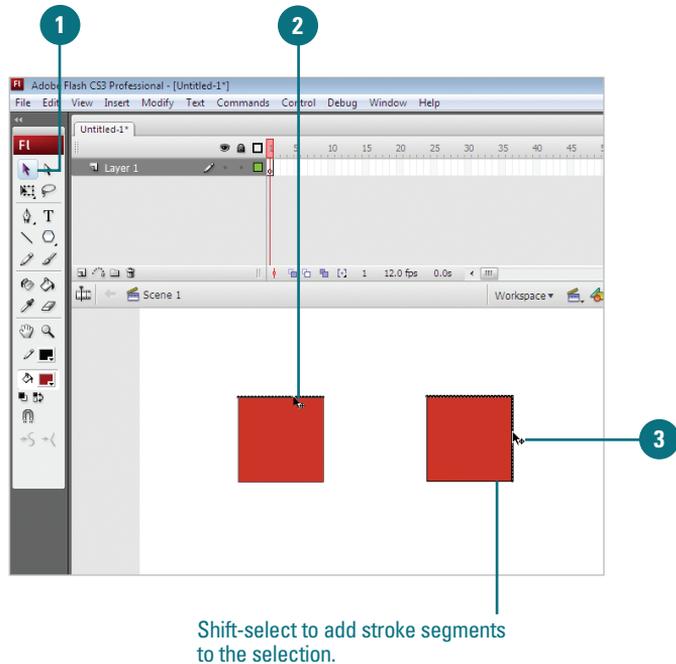
- 1 Click the **Arrow** tool in the Toolbar.
The pointer becomes an arrow.
TIMESAVER Press *V* to select the Arrow tool. You can temporarily switch to the Arrow tool from any other tool by pressing **⌘** (Mac) or **Ctrl** (Win).
- 2 Click on any part of the stroke to select one segment.
- 3 Hold down the Shift key, and then click other strokes to add them to the selection.

Did You Know?

You can turn off the Shift-select feature in the General tab of the Preferences dialog box. When this feature is disabled, you can add to the selected segments by clicking them without the need to hold down the Shift key. In this mode, holding the Shift key and clicking a selected stroke segment deselects that segment.

Select Connected Stroke Segments

- 1 Click the **Arrow** tool in the Toolbar.
The pointer becomes an arrow.
- 2 Double-click any part of the segment or stroke to select all connected strokes.



Selecting Strokes and Fills with the Arrow Tool

Select Fills with the Arrow Selection Tool

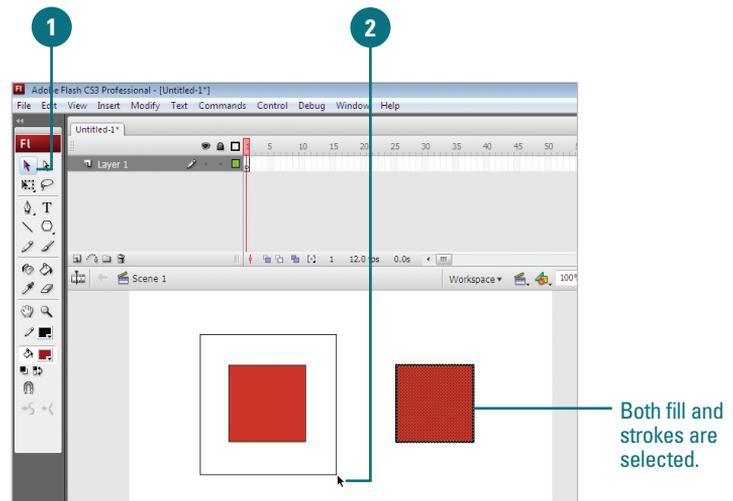
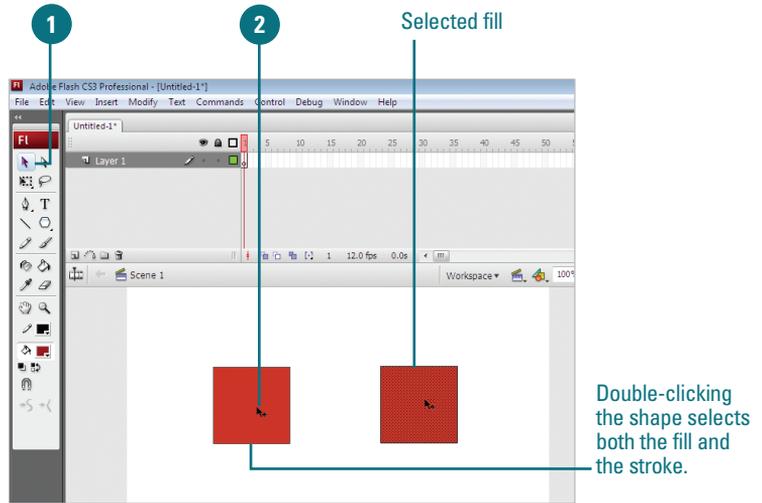
- 1 Click the **Arrow** tool in the Toolbar.
The pointer becomes an arrow.
- 2 Position the arrow in the Fill area or the center of the shape and click.

The fill becomes highlighted with a dotted pattern to indicate it has been selected. Hold down the Shift key to add other strokes and fills to the selection.

Select with a Selection Rectangle

- 1 Click the **Arrow** tool in the Toolbar.
The pointer becomes an arrow.
- 2 Click on the Stage above and to the left of the shape you want to select and drag to create a Selection Rectangle, and then release the mouse when the bounding box fully encloses the shape.

The Arrow tool provides the most simple and versatile procedures for selecting objects in Flash. The Arrow tool selects anything you click on (provided it isn't on a locked layer). Double-clicking shapes with the Arrow tool selects all fills and strokes that are connected. Shift-selecting allows you to add to the selection only what you need. Alternately, dragging a selection rectangle on the Stage with the Arrow tool creates a bounding box that selects anything you drag it over. This bounding box method is the most reliable technique for selecting very complex objects with many intersecting strokes and fills.



Making Selections with the Lasso Tool

Select with the Lasso Tool

- 1 Click the **Lasso** tool in the Toolbar.
TIMESAVER Press *L* to select the Lasso tool.
- 2 Draw around the shapes you want to select.
Flash draws a preview of the selection lasso as you draw.
- 3 To complete the selection, return to the point where you started.

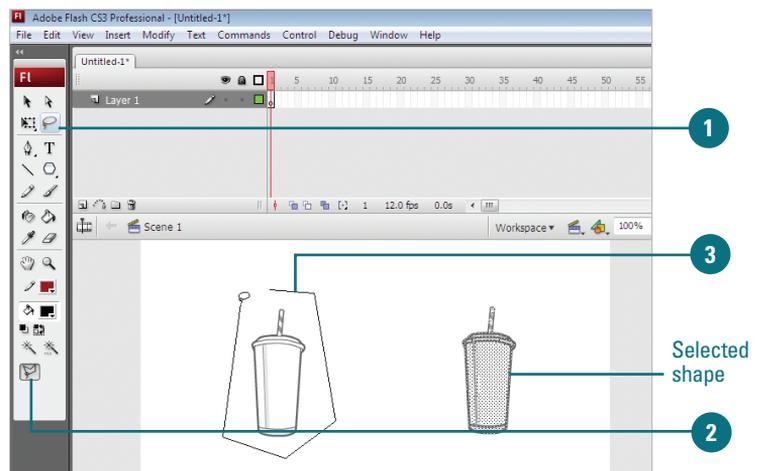
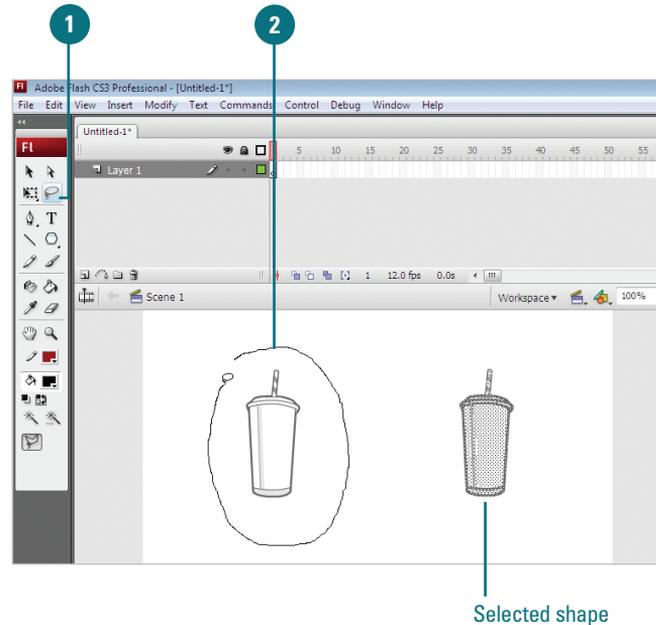
Did You Know?

You can combine several ways to select single or multiple objects. Holding the Shift key adds line segments and fills to the selection. Shift-selecting items that have already been selected deselects them.

Select with the Lasso Tool in Polygon Mode

- 1 Click the **Lasso** tool in the Toolbar.
- 2 Click the **Polygon Mode** button in the Options area of the Toolbar.
- 3 Click near the area you want to select. Move the pointer and click again. Keep clicking until the object or portion you want to select is surrounded.
- 4 Double-click to complete the selection.

Use the Lasso tool when you want to select shapes that are too close to shapes you don't want to select. This tool allows you to draw around the shape, selecting everything contained in the shape you draw. In the default mode, you can draw a freeform lasso around the object you want to select. You can also choose the Polygon mode for defining the selected area with a series of straight-line segments.



Zooming In and Out with the Magnifying Glass

Zoom In

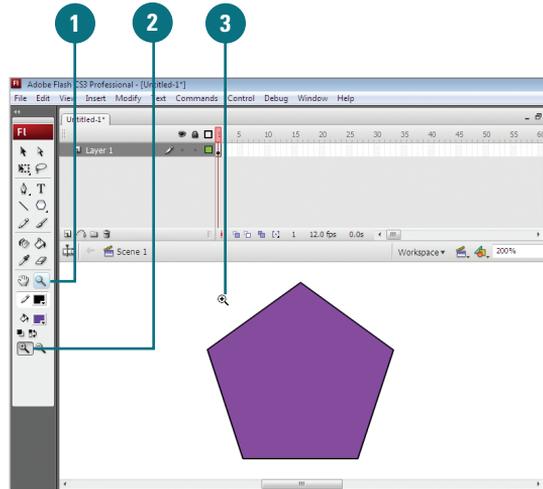
- 1 Click the **Zoom** tool in the Toolbar.
- 2 Click the **Enlarge** button in the Options area of the Toolbar.

The pointer becomes a magnifying glass with a plus (+) symbol in it.

- 3 Click on the area of the Stage you want to zoom into.

TIMESAVER Press **Z** to select the Zoom tool. To temporarily toggle between the Enlarge and Reduce Modifiers buttons in the Options area of the Toolbar, press **Option (Mac)** or **Alt (Win)**.

Because the Stage and Work Area in Flash share the same space with a variety of panels, palettes and windows, it is often necessary to change the magnification level. You can use the Magnifying Glass to zoom out and see the entire piece or zoom in to do more detailed work on a small portion. The tool is made up of two modifiers: a plus (+) symbol in the circle indicates enlargement of the Stage and a minus (-) indicates reduction. Flash allows magnification levels from 8 percent to 200 percent.

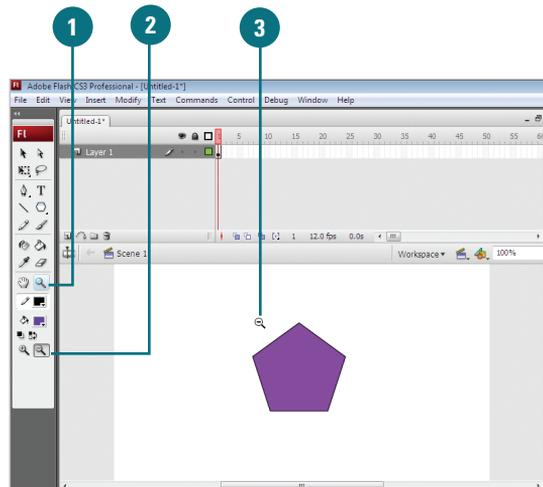


Zoom Out

- 1 Click the **Zoom** tool in the Toolbar.
- 2 Click the **Reduce** button in the Options area of the Toolbar.

The pointer becomes a magnifying glass with a minus (-) symbol in it.

- 3 Click on the area of the Stage you want to zoom out from.

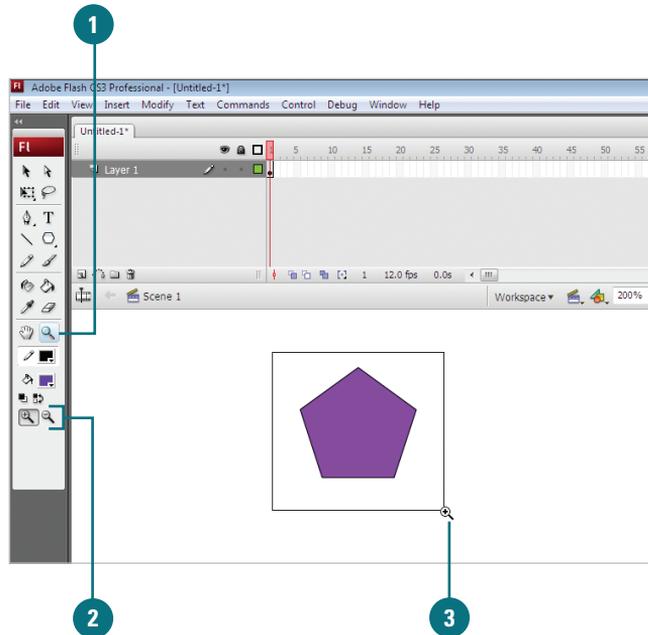


Zoom Into a Specific Area by Dragging on the Stage

- 1 Click the **Zoom** tool in the Toolbar.
- 2 Click the **Reduce** or **Enlarge** button in the Options area of the Toolbar.
- 3 Click on the area of the Stage you want to magnify and drag the pointer.

Did You Know?

You can change the magnification level in several places. The Zoom Control field in the top right hand corner of the Stage allows you to enter a value or access a popup with various magnification levels. You can also change the magnification submenu in the View menu or use the keyboard shortcuts $\text{⌘} + -$ (Mac) or $\text{Ctrl} + -$ (Win) to zoom out, and $\text{⌘} + +$ (Mac) or $\text{Ctrl} + +$ (Win) to zoom in. Quickly switch to 100 percent magnification by pressing $\text{⌘} + 1$ (Mac) or $\text{Ctrl} + 1$ (Win).



Moving Around with the Hand Tool

Move the Stage View

- 1 Click the **Hand** tool in the Toolbar.

The pointer becomes a small hand that moves the entire Stage revealing other parts of the Stage as you drag.

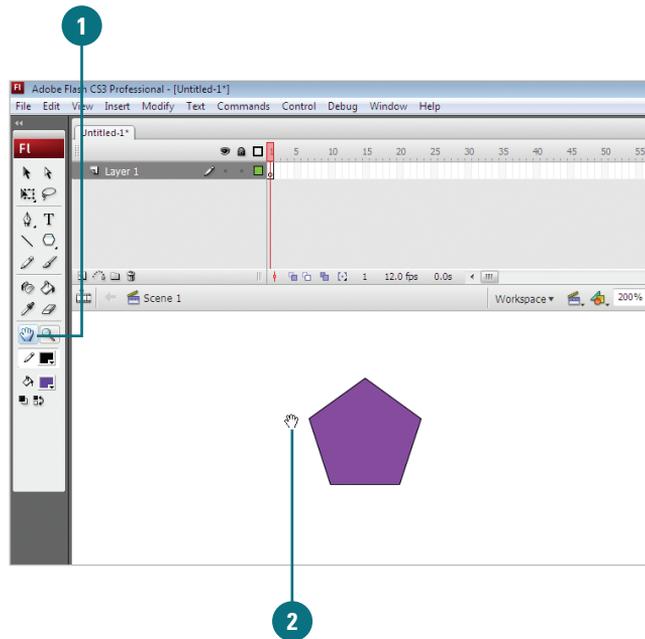
TIMESAVER Pressing the *space bar* temporarily changes the active tool to the Hand tool. Continue holding as you drag.

- 2 Click and drag the Stage to move the view.

Did You Know?

You can turn off the visibility of the Work Area (the gray space around the Stage) and quickly change the View scale to 100 percent. Toggle the Work Area option in the View menu or use the keyboard shortcut **⌘+Shift+W** (Mac) or **Ctrl+Shift+W** (Win). This is a great way to temporarily see what is viewable in the exported Flash file (.swf) when you are working with large images that extend past the Stage boundaries.

At certain magnifications, parts of the Stage may not be viewable. Use the Hand tool to quickly move to different parts of the Stage without having to change the magnification level. The Stage is the active area of your movie, the only area that will be visible in the exported Flash movie. The gray area around the Stage is the Work Area. The Hand tool allows you to easily access artwork or other objects contained in this space if you are doing detailed work at high levels of magnification.



For Your Information

Using the Pasteboard Work Area

You can use the work area (called the **Pasteboard**) around the Stage to store artwork and other objects, such as components, without having them be visible in the published movie. The objects might not be visible on the Stage, but they contribute to the overall file size. It is a good idea to clean up your files before exporting the final movie. You can clean up by removing any artwork outside the boundaries of the Stage or by putting them on a guide layer.

Displaying Rulers



Show and Hide Rulers

- 1 Click the **View** menu, and then click **Rulers**.

A check mark next to the option means its visibility is enabled.

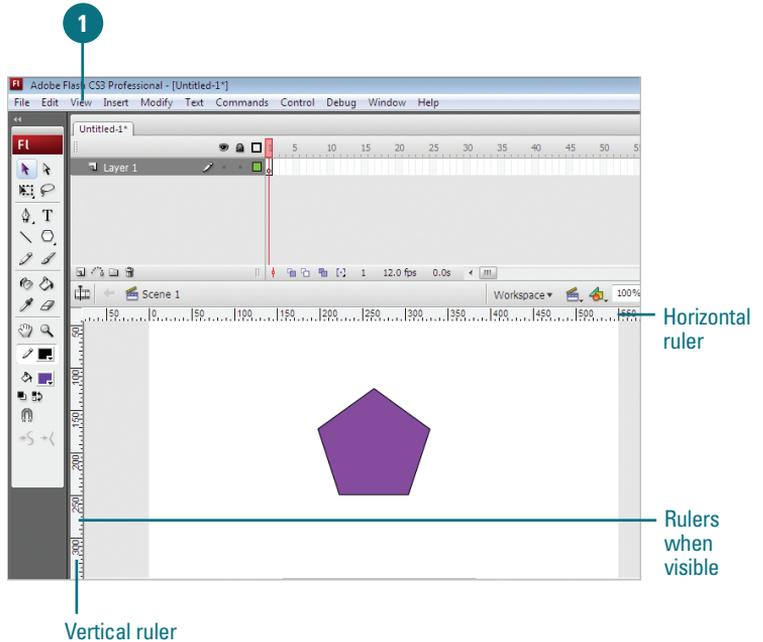
- 2 To hide rulers, click the View menu, and then click Rulers to remove the check mark and hide the rulers.

TIMESAVER Press **+Option+Shift+R (Mac)** or **Ctrl+Alt+Shift+R (Win)** to turn the ruler on and off.

Did You Know?

You can change the unit of measure displayed on the Rulers. Click the Modify menu, click Document, click the Ruler Units popup, select a unit of measure, and then click OK.

Ruler bars are located on the top and left sides of the Stage and serve several purposes. They let you measure the width and height of Flash elements and they let you place guides on the screen to control placement of objects on the Stage. In all, Rulers serve a very important role. When you display rulers, you can use guides to help you correctly align objects with other objects. By using guides, you have access to precise alignment systems. To use the guides, the ruler bars must first be visible. When you no longer need the rulers, you can hide the rulers to free up more workspace.



Using Grids and Guides

Show and Hide Grids

1 Click the **View** menu, point to **Grid**, and then click **Show Grid**.

- ◆ You can also right-click the Stage, point to **Grid**, and then click **Show Grid**.

A check mark next to the option means its visibility is enabled.

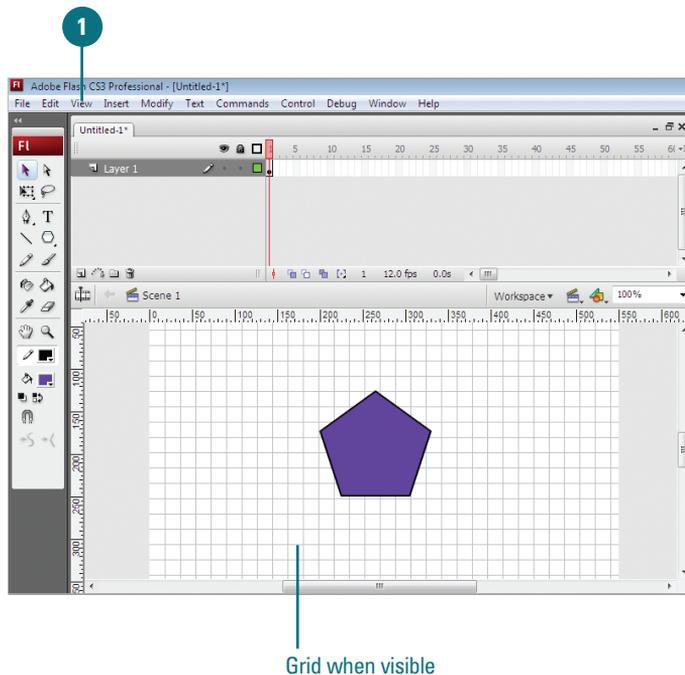
2 To hide the grid, click the **View** menu, point to **Grid**, and then click **Show Grid** to remove the check mark and hide the grid.

TIMESAVER Press **⌘+apostrophe (')** (Mac) or **Ctrl+apostrophe (')** (Win) to toggle Grid visibility on and off.

See Also

See "Modifying Grid and Guide Settings" on page 92 for information on changing settings.

Flash comes with guides, grids, and rulers to help you lay out artwork and objects with precision. A grid is a series of crisscrossed lines that aid in aligning objects to each other on the Stage. Guides and grids are modifiable. You can change their visibility, position, color, and frequency. These items are invisible by default, but they can be easily turned on and adjusted. Though you see them in the Flash development environment, they are invisible on export. Use guides to align art and objects to each other on vertical or horizontal paths, or turn on the grid for use in designing a layout that is proportional and balanced.



Create Guides

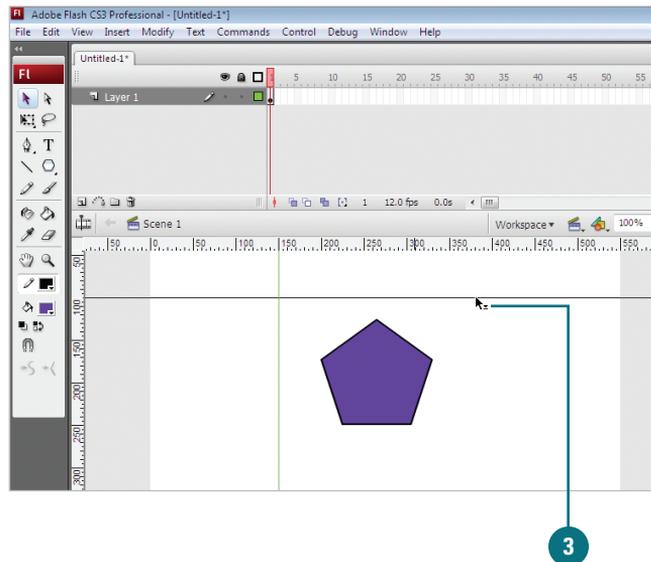
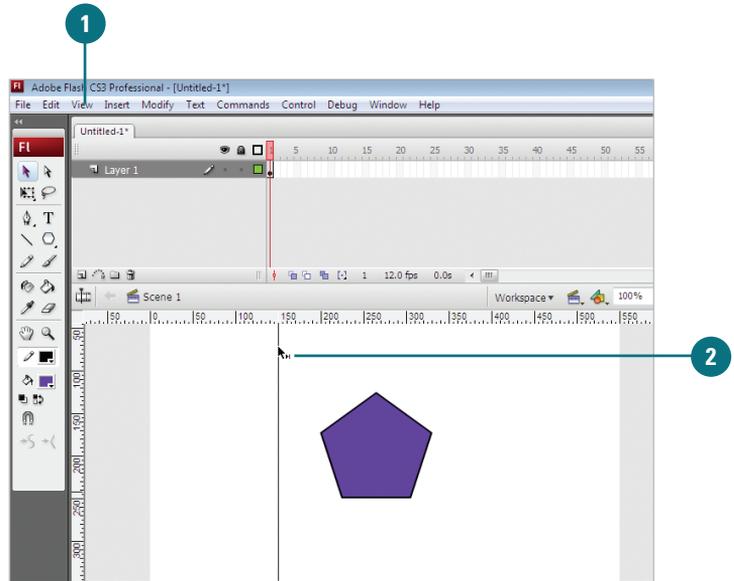
- 1 Click the **View** menu, and then click **Rulers** to display rulers.
- 2 Click on the vertical ruler on the left side of the work area with the Arrow pointer and drag to the right, and then release the mouse where you want to place the vertical guide.
- 3 Click on the horizontal ruler at the top of the work area with the Arrow pointer and drag down, and then release the mouse where you want to place the horizontal guide.
- 4 Reposition the guides by selecting them with the pointer.

Did You Know?

You can turn guide visibility on and off, lock guides, and enable or disable snapping to guides. Click the View menu, and then click Guides to access these options or use the following keyboard shortcuts: $\text{Cmd}+\text{H}$; (Mac) or $\text{Ctrl}+$; (Win) toggles between showing and hiding guides $\text{Option}+\text{Cmd}+\text{H}$; (Mac) or $\text{Ctrl}+\text{Alt}+$; (Win) locks and unlocks guides $\text{Shift}+\text{Cmd}+\text{H}$; (Mac) or $\text{Ctrl}+\text{Shift}+$; (Win) to turn Snapping on and off.

See Also

See “Displaying Rulers” on page 89 for information on showing and hiding rulers.



Modifying Grid and Guide Settings

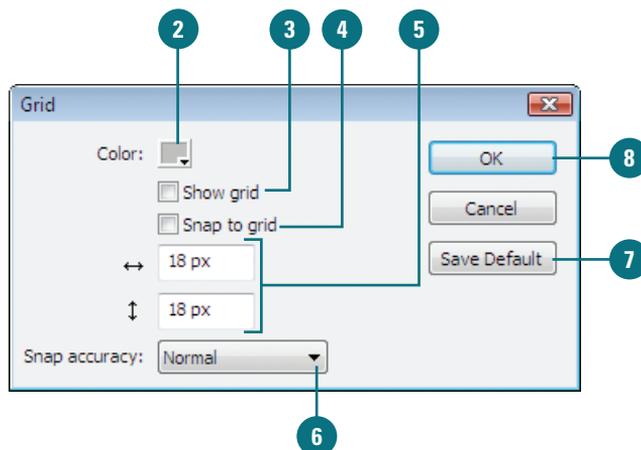
Modify Grid

- 1 Click the **View** menu, point to **Grid**, and then click **Edit Grid**.

TIMESAVER Press *Option+⌘+G (Mac) or Ctrl+Alt+G (Win)* to quickly access the Grid dialog box.

- 2 Click the **Color** popup, and then click a grid line color.
- 3 Select or clear the **Show Grid** check box to show or hide grid.
- 4 Select or clear the **Snap To Grid** check box to enable or disable snapping.
- 5 Enter values for horizontal and vertical dimensions for the grid lines.
- 6 Click the **Snap Accuracy** popup, and then select a level of sensitivity for snapping to the grid. Select from **Must Be Close**, **Normal**, **Can Be Distant**, and **Always Snap**.
- 7 To make the current grid settings the default for new Flash files, click the **Save Default** button.
- 8 Click **OK**.

The need for grids and guides varies depending upon the type of document you are working on. They are useful for aligning text and graphics to interface elements and are an invaluable tool for creating a well composed and proportioned layout. Every project is different and has different requirements, so Flash allows the display, behavior, and characteristics of guides and grids to be altered to fit your needs. They are only visible in the Flash development environment, and are not exported in the Flash movie.



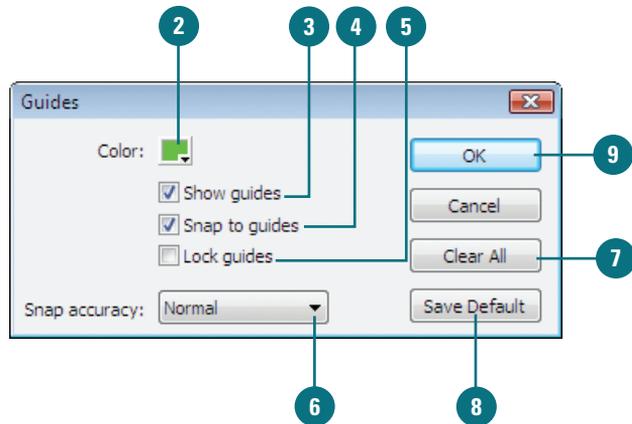
Modify Guides

- 1 Click the **View** menu, point to **Guides**, and then click **Edit Guides**.

TIMESAVER Press *Option+Shift+(⌘)+G (Mac) or Ctrl+Alt+Shift+G (Win)* to quickly access the Guides dialog box.

- 2 Click the **Color** popup, and then click a guide line color.
- 3 Select or clear the **Show Guides** check box to show or hide guides.
- 4 Select or clear the **Snap To Guides** check box to enable or disable snapping.
- 5 Select or clear the **Lock Guides** check box to enable or disable editing of guides.
- 6 Click the **Snap Accuracy** popup, and then select a level of sensitivity for snapping to the guides. Select from Must Be Close, Normal, Can Be Distant.
- 7 To remove all guides from the active scene, click **Clear All**.
- 8 To make the current guides the default guides for new Flash files, click **Save Default**.
- 9 Click **OK**.

TIMESAVER Press *(⌘)+;* (Mac) or *Ctrl+;* (Win) to toggle between showing and hiding guides; press *Option+(⌘)+;* (Mac) or *Ctrl+Alt+;* (Win) to lock and unlock guides; or press *Shift+(⌘)+;* (Mac) or *Ctrl+Shift+;* (Win) to turn Snapping on and off.



Using Snap Align

Enable Snap Align

- 1 Click the **View** menu, point to **Snapping**, and then click **Snap Align**.

A check mark appears next to the menu item when Snap Align is enabled.

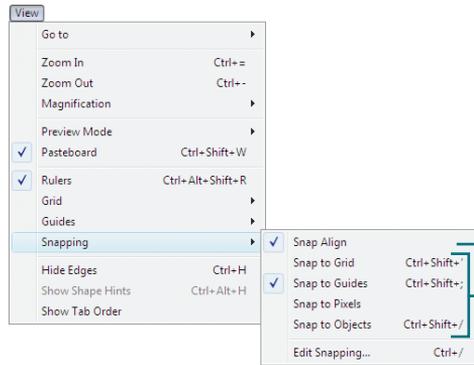
- 2 Drag an object on the Stage.

Depending on the behaviors set in the Snap Align Settings dialog box, gray dashed lines appear when the edges or center vertices of objects move to within a certain pixel distance.

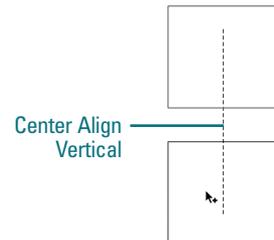
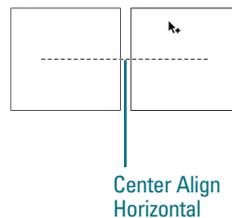
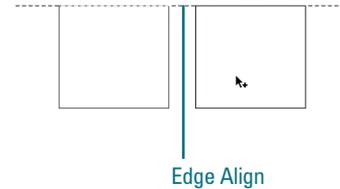
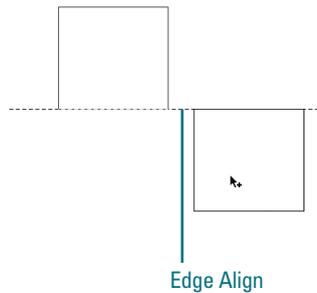
Did You Know?

You can change snapping tolerances. Click the Flash (Mac) or Edit (Win) menu, and then click Preferences. Click the Drawing category, use the Connect Line popup to select an option, and then click OK.

Snap Align is a new feature that enables dynamic alignment of art and objects on the Stage. Simply drag an object on the Stage and dashed lines appear that aid you in aligning to the edge or center vertices of other objects on the Stage. In the Edit Snapping dialog box you can enable and disable snap options, set the distance objects to be from the movie borders and from each other before they snap, and save the settings as default. Additionally, you can choose to snap objects to edges or vertical and horizontal centers. Using the Snap Align feature enables you to lay out artwork more precisely and dynamically.

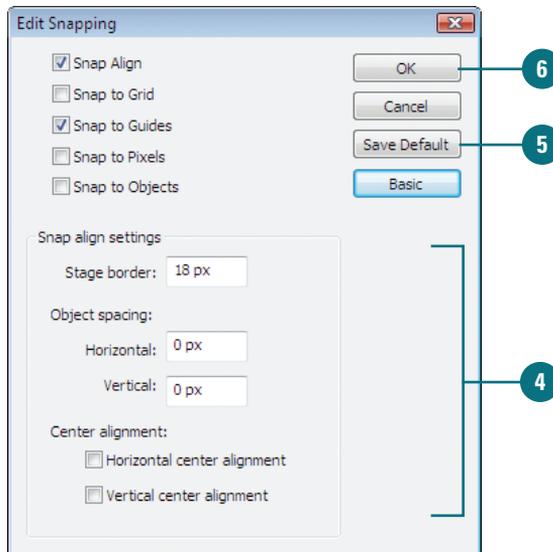
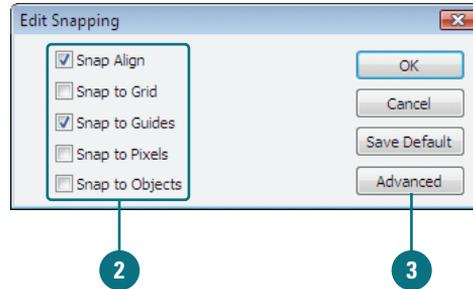


1 Snap align to other items: Grid, Guides, Pixels, and Objects.



Configure Snap Align and Save Defaults

- 1 Click the **View** menu, point to **Snapping**, and then click **Edit Snapping**.
- 2 Select the snap check box options you want to turn on.
- 3 Click **Advanced**.
- 4 Select from the following options:
 - ◆ **Movie Border.** Enter a value for the distance an object needs to be before it will snap to the boundaries of the movie (in pixels).
 - ◆ **Snap Tolerance.** Enter a value for horizontal and vertical edge tolerance (in pixels).
 - ◆ **Center Alignment.** Select the check boxes to center alignment on horizontal or vertical vertices or both.
- 5 To make the snap align setting the default for future use, click **Save Default**.
- 6 Click **OK**.



For Your Information

Snapping to an Object

You can use the Snap to Object command in the View menu or use the Snap option for the Selection tool on the Toolbar. If the Snap option is enabled, a small black ring appears under the pointer when you drag an object. The small ring changes to a larger ring when the object is within snapping distance of another object.

Changing Stroke and Fill Colors

Change the Stroke Color

- 1 Click the **Arrow** tool in the Toolbar.
- 2 Select the stroke of the shape by double-clicking it.
- 3 Click the **Stroke** color box in the Toolbar.
- 4 Select a new color from the palette.

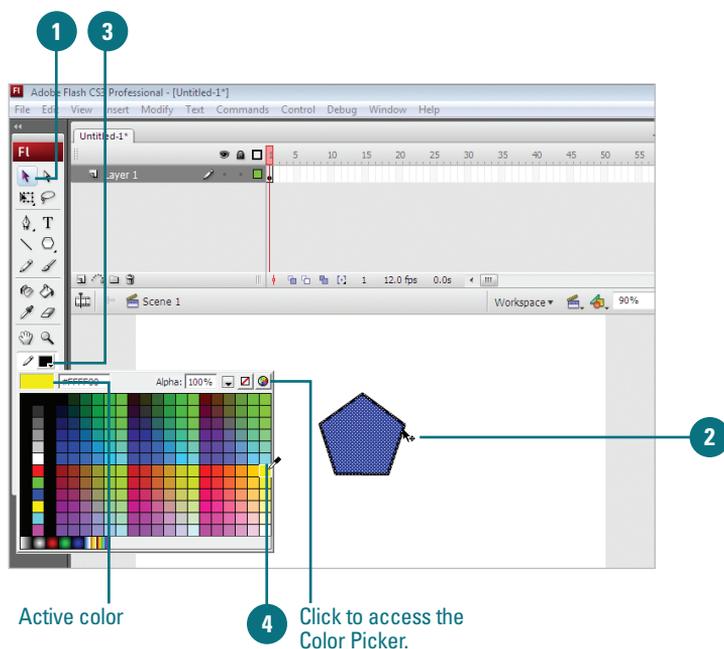
Did You Know?

You can change the stroke color in three other places. Stroke color boxes are also located in the Property Inspector, the Color Mixer panel, and the Swatches panel. In all cases, select the stroke you want to change and choose a new color from any of the palettes.

You can change the line width and style of a stroke or set the stroke color to None in the Property Inspector.

Click the stroke you want to change to select it, and then select any of the options in the Property Inspector. Setting the stroke color to None removes the stroke from the shape.

Artwork created in Flash can have strokes and fills. Strokes and fills behave differently and are edited in different ways. A stroke is an outline. It describes the edges of a shape or it can be a simple line. You can create strokes with the Line tool or the Pencil tool. A fill is a solid shape, often contained or surrounded by a stroke. It is the surface area of a shape and can be a color, gradient, texture, or bitmap. Fills can be created with the Paintbrush tool and the Paint Bucket tool. The Oval, Rectangle, and Pen tool can create shapes with either a stroke or a fill, or both. You can edit the characteristics of strokes and fills, such as color, in several ways. If the shape is selected on the Stage, a color change to a stroke or fill can be made in any of the color palettes. Because Flash uses vectors to describe shapes, you can change their properties as much as you want without any loss in quality. It is important to grasp the concept behind them because they are the basis for drawing in Flash.



Change the Fill Color

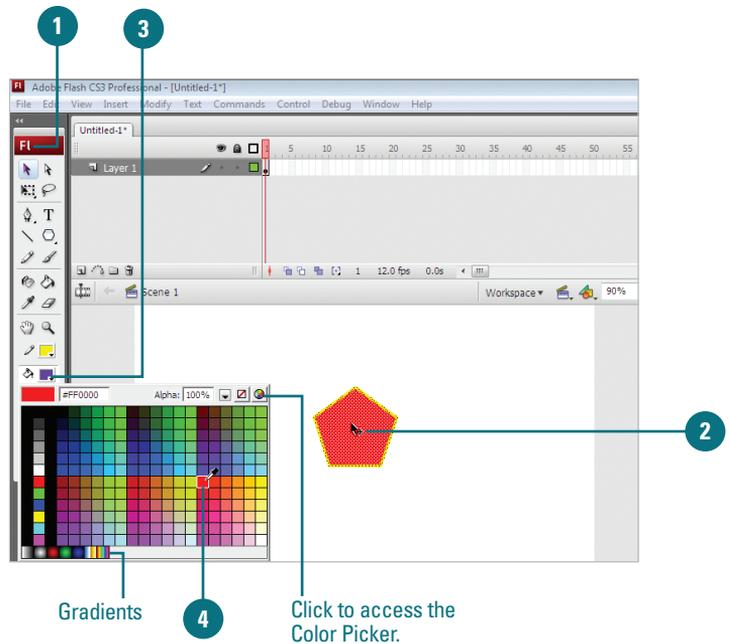
- 1 Click the **Arrow** tool in the Toolbar.
The pointer becomes an arrow.
- 2 Click the fill of the shape to select it.
This is the area inside the stroke.
- 3 Click the **Fill** color box in the Toolbar.
- 4 Select a new color from the palette.

Did You Know?

You can change the fill color in three other places. Fill color boxes are also located in the Property Inspector, the Color Mixer, and the Swatches panel. Just select the fill and choose a new color from one of the palettes by clicking on a new color box.

See Also

See “Editing Fills with the Paint Bucket” on page 101 for information on changing the fill color.



Creating Custom Colors

Create a Custom Color by Entering a Value

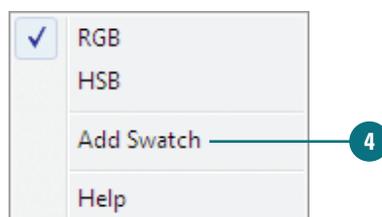
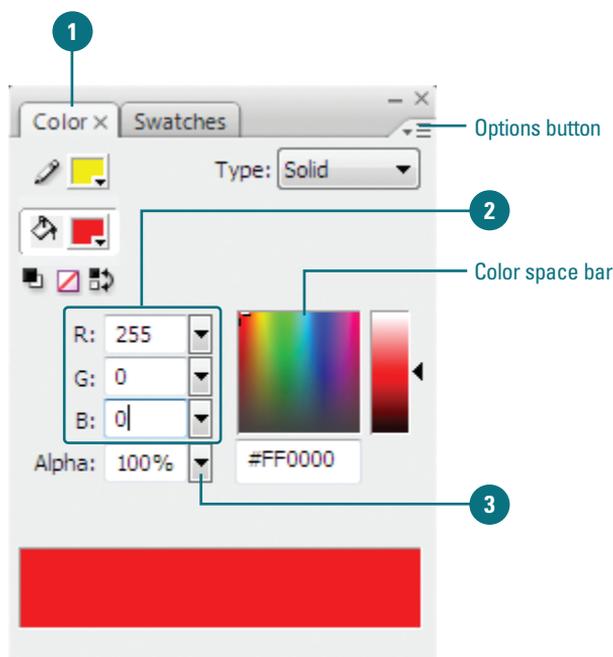
- 1 Open or expand the Color Mixer panel.
- 2 Enter values between 0 and 255 in the RGB numeric entry boxes.
- 3 Enter an alpha value between 0 and 100.
- 4 Click the **Options** button in the panel, and then click **Add Swatch**.

Did You Know?

You can alter the RGB values with the sliders located to the right of the numeric entry boxes. Click the small triangles, and then drag the sliders that appear. Additionally, you can drag the cursor over the Color space bar at the bottom of the Color Mixer panel to change the color interactively.

You can also specify a color using a hexadecimal number in the Color Mixer. A hexadecimal number is an internal computer numbering scheme that is used to identify colors in a color palette.

Each Flash document has its own color palette. The color palette displays as swatches when you access a color box or panel. The default color palette is the Web-safe palette of 216 colors. Flash allows you to edit and create new colors for strokes and fills in several ways in the Color Mixer panel. You can alter a color's RGB values (assigning it different levels of Red, Green or Blue), Hue, Saturation, Brightness, and Alpha (transparency). You can accomplish this by using sliders, dragging on a color-space, or entering a numeric value that corresponds to a specific color. In each case you can save your color into the palette for easy access.

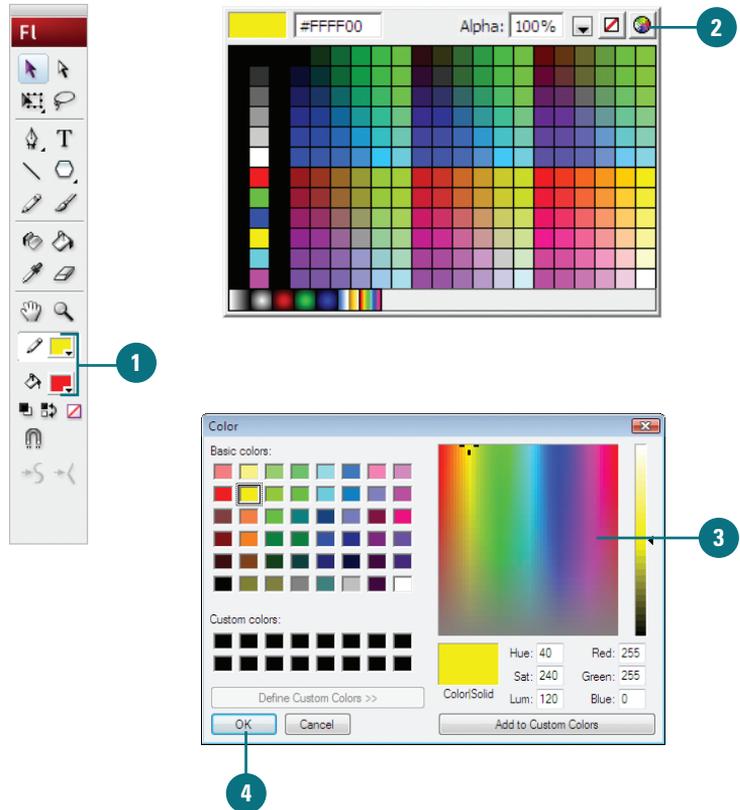


Create a Custom Color with the Color Picker

- 1 Click a **Stroke** or **Fill** color box in the Toolbar or the Property Inspector.
- 2 Click the **Color Wheel** button to the far right of the palette.
- 3 Click a color from one of the available pickers (Mac) or from the **Color Window** (Win).
- 4 Click **OK**.

Did You Know?

You can import and export solid and gradient color palettes between Flash files and other applications. You can share color palettes between applications, such as Adobe Fireworks and Adobe Photoshop. Click the Window menu, and then click Color Swatches. Click the Options button on the panel, and then click Add Colors or Replace Colors to import colors from a color palette, or click Save Colors to export as a color palette.



For Your Information

Working with Color Palettes

Each Flash file stores its own color palette, Web safe 216 by default. If you change color in the default color palette, you can save the new palette as the default or change back to the Web safe 216 default. To view the color palette, click the Window menu, and then click Color Swatches. To load or save the default palette, click the Options button in the Color Swatches panel, and then click Load Default Colors or Save As Default. To reload the Web-safe color palette, click the Options button, and then click Web 216.

Editing Strokes with the Ink Bottle

Use the Ink Bottle

1 Select a stroke on the Stage, and then change Stroke attributes in the Property Inspector.

2 Click the **Ink Bottle** tool in the Toolbar.

The pointer becomes a small ink bottle.

TIMESAVER Press *S* to select the Ink Bottle tool.

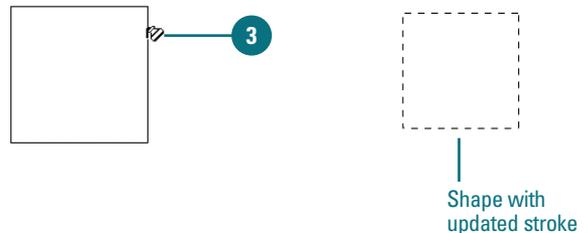
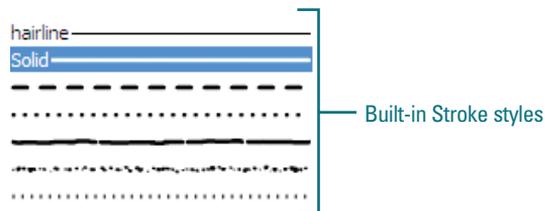
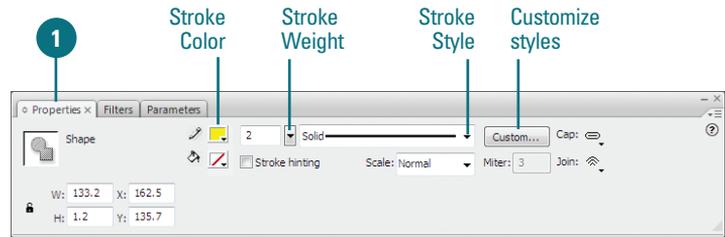
3 Click on the stroke of the shape to update it with the new attributes.

The stroke updates to the new color.

Did You Know?

You can click anywhere on the shape with the Ink Bottle to change the stroke. If the object on the Stage is selected (stroke and fill), click down with the Ink Bottle tool to update its stroke.

There are a number of ways to change the stroke of an object. You can select the stroke and change its characteristics in the Property Inspector, the Swatch palettes, and the Color Mixer. If you need to apply the stroke properties of one object to that of another, use the Ink Bottle tool. The Ink Bottle tool holds the properties you've set for strokes in any of the palettes. You can click any object on the Stage to change the properties of its stroke (color, line weight and style) or add a stroke to an object that doesn't have one.



Editing Fills with the Paint Bucket

Use the Paint Bucket

1 Change the **Fill** color box in either the Property Inspector, the Colors area of the Toolbar, or the Color Mixer.

2 Click the **Paint Bucket** tool in the Toolbar.

The pointer becomes a small paint bucket.

TIMESAVER Press *K* to select the Paint Bucket tool.

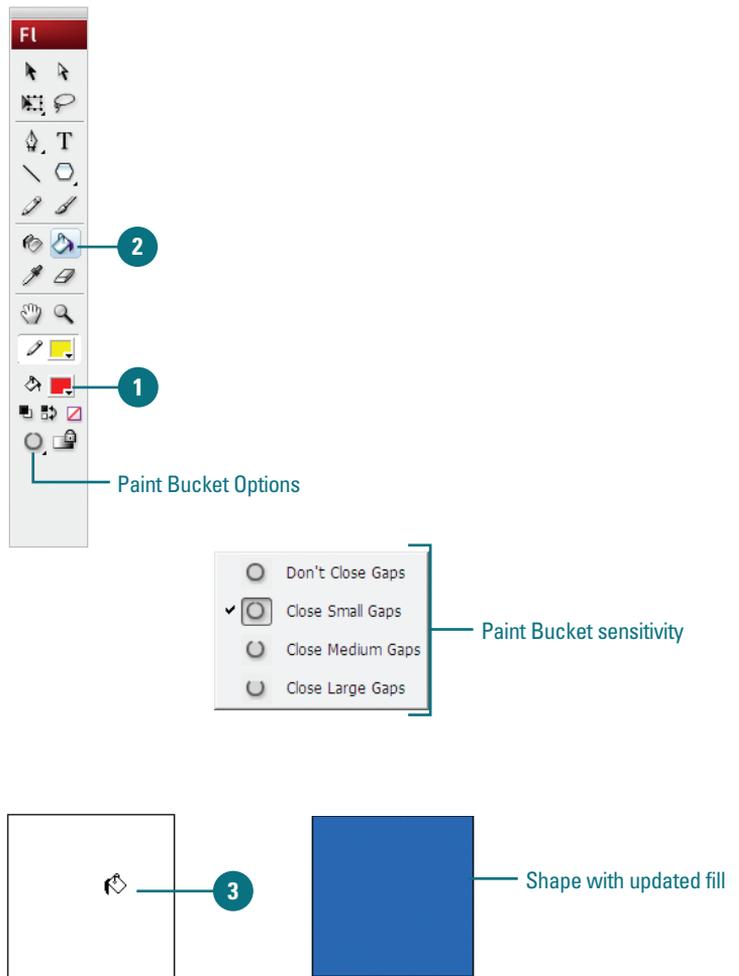
3 Click in the fill of a shape on the Stage.

The fill updates to the new color.

Did You Know?

You can set the sensitivity of the Paint Bucket tool in the Options areas of the Toolbox. These settings allow the Paint Bucket tool to close gaps in a shape (such as a break in the stroke line) and adjust how large or small a gap needs to be before Flash will close it.

You can change the fill of an object with the Paint Bucket tool. The Paint Bucket stores the fill color you've set in the Toolbar or in the Property Inspector. You can change the fill color of any existing shape on the Stage by touching down on the shape with this tool. You can also add a fill to any shape that has a closed stroke. After you select the Paint Bucket tool, you can select Paint Bucket sensitivity options located at the bottom of the Toolbar.



Editing Strokes and Fills with the Eyedropper

Use the Eyedropper Tool to Edit Strokes and Fills

- 1 Click the **Eyedropper** tool in the Toolbar.

The pointer becomes an eyedropper.

TIMESAVER Press *I* to select the Eyedropper tool.

- 2 Position the eyedropper over the stroke or fill of a shape on the Stage.

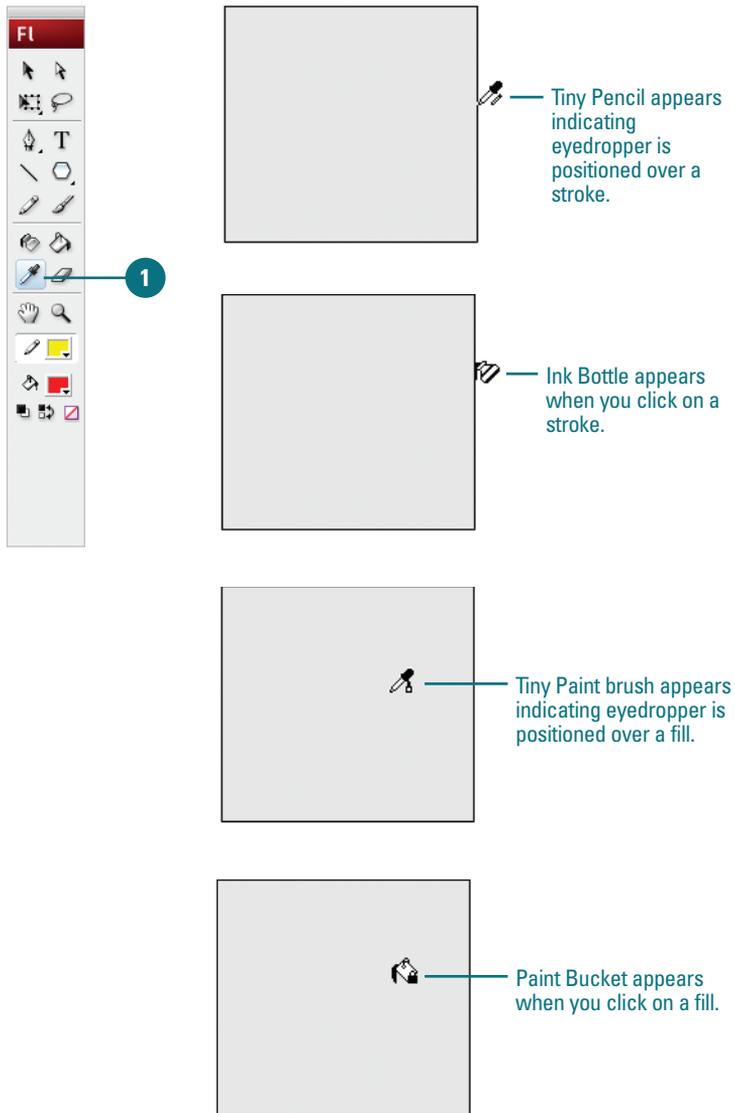
- ◆ **Strokes.** When you are positioned over a stroke, a tiny pencil appears next to the tool. When you click on the stroke the Eyedropper becomes an Ink Bottle.

- ◆ **Fills.** When you are positioned over a fill, a tiny paint brush appears next to the tool. When you click on the fill the Eyedropper becomes a Paint Bucket.

- 3 Click on another shape's stroke or fill to transfer the selected attributes.

The stroke or fill updates to the new color.

The Eyedropper tool allows you to select the attributes of a shape such as fill and stroke color, and line weight and style, and then transfer them to other shapes. This tool detects whether you are selecting a stroke or a fill, and then changes into the Ink Bottle (when selecting strokes) or the Paint Bucket (when selecting fills). Instead of taking several steps to copy attributes from one shape to another, the Eyedropper provides a quick means for storing and transferring attributes between editable shapes.



Creating Gradients

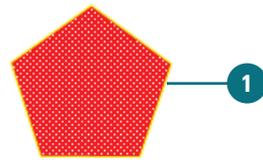
Create a Multi-Color Gradient

- 1 With the **Arrow Selection** tool, select the fill or stroke of a shape on the Stage.
- 2 In the Color Mixer panel, click the **Fill Style Type** popup, and then click **Linear** or **Radial**.
- 3 Click the **Overflow** popup, and then select the gradient overflow style you want to control colors past the limits of the gradient when publishing for Flash Player 8 (**New!**).
- 4 Position the pointer on the Gradient bar to display a plus (+) sign next to the pointer.
- 5 Click in the Gradient bar to create a color proxy indicated by a little box with a triangle on top.

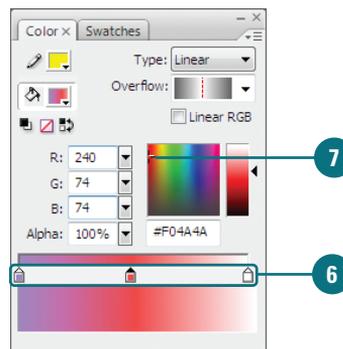
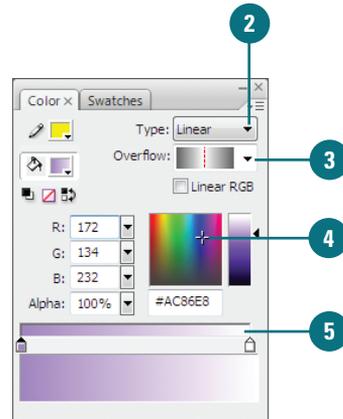
TIMESAVER To remove a proxy color indicator, drag it down.

- 6 Click one of the color proxy indicators to select it.
- 7 Click a new color from the Color Picker below.
- 8 Drag the color proxy indicator along the Gradient bar to adjust the color placement.
- 9 Repeat steps 4-8 to add up to 15 more gradient colors.

Flash can create a number of paint effects in addition to solid colors. Gradients are made up of two or more colors that gradually fade into each other. They can be used to give depth to an object or create realistic shadows. Two gradient modes are available: linear and radial. Linear gradients are made up of parallel bands of color. Radial gradients radiate from a center focal point. Both can be edited for color, alpha, and position within a fill or stroke. You can add up to 16 colors to a gradient, precisely control the location of the gradient focal point, and apply other parameters. A gradient behaves like any other fill or stroke. It can be saved to the palette as a swatch using the Color Mixer panel Options button, and added to other shapes with the Paint Bucket tool.



Example:
3-Color
Linear
Gradient



Using the Fill Lock

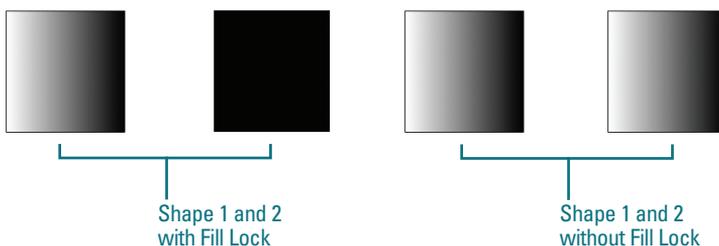
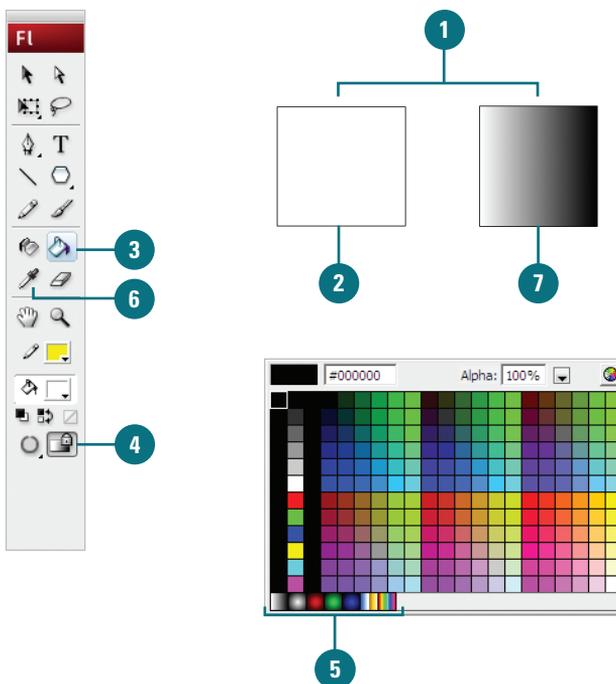
Lock Gradients

- 1 Create two simple shapes using the **Rectangle** or **Oval** tool.
- 2 Select the first shape on the Stage with the Arrow Selection tool.
- 3 Click the **Paint Bucket** tool in the Toolbar.
TIMESAVER Press **K** to select the Paint Bucket Tool.
- 4 Click the **Lock Fill** button in the Options area of the Toolbar.
- 5 Select a Gradient from the Colors area of the Toolbar or use the Color Mixer or Property Inspector.
- 6 Click the **Eyedropper** tool in the Toolbar, and then click on the gradient fill in the first shape.
- 7 Click down on the second shape to add the gradient fill.

Did You Know?

You can quickly add a gradient that spans all of your shapes. Select all of the objects you want to fill, and then choose a gradient. Click the Paint Bucket tool and make sure the Fill Lock is not selected. With your shapes still selected, touch down on them with the Paint Bucket.

As you increase the complexity and number of shapes in your movie, it can become tricky to edit each object separately. When using gradient fills on several objects you can choose to span a gradient across several of these objects or give each object its own discreet gradient. The Lock Fill feature allows you to control how a fill is applied, essentially locking its position so that depending on where the shapes are positioned relative to the gradient, the one gradient spans all of the shapes. If you apply the same gradient to multiple shapes with the Fill Lock off, the gradient is applied to each shape independently.

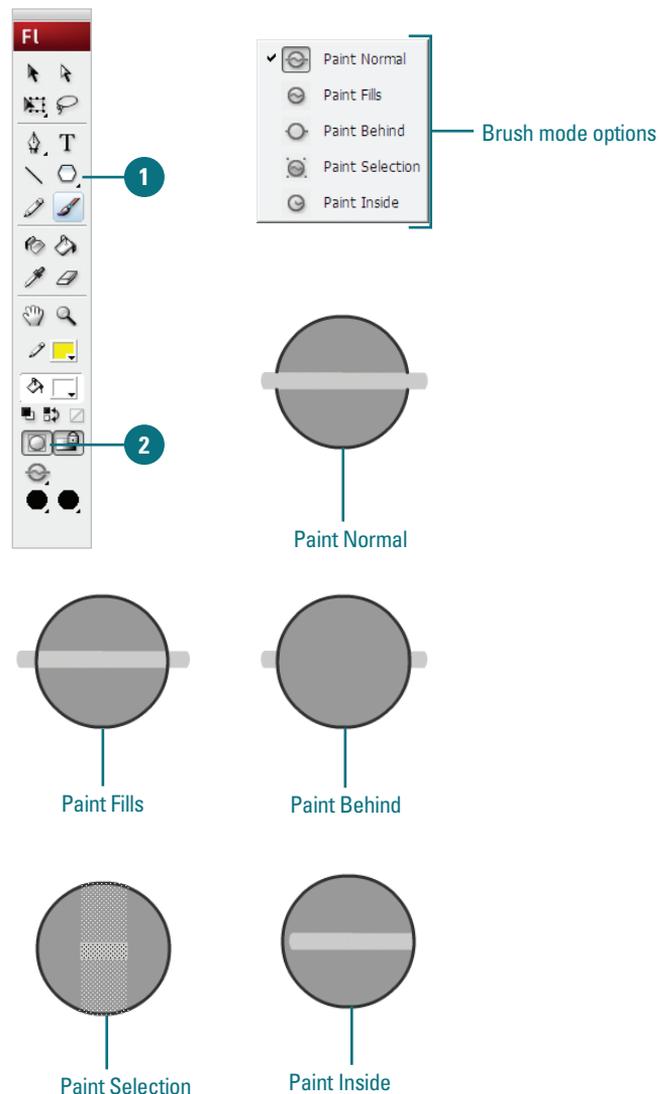


Using Paint Brush Modes

Use Paint Brush Modes

- 1 Click the **Paint Brush** tool in the Toolbar.
- 2 Click the **Brush Mode** popup in the Options area in the Toolbar, and then select from the following:
 - ◆ **Paint Normal.** The brush paints over everything including strokes and other fills.
 - ◆ **Paint Fills.** Painting only affects existing fills and empty areas of the Stage. Strokes are ignored.
 - ◆ **Paint Behind.** The Paint Brush only affects empty areas of the Stage keeping existing lines and fills intact.
 - ◆ **Paint Selection.** Painting only affects the selected areas you define with any of the selection tools.
 - ◆ **Paint Inside.** The Paint Brush only affects the fill of the shape you started in, ignoring other shapes and empty areas on the Stage.

In addition to size, shape, and color settings for the Paint Brush tool, you can control how the brush behaves when painting on existing shapes and objects on the Stage. Paint Brush modes can restrict the area affected by the tool to fills or selections, empty areas of the Stage or specific shapes. When the Paint Brush tool is selected, a popup menu appears in the Toolbar. Select from the following modes: Paint Normal, Paint Fills, Paint Behind, Paint Selection, and Paint Inside. Each performs a specific operation providing you with varying levels of control as you paint. Flash previews your paint path as you paint, but it only affects the areas you've specified in the Paint modes. When you release the mouse, these previews disappear.



Drawing with the Pen Tool

Use the Pen Tool to Create an Open Path

- 1 Click the **Pen** tool arrow in the Toolbar, and then click **Pen Tool**.

TIMESAVER Press *P* to quickly select the Pen tool.

- 2 Click on the Stage.

An anchor point is created.

- 3 Move your pointer to another position, and then click again.

Flash connects the two anchor points.

- 4 Double-click to end the path.

TIMESAVER *Ctrl+click* (Win) or *Command+click* a blank area to leave the path open.

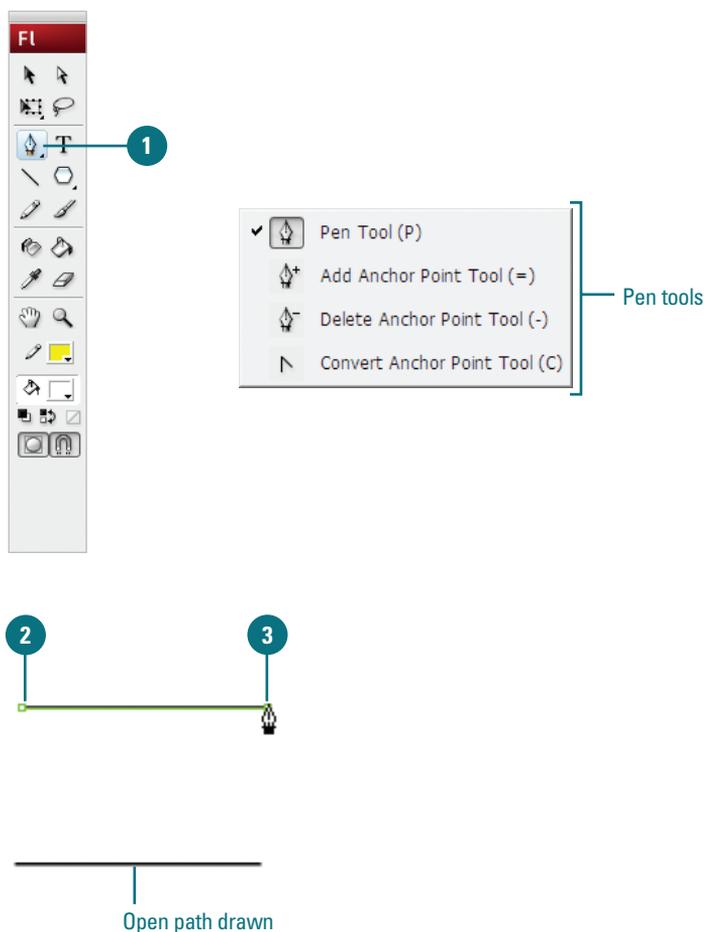
Did You Know?

You can end an open path using a keyboard shortcut. Press **⌘+click** (Mac) or **Ctrl+click** (Win).

See Also

See “Modifying Shapes with the Sub-Selection Tool” on page 112 for information on using tools.

The Pen tool is the basis for vector drawing. The Pen tool now behaves similarly to the Illustrator Pen tool to provide consistency across Adobe software (**New!**). Flash provides a number of ways to draw and edit objects that are unique to Flash but the Pen tool utilizes procedures that will be familiar to those who have used other vector drawing programs. The Pen tool utilizes anchor points and Bézier handles to create lines and shapes and behaves in a way that is familiar to those who have used other programs such as Adobe Illustrator and Adobe FreeHand. You can use the Pen tool arrow to select a different pen to add, delete, or convert anchor points. You can edit the anchor points and vectors to create the drawings you want.



Use the Pen Tool to Create a Closed Path

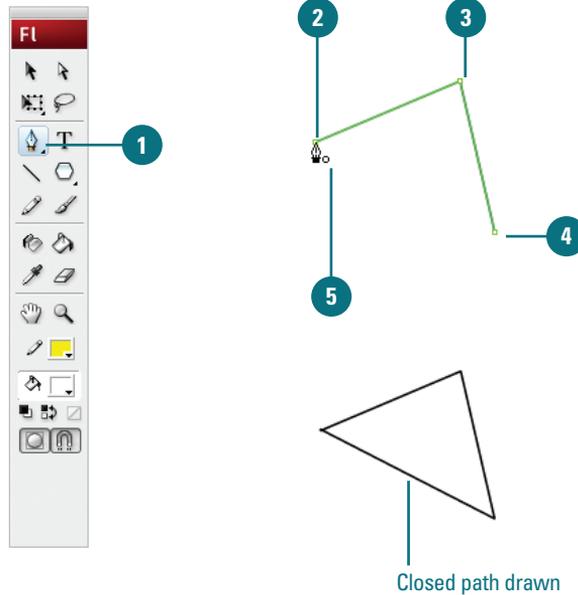
- 1 Click the **Pen** tool arrow in the Toolbar, and then click **Pen Tool**.
TIMESAVER Press *P* to quickly select the Pen tool.
- 2 Click on the Stage.
An anchor point is created.
- 3 Move your pointer to another position, and then click again.
Flash connects the two anchor points.
- 4 Move the pointer to a third position, and then click again.
Flash connects the second and third anchor points.
- 5 Move the pointer back to the first anchor point.
A small circle appears next to the pen pointer indicating you can close the path of the shape.
- 6 Click to close the shape.

Did You Know?

You can delete an anchor point with the Pen tool. Click the Pen tool arrow, click Delete Anchor Point Tool, and then click the point you want to delete.

You can add an anchor point with the Pen tool. Click the Pen tool arrow, click Add Anchor Point Tool, and then click where you want to add a point.

You can create horizontal, vertical, and 45 degree lines while you draw. Hold the Shift key while you draw to constrain a line to horizontal, vertical, and 45 degree angles.



Understanding Pen Pointers

Pointer	Description
Initial Anchor Point 	First pointer to create the beginning of a new path.
Sequential Anchor Point 	Creates an anchor point with a line connecting the previous anchor point.
Add Anchor Point 	Adds an anchor point to existing path.
Delete Anchor Point 	Deletes an anchor point within a path
Continue Path 	Extends a new path from an existing anchor point.
Close Path 	Closes the path of a drawing on the starting anchor point.
Join Paths 	Closes the path except not over the starting anchor point.
Retract Bézier Handle 	Displays Bézier handles when you point to an anchor. Click to retract then handles and revert to straight segments.
Convert Anchor Point 	Converts a corner point without direction lines to a corner point with independent direction lines. Use Shift+C modifier keys to toggle the pen.

Drawing Curves with the Pen Tool

Create Curved Line Segments

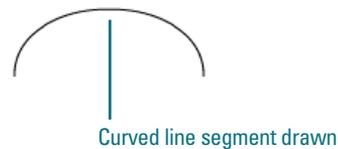
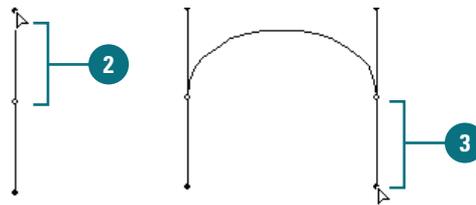
- 1 Click the **Pen** tool arrow in the Toolbar, and then click **Pen Tool**.
- 2 Click on the Stage without releasing the mouse, drag up, and then release the mouse.
- 3 Position the pointer to the right of the original point, drag in the opposite direction of the curve, and then release the mouse when the curve is where you want it.
- 4 Continue adding points as needed. To end the path, double-click or return to the last anchor point drawn and click on it.

Did You Know?

You can select to Show Precise Cursors instead of the Tool icons in the General tab of the Preferences dialog box. When this option is selected, drawing tools, such as the Pen tool, appear as crosshairs for better precision and alignment to grids and guides.

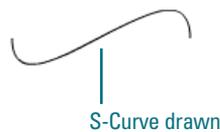
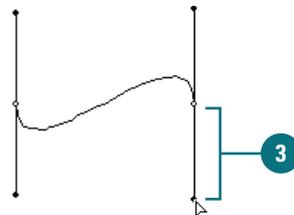
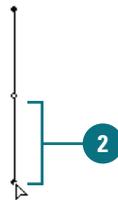
You can convert a curve point to a corner point. Click the Pen tool arrow, click Convert Anchor Point Tool, and then click the curve point you want to convert to a corner point.

The Pen tool can be used to draw precise and complex curves by simply clicking and dragging it on the Stage. These curves can be modified with precision by adjusting the Bézier handles that extend from the anchor points, or you can move the anchor points themselves. In this way, you can create any number of shape variations. For best results, make the grid visible so aligning anchor points isn't such a mystery.



Create S-Curves

- 1 Click the **Pen** tool arrow in the Toolbar, and then click **Pen Tool**.
- 2 Click on the Stage without releasing the mouse, drag down, and then release the mouse.
- 3 Position the pointer to the right of the original point, drag in the same direction as the first drag, and then release the mouse when the curve is where you want it.
- 4 Continue adding points as needed. To end the path, double-click or return to the last anchor point drawn and click on it.



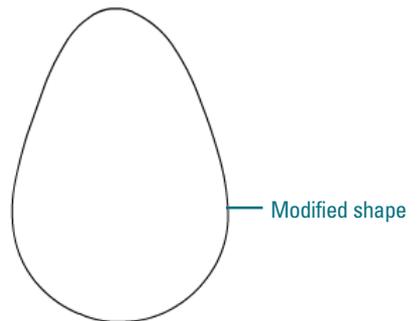
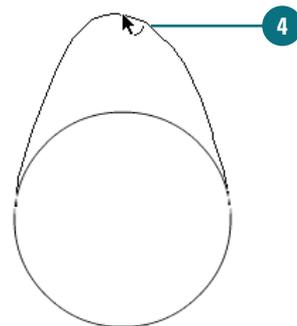
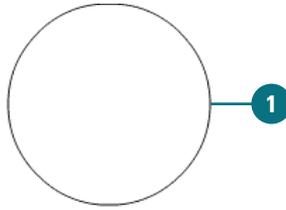
Modifying Shapes with the Arrow Tool

Use the Arrow Tool to Modify a Shape

- 1 Create a simple oval shape using the **Oval** tool.
- 2 Click the **Arrow** tool in the Toolbar. The pointer becomes an arrow.
- 3 Make sure the shape you want to modify is not selected.
- 4 Position the pointer on the edge of the shape, and then drag to modify the shape.

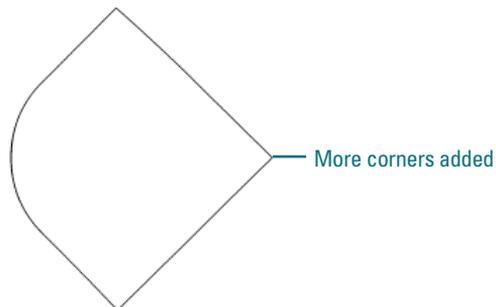
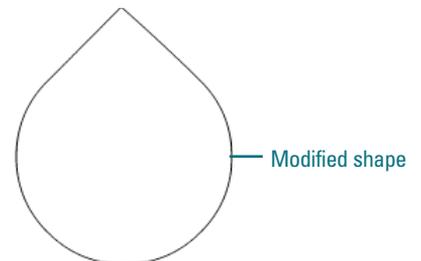
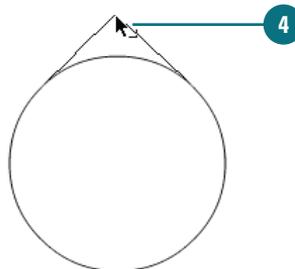
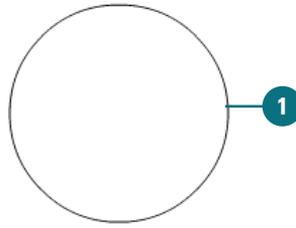
You can pull the curve to any position.

In Flash, unlike other vector drawing programs, you can edit shapes and lines in a unique, freeform way by simply dragging with the Arrow Selection tool. You can quickly adjust the curve or corner of a shape or line without having to select anchor points or use any other tools. This way of editing shapes is also useful for creating shape tweens where amorphous, organic movement is desired. This is what sets Flash apart from other animation tools and gives it its distinctive style. Additionally, you can convert curved line segments into corner points with this simple drag technique.



Convert Line Segments with the Arrow Tool

- 1 Create a simple oval shape using the **Oval** tool.
- 2 Click the **Arrow** tool in the Toolbar. The pointer becomes an arrow.
- 3 Make sure the shape you want to modify is not selected.
- 4 Position the pointer on the edge of the shape.
- 5 Press Option+drag (Mac) or Alt+drag (Win) to create a corner point.



Modifying Shapes with the Sub-Selection Tool

Use the Sub-Selection Tool to Modify a Shape

- 1 Create a simple oval shape using the **Oval** tool.
- 2 Click the **Sub-Selection** tool in the Toolbar.

The pointer becomes an empty (or white) arrow.

- 3 Click on the edge of the shape to reveal the anchor points, and then click on an anchor point to select it or drag a selection rectangle to select multiple anchor points.

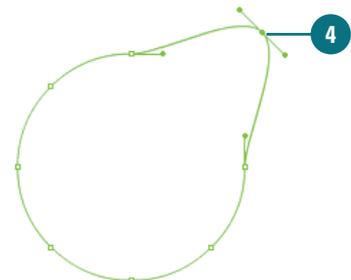
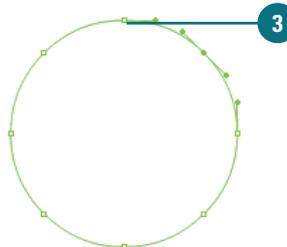
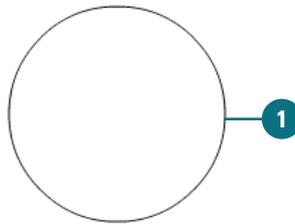
The anchor points are the little white squares around the edge of the shape. When selected, Bézier handles appear on either side of the anchor point.

- 4 Grab one of the handles or the anchor points themselves and drag it, and then release the mouse.

Did You Know?

You can also use the arrow keys on the keyboard to move selected anchor points. Select one or more anchor points with the Sub-Selection tool, and then press the arrow keys to move the anchor point and its connected lines in the direction of the key you press.

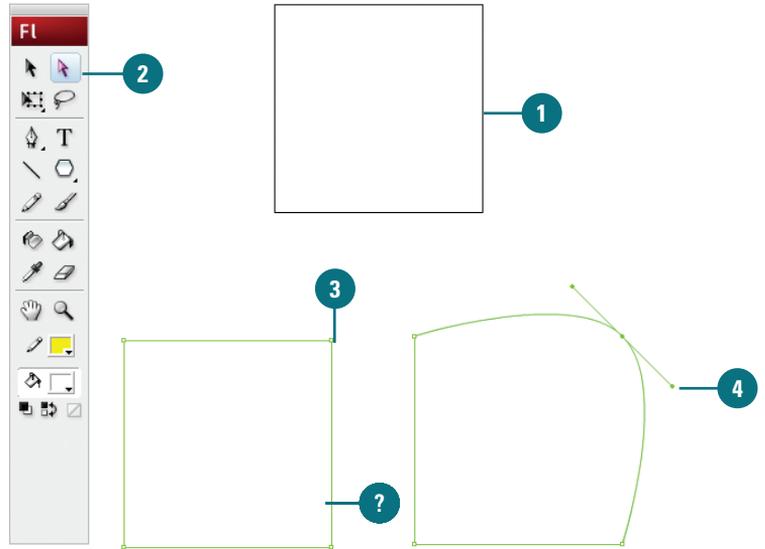
Vector shapes are made up of anchor points connected by line segments. There are two types of anchor points: corner points and curve points. Corner points connect two line segments in a sharp angle such as the corner of a square. Curve points define a curve or positions along a straight line and can be modified with Bézier handles. These handles extend out from the curve point and allow for very precise modification of the shape of the curve. The Sub-Selection tool works hand-in-hand with the Pen tool to create and modify shapes and lines in this way.



Convert Corner Points to Curve Points

- 1 Create a simple rectangle shape using the **Rectangle** tool.
- 2 Click the **Sub-Selection** tool in the Toolbar.

The pointer becomes an empty (or white) arrow.
- 3 Click on the edge of the shape to select it and then click on one of the corner points to select it.
- 4 Press Option+drag (Mac) or Alt+drag (Win) the point to convert it to a curve point and create Bézier handles.

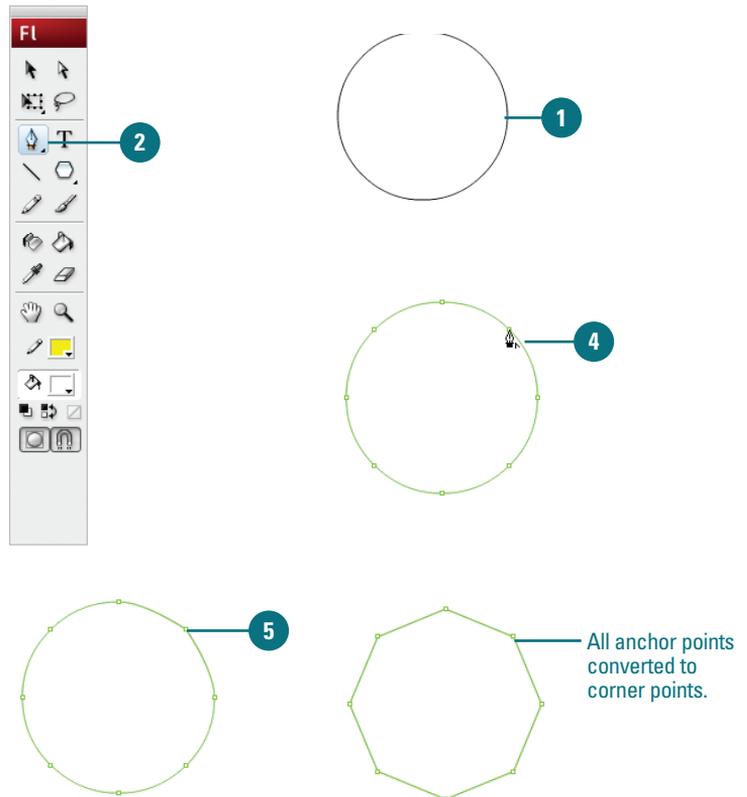


Convert Curve Points to Corner Points

- 1 Create a simple oval shape using the **Oval** tool.
- 2 Click the **Pen** tool in the Toolbar.

The pointer becomes a small pen.
- 3 Click on the edge of the shape to reveal the anchor points.
- 4 Position the pointer over one of the curve points.

A small corner icon appears.
- 5 Click on the point to convert it to a corner point.



Using the Free Transform Tool

Change the Scale of an Object

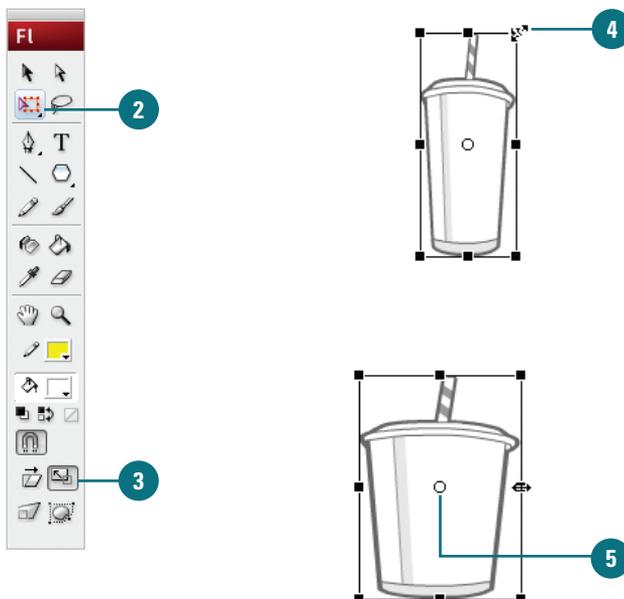
- 1 Select the object by clicking on it or by dragging a selection marquee around it with the **Arrow** tool.
- 2 Click the **Free Transform** tool in the Toolbar.
- 3 Click the **Scale Modifier** button in the Options area of the Toolbar.
- 4 Drag any of the small handles on the bounding box to change the size of the shape. The corner handles resize proportionally while the handles along the sides resize either horizontally or vertically.
- 5 To change the transformation point, drag the circle handle.

Did You Know?

You can restore a transformed object. Select the transformed object, click the Modify menu, point to Transform, and then click Remove Transform.

You can reset a transformed object. If you want to redo a transformation, select the object, and then click the Reset button in the Transform panel (available on the Window menu).

There are a number of ways to change the scale or size of graphics in Flash. The Free Transform tool position on Toolbar allows you to interactively scale and rotate any selected object or shape on the Stage. Nearly every object in Flash can be transformed with these two functions of the Free Transform tool including groups, symbols, text, bitmaps, and editable shapes. The Free Transform tool allows you to select an object on the Stage and then interactively change its size or rotate it freely. Both options are available at once depending on where you place your mouse on the bounding box that appears.



For Your Information

Working with the Transformation Point

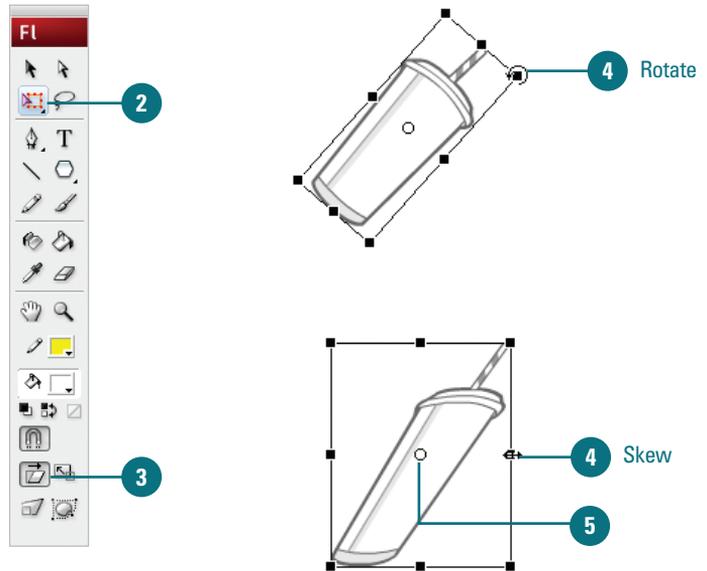
When you transform an object, a transformation point appears at the center of the object. The point is initially placed in the center of the object, but you can move it at any time. To move the transformation point during a transformation, drag the point. To set it back to the center, double-click the point. To switch the point of origin for a scale or skew, Alt+drag (Win) or Option+drag (Mac) the point. To monitor the location of the transformation point (X and Y positions), click the center square in the grid in the Info panel (available on the Windows menu).

Rotate and Skew an Object

- 1 Select the object by clicking on it or by dragging a selection marquee around it.
- 2 Click the **Free Transform** tool in the Toolbar.
- TIMESAVER** Press *Q* to select the Free Transform tool.
- 3 Click the **Rotate/Skew Modifier** button in the Options area of the Toolbar.
- 4 Drag any of the corner handles on the bounding box to rotate the shape. Drag the handles along the side to skew the object.
- 5 To change the transformation point, drag the circle handle.

Did You Know?

You can hold down the Shift key to constrain the rotation scale proportionally. When rotating, it constrains the rotation to 45-degree turns.



For Your Information

Working with Scale and Rotate

In the Default mode, both Scale and Rotate are enabled. Move the pointer to any of the four corner handles in the bounding box to enable the Rotate function. Scale and Rotate work relative to a center transformation point on the shape, which becomes visible when the shape is selected with the Free Transform tool. Move this point if you want to scale or rotate a shape from a different part of the shape. This is especially important when tweening and animating. You can change the scale and rotate objects by entering values in the Transform panel or in the Property Inspector. You can also access all of the Transform modes and some additional effects, such as Flip Horizontal and Vertical from the Transform submenu in the Modify menu.

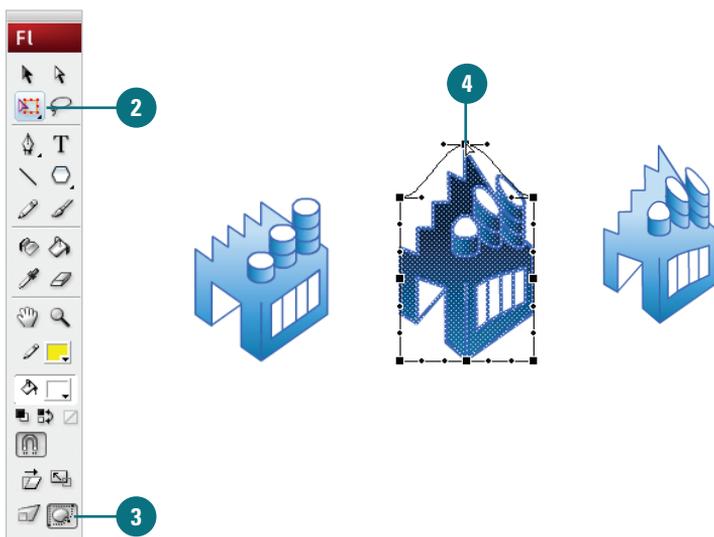
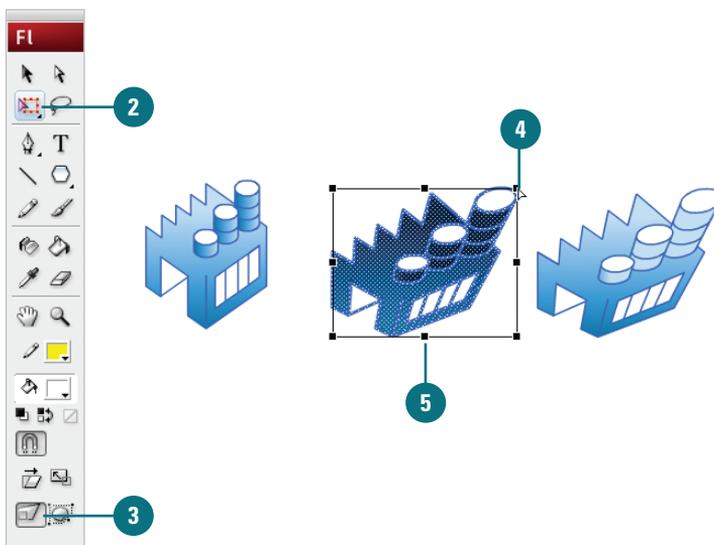
Using Transform Options for Shapes

Distort a Shape

- 1 Select the object.
- 2 Click the **Free Transform** tool in the Toolbar.

TIMESAVER Press *Q* to select the Free Transform tool.

- 3 Click the **Distort Modifier** button in the Options area of the Toolbar.
- 4 Drag any of the corner handles on the bounding box to distort the shape.
- 5 Drag any of the side handles on the bounding box to skew or stretch the shape.



In addition to the scale and rotation changes that can be applied to groups, symbols, bitmaps, and text as well as editable shapes, there are two additional transforms available only to editable shapes. Distort and Envelope are two modes available in the Free Transform tool options that enable you to transform the vectors of editable shapes to varying degrees. Distort transformations work on adjoining edges, tapering them down to vanishing points, similar to perspective. Envelope transformations allow you to warp the edges of a shape by splitting it up into smaller portions each controlled by their own vectors and anchor points.

Transforming Gradient Fills

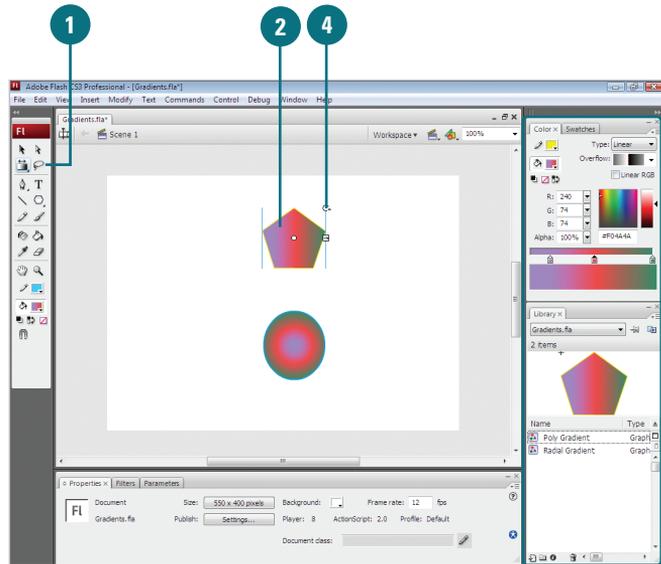
Adjust a Gradient Fill

- 1 Click the **Gradient Transform** tool in the Toolbar.
- 2 Click the gradient fill to select it.
A bounding box appears around it.
- 3 Position the pointer over an editing handle on the bounding box to identify its function.
 - ◆ **Center point.** Four-way arrow.
 - ◆ **Focal point.** Inverted triangle.
 - ◆ **Size.** Circle with an arrow.
 - ◆ **Rotation.** Four arrows in the shape of a circle.
 - ◆ **Width.** Double-ended arrow.
- 4 Click and drag an editing handle to adjust the gradient fill.

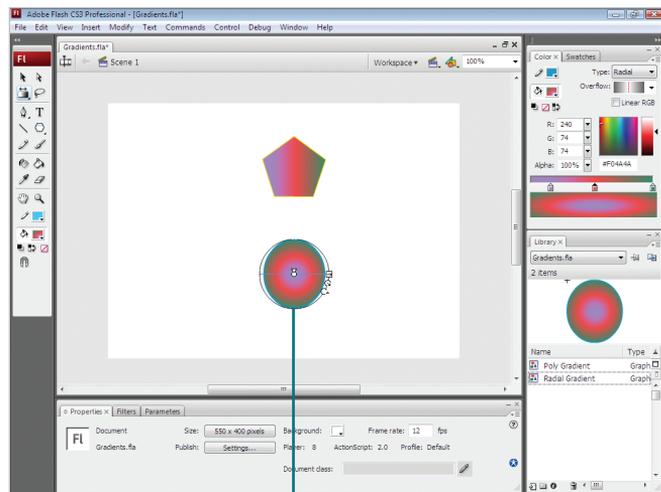
See Also

See “Modifying a Bitmap Fill” on page 196 for information on using the Gradient Transform tool with bitmaps.

After you create a gradient fill, you can transform it by adjusting the size, rotation, width, or center of the fill with the Gradient Transform tool (formally called the Fill Transform tool). For a radial gradient, you can now adjust the focal point (center) of a gradient fill applied to an object. You can also use the Gradient Transform tool to modify a bitmap fill.



Use Color Mixer to change color gradient settings



Radial gradient

Cutting and Pasting Graphics Between Layers

Paste Objects Between Layers

- 1 Create or open a document with several layers.
- 2 Select one or more objects on the Stage.

Flash selects the object's layer in the Timeline.

- 3 Click the **Edit** menu, and then click **Cut** or **Copy**.
- 4 Select a destination layer in the Timeline.
- 5 Click the **Edit** menu, and then click **Paste In Center**.

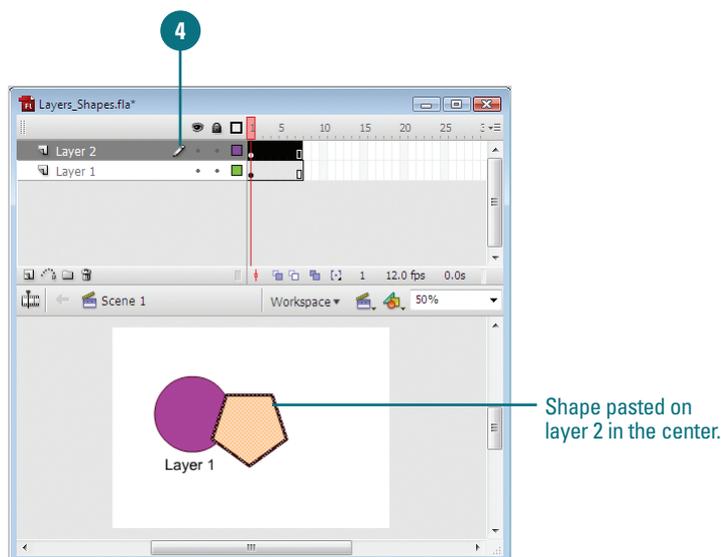
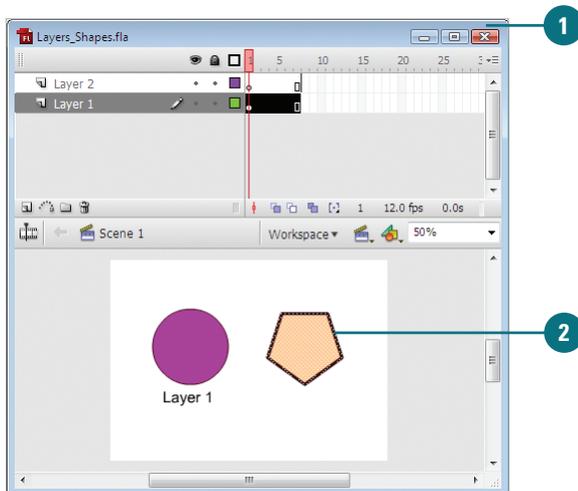
Flash pastes the objects on the Stage in the middle of the active layer.

Did You Know?

You can use the area around the Stage to store graphics and other objects.

Flash allows you to use the area around the Stage, called the Pasteboard, to store items for use later without having them appear on the Stage when you play the movie (SWF) file.

Unless you lock or hide layers, or lock objects, the graphics on all layers are available for editing. You can select objects on one or more layers, cut or copy them, and then paste them all into a single layer. Flash can have only one layer active at a time. When you create and paste graphics, Flash places them on the active layer of a document. You can paste objects in two different ways: Paste In Center and Paste In Place. Paste In Center puts objects in the center of the open Flash window, which might not be the Stage. If you want to paste to the center of the Stage, you need to center the Stage in the open window. Paste In Place puts objects at the same location it had been when you cut or copied it.

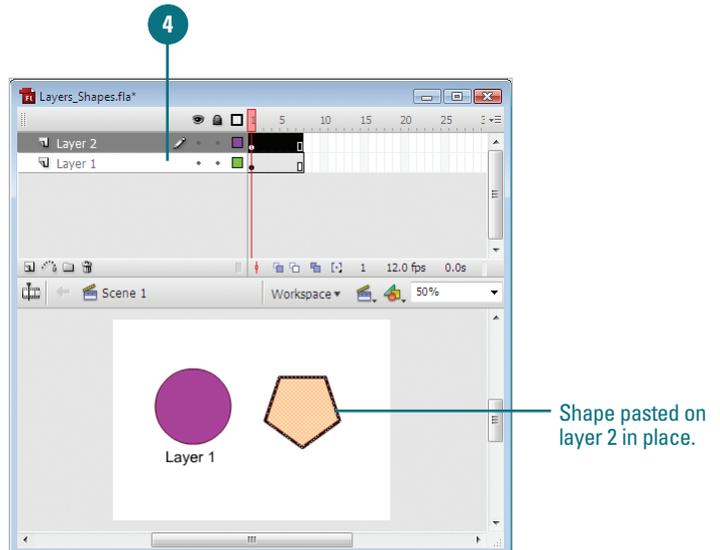
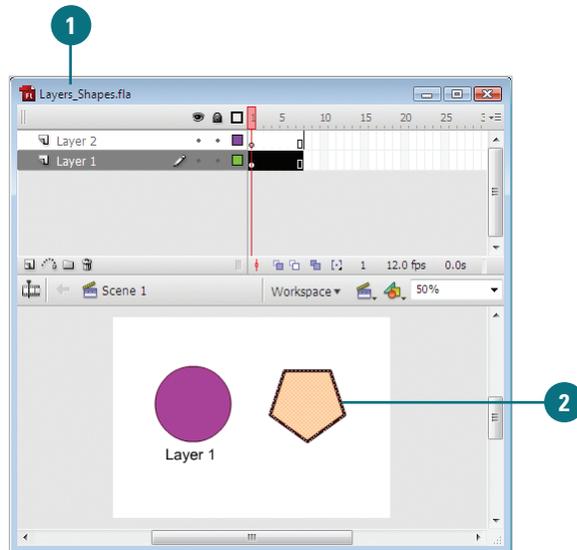


Use the Paste In Place Command Between Layers

- 1 Create or open a document with several layers.
- 2 Select one or more objects on the Stage.

Flash selects the object's layer in the Timeline.
- 3 Click the **Edit** menu, and then click **Cut** or **Copy**.
- 4 Select a destination layer in the Timeline.
- 5 Click the **Edit** menu, and then click **Paste In Place**.

Flash pastes the objects into their original locations on the Stage in the middle of the active layer.



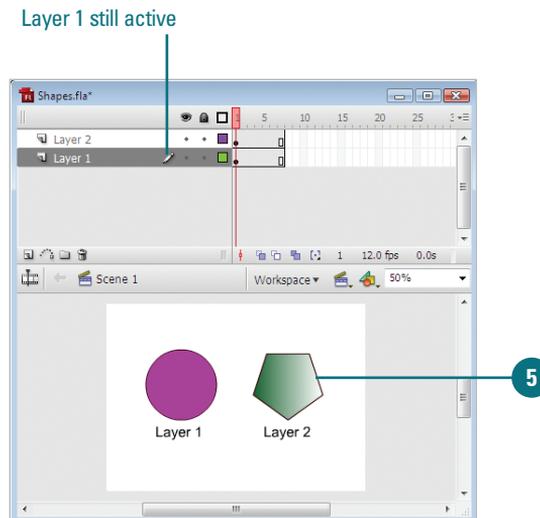
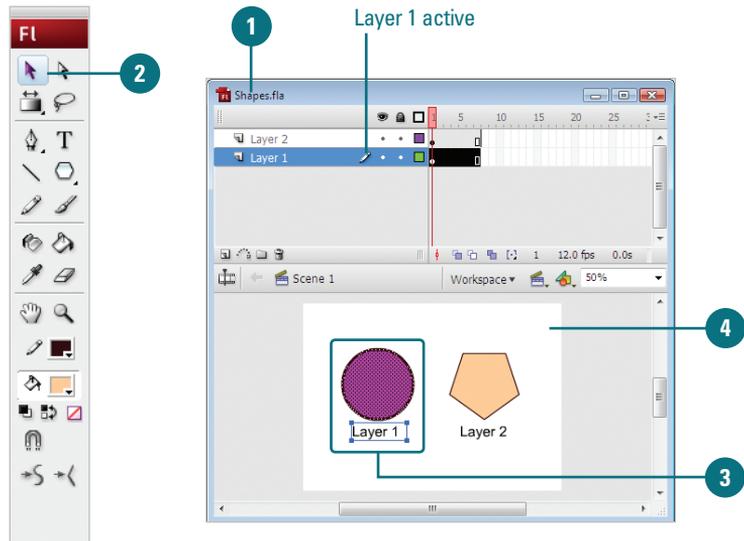
Working with Graphics on Different Layers

Edit Object on Inactive Layers

- 1 Create or open a document with several layers.
- 2 Click the **Selection** tool in the Toolbar.
- 3 Select an object on the Stage.
Flash selects the object's layer in the Timeline.
- 4 Click a blank area of the Stage.
Flash deselects the object but keeps the active layer.
- 5 Make changes to another object in another layer (inactive layer) without actually selecting the object. You can do any of the following:
 - ◆ Drag an object's outline to reshape it.
 - ◆ Select a tool on the Toolbar, such as the Paint Bucket tool, and use it to modify the object.

Flash modifies the object in the inactive layer. The active layer didn't change. Flash changes active layers only if you select an object.

When you select an object on the Stage, Flash selects the object's layer in the Timeline. The reverse is also true. When you select a layer in the Timeline, Flash selects all the objects for that layer on the Stage. As you work with objects on different layers, it helps to know how selections work. Unless you lock or hide layers, or lock objects, the objects on all layers, either active or inactive, are available for editing. You can activate a layer and edit objects on inactive layers.



Distributing Graphics to Layers

Place Selected Objects on Separate Layers

- 1 Create or open a document with several objects on a single layer.
- 2 Select all the objects on a single layer you want to distribute to separate layers.

TIMESAVER Click the **Edit** menu, and then click **Select All** or press **⌘+A** (Mac) or **Ctrl+A** (Win).

- 3 Click the **Modify** menu, point to **Timeline**, and then click **Distribute To Layers**.

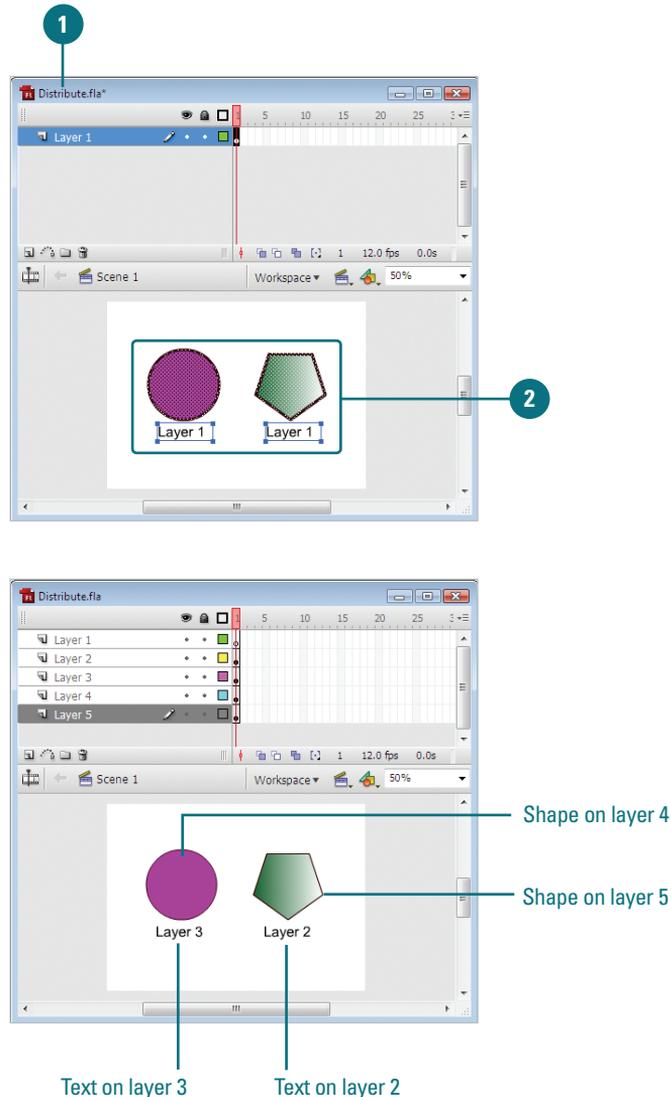
TIMESAVER Press **⌘+Shift+D** (Mac) or **Ctrl+Shift+D** (Win) to distribute to layers.

Flash creates a layer for each object. New layers appear at the bottom of the Timeline in the order in which you originally placed them on the Stage. Each object is placed in the same location on the Stage (like the Paste In Place command).

See Also

See Chapter 8, “Animating with Motion Tweening” on page 221 for information on using motion tweening.

If you have several objects on a single layer, and need to move them onto separate layers, you can use Cut and Paste in place for each object or you can save time by using the Distribute to Layers command. The Distribute to Layers command puts each object (shapes, groups, and symbols) in a selection on a separate layer; any unselected objects remain on their original layer. This command comes in handy when you want to create a motion tweening animation, which requires objects to be on individual layers.



Working With Object Drawing

Enable and Use Object Drawing

- 1 Select a drawing tool in the Toolbar that supports Object Drawing (Pencil, Line, Pen, Brush, Oval, Rectangle, and Polygon).
- 2 Select the **Object Drawing** button in the Toolbar.

TIMESAVER Press the J key to toggle between Merge and Object Drawing.
- 3 With the **Pointer** tool, click to select an object, and then drag the bounding box to move it.
- 4 To switch back Merge Drawing, click the **Object Drawing** button again.

Did You Know?

You can convert a Merge Drawing shape to an Object Drawing shape. Select the shape on the Stage, click the Modify menu, point to Combine Object, and then click Union.

See Also

See "Setting General Preferences" on page 60 for information on options for contact-sensitivity when selecting shapes created using Object Drawing.

Previously in Flash, all shapes in the same layer on the Stage could change other overlapping shapes, known as Merge Drawing. In Flash, you can create shapes directly on the Stage that do not affect other overlapping shapes, known as Object Drawing. By default, Flash uses Merge Drawing. To draw shapes using Object Drawing, you use the Object Drawing button in the Toolbar. When you select a shape created using Object Drawing, Flash selects the shape with a rectangular bounding box, which you can use with the Pointer tool to move the shape on the Stage. You can use General preferences to set selection options for contact-sensitivity when selecting shapes created using Object Drawing.

