

INTRODUCING THE PEN TOOL - FLASH

Finally, Flash has a Pen Tool. Some developers groused over the addition of this new feature, saying that the original drawing set was fine and that this was only being added to attract new users who might be more familiar with FreeHand or other drawing programs. Frankly, these people sounded like members of a child's club, comfortable in their tree fort, as they haul up the rope ladder. The inclusion of the Pen Tool and its close associate, the Sub select Arrow, shown in below, has made the Flash drawing tools far more robust and gives artists more options for creating, editing, and optimizing their art.

For example, previously, when trying to the reduce file size of a movie, an artist might resort to one of the Optimize commands, hoping to reduce the number of points in a drawing. But this had the disadvantage of being both unpredictable and uncontrollable. Now, with the Pen Tool, an artist can select individual points and delete them one by one, resulting in aesthetic precision and reduced file size.

Neither the Pen Tool nor the Sub select Tool has options in the Options Tray.

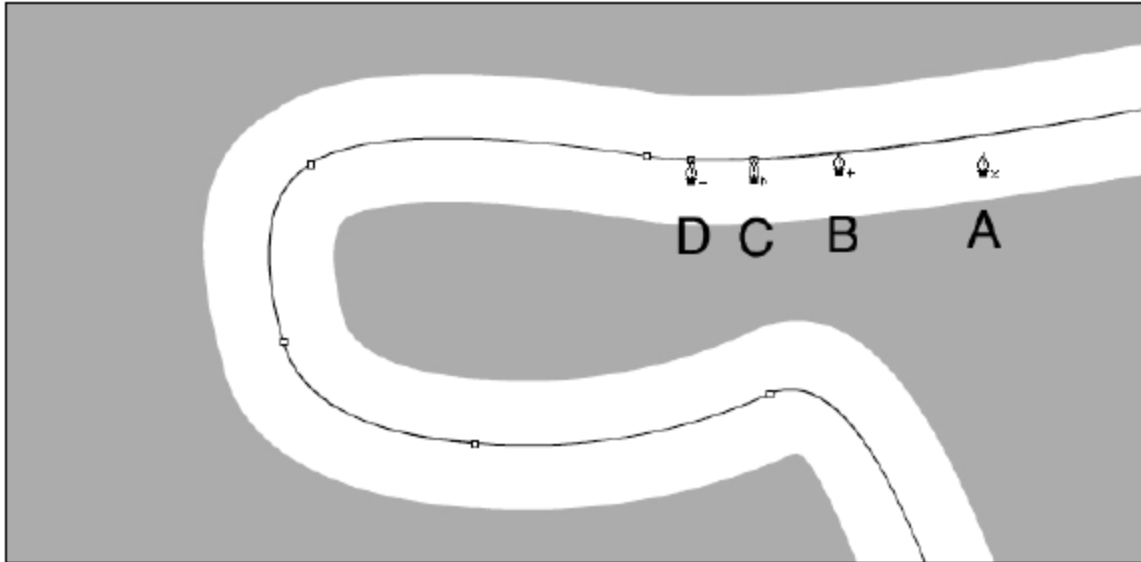


Using the Pen Tool

The Pen Tool (P) is used to draw precision paths that define straight lines and smooth curves. These paths define adjustable line segments, which may be straight or curved the angle and length of straight segments is completely adjustable, as is the slope and length of curved segments. To draw a series of straight-line segments with the Pen Tool, simply move the cursor and click successively: Each subsequent click defines the end point of the line. To draw curved line segments with the Pen Tool, simply click *and drag*: The length and direction of the drag determines the depth and shape of the current segment. Both straight- and curved-line segments can be modified and edited by adjusting their points. In addition, any lines or shapes that have been created by other Flash drawing tools can also be displayed as paths (points on lines) and edited with either the Pen Tool or the Subselect Tool.

Below it shows, the Pen Tool cursor displays a number of tiny icons to the lower right of the Pen Tool. These are the Pen states. Four of these Pen states are shown in this composite image, which is a detail of a path describing a white line over a light-gray background, shown at a zoom of 1600.

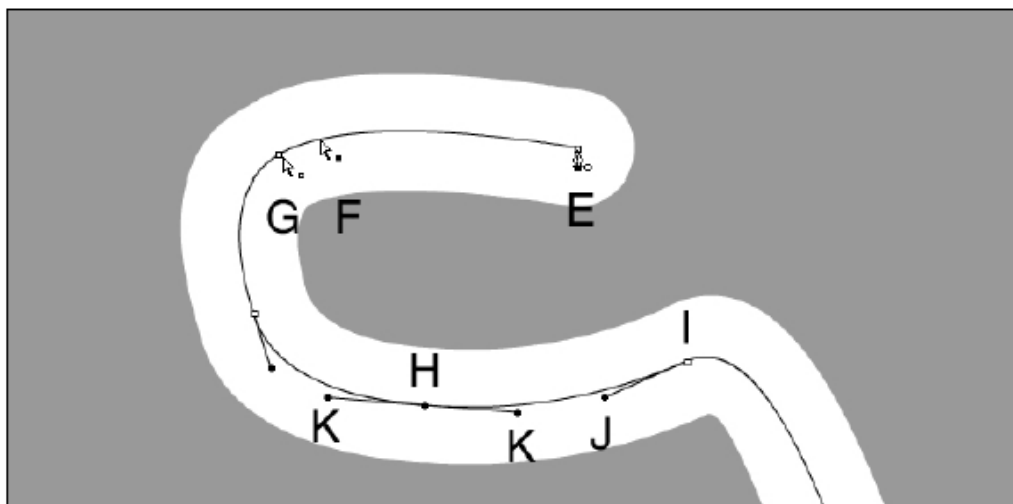
In addition to the choice between the cursor icon and crosshair, the Pen Tool displays seven Pen states that indicate the Pen's function under various circumstances.



- The Pen displays a small (x) when it's simply over the stage (A).
- When the Pen is over a path, it displays a (+) to indicate that clicking there will add a point to the path (B).
- When the Pen hovers over an existing point, it displays a (^) to indicate that clicking that point will turn it into a corner point (C).
- When the Pen hovers over a corner point, it displays a (-) sign to indicate that clicking this corner point will delete it (D).

As shown below, there are three more Pen states and a number of details to be defined about the Pen Tool.

More Pen states are shown in this composite image, together with other functions of the Pen Tool.



- When the Pen is hovered over an end point, it displays an (o) to indicate that this is an end point (E). Click this point to connect a continuation of this path or, when making a closed shape, to close the path.
- With the Ctrl (Command) key pressed, when the Pen hovers over a path or line, it displays as a hollow arrow with a filled black box (F). In this manner, the Pen Tool is mimicking the Subselect Tool.
- With the Ctrl/Command key pressed, when the Pen hovers over a point, it displays the same hollow arrow, but with a hollow box (G). In this manner, too, the Pen Tool is mimicking the Subselect Tool.
- When adjusting a path with either the Pen Tool or the Subselect Tool, the default for selected points is a filled circle (H), while unselected points display as a hollow squares (I). Note that the unselected points display a single tangent handle (J), bound toward the selected point, which displays two tangent handles (K).

Now that we've toured the various Pen Tool icons and Pen states, and have defined the fine details, points, and tangent handles, it's time to start drawing with the Pen Tool. To draw and adjust a straight-line segment with the Pen Tool, follow these steps:

1. Click to initiate the beginning of your line.
2. Then, click to create subsequent points and define individual line segments.
3. Each subsequent click creates a *corner* point on the line that determines the length of individual line segments.
4. To adjust straight segments, press the Ctrl (Command) key and click a point to select it. Continue pressing the Ctrl (Command) key as you drag and move the point to change the angle or length of the segment.
5. Or, with the Ctrl (Command) key pressed, click and drag on the tangent handles of the point to adjust the line. Remember that corner points occur on a straight segment or at the juncture of a straight segment and a curved segment.

To draw and adjust a curved line segment with the Pen Tool, follow these steps:

1. In one continuous motion, click to create the first anchor point.
2. Then, drag the Pen Tool in the direction you want the curve to go.
3. Repeat this process to create subsequent *curve* points for curved segments.
4. Or simply click elsewhere to change to make the subsequent segment a straight line with a *corner* point.
5. As with adjusting straight segments, press the Ctrl (Command) key and click a point to select it, continue pressing the Ctrl (Command) key as you drag and move the point to change the angle or length of the segment.
6. Or, with the Ctrl (Command) key pressed, click and drag on the tangent handles of the point to adjust the depth and shape of the curve.

Although both corner points and curve points may be adjusted, they behave differently:

- Because a corner point defines a corner, adjusting the tangent handle of a corner point only modifies the curve that occurs on the same side as the tangent handle that is being adjusted.
- Because a curve point defines a curve, moving the tangent handle of a curve point modifies the curves on both sides of the point.

- You can also use the arrow keys, located on your keyboard, to nudge corner and curve points into position. Press the Shift key to augment the arrow keys and to make them nudge 10 pixels with each click.

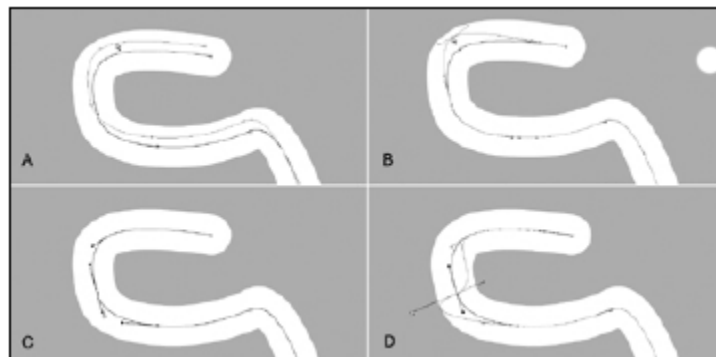
Using the Subselect (Arrow) Tool

The Subselect Tool (A) has two purposes:

1. **To either move or edit individual anchor points and tangents.** (You can use the Subselect Tool to display points on both lines and shape outlines and modify them by adjusting their points.)
2. **To move individual objects.** When moving the Subselect Tool over a line or point, the hollow arrow cursor displays one of two states: When over a line it displays a small, filled square next to it; when over a point, it displays a small, hollow square. When either cursor appears, the item can be clicked and moved about the stage.

Below it shows the use of the Subselect Tool to move a path (A), to move a single point (B), to select a tangent handle (C), and to modify a curve by adjusting its tangent handle (D). Note that both the before and after are shown before releasing the handle.

Using the Subselect Tool



The Subselect Tool is most useful for modifying and adjusting paths. To display anchor points on a line or shape outline created with the Pencil, Brush, Line, Oval, or Rectangle Tools, simply click the line or shape outline with the Subselect Tool. This reveals the points that define the line or shape. Click any point to cause its tangent handles to appear. If you have a shape that is all fill, without any stroke, you'll need to position the Subselect Tool precisely at the edge of the shape in order to select or move it with the Subselect Tool.

To convert a corner point into a curve point, follow these steps:

1. Click to select the point with the Sub select Tool.
2. While pressing the Alt (Option) key, click and drag the point.
3. A curve point with tangent handles appears, replacing the original corner point.

An important use of the Pen Tool/Sub select Tool combo is editing lines for optimal file size. The simpler your shapes, the smaller your file size and the faster your movie download. Most often, this involves deleting extraneous points. There are a couple of ways to delete points:

- Choose the Sub select Tool from the Toolbox, and then click to select the line with the Sub select Tool, which causes the individual points to appear as hollow circles along the line. Select the point that you wish to delete. Click the delete key.
- Choose the Pen Tool from the Toolbox, which causes all paths on the current layer to be selected. Bring the Pen Tool over the point that you want to delete. The cursor updates and displays a small inverted v (^) to the lower right, which is the Corner Point cursor. Click the point with the Corner Point cursor, and continue to hover over the point. After clicking with the Corner Point cursor, the cursor updates and displays a small minus sign (–) to the lower right, which is the Delete Point cursor. Click the point with the Delete Point cursor to delete it.
- When deleting more than one point from a closed shape, such as an oval or polygon, use the Sub select Tool to drag and select any number of points. Press Delete to eliminate the selected points. The path heals itself, closing the shape with a smooth arc or line.

Stroke and color

You may have noticed that we've been discussing the Pen Tool and the Sub select Tool in a relative vacuum—that is, there's been no mention yet of either stroke or color. Well that's easy enough to do, because both *those* controls are sequestered off in the Stroke Panel. But that's not why we've refrained from discussing the more colorful aspects of the Pen Tool.