Creating Brushes in Illustrator CS

Shamrock Brush

This tutorial uses Illustrator CS, but it will work in Illustrator 9 or 10 as well, although some of the commands may be in different places, especially loading brushes, but we will get to that later. For now, let's make the first brush. (Note: symbols were new in Illustrator 10, so if you are using Illustrator 9, you won't have the symbol option.)

Step 1. Either open the shamrock you make last week or follow the instructions here under **"Drawing the Shamrock"** steps 1-17 to make another. If you don't want to draw one, you can use mine by downloading this file for Illustrator CS or Illustrator 10, or for Illustrator 9. Note: When opening the file in Illustrator 10, you may get a message saying the file was created in a newer version of Illustrator and some loss may occur. You can safely ignore this message and open the file.

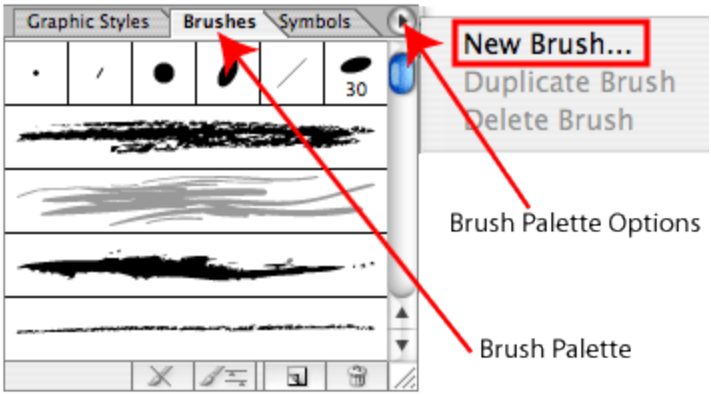
Step 2. Because the shamrock we made last time was large, I scaled mine to 20% size. To do this, go to **Object > Transform > Scale**. Make sure **Uniform** is checked and enter **20** in the percentage box. Click OK. Save this image as shamrock_small.ai so you don't overwrite the large one.

Step 3. Make a couple duplicates of the scaled shamrock in case you want to start over. The easiest way to do this is to:

1. Go to **Object > Transform > Scale**.
2. Make sure **Uniform** is checked.
3. Enter **100** in the percent box.
4. Click the **Copy** button.
5. Before you do anything else, transform again by typing **command/control + D** a few times to make copies.
6. Click and drag on the copies to drag them off the original shamrock and move them out of the way.

If you get stuck and have to start over grab one of your duplicates.

Step 4. Select one of the shamrocks by clicking on it with the selection tool (**V**). Open the Brush palette (**Window > Brushes**), and open the Brush palette options menu. Choose **New Brush**.



Step 5. The **New Brush** dialog opens and as you can see there are several kinds of brushes you can choose from.

Calligraphic Brush

A calligraphic brush draws strokes that are angled as if they were drawn with a calligraphic pen. A calligraphic brush follows the center of the path.

Scatter Brush

A scatter brush repeats the object (or objects) scattered from a drawn path according to variables you set. It can be far away from the path, or you can set it so it follows the path exactly with no variation. It can also scatter from the path a set amount away from it, or randomly. The example below is scattered randomly.

Art Brush

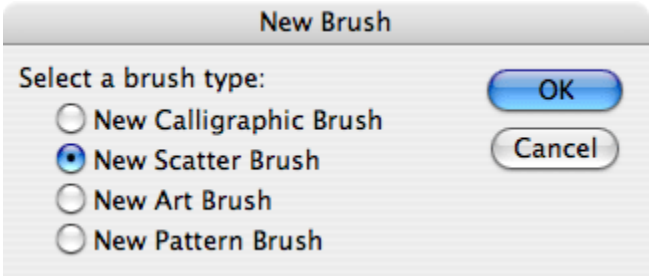
An Art brush stretches the brush along the path.

Pattern Brush

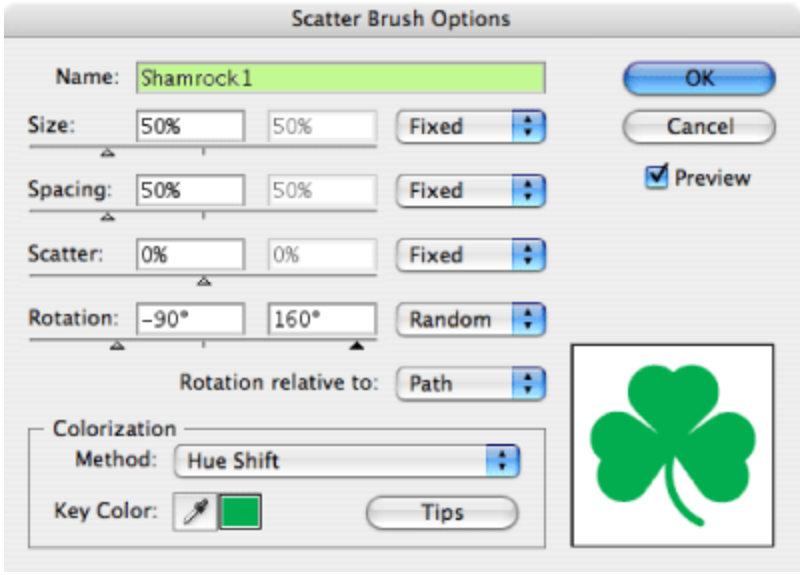
A pattern brush repeats the object or objects from which the brush is created along the path and can have separate graphics for corners. In fact, some designs don't work very well without separate graphics for the corners, which allow the brush to follow a path that goes around square corners with ease. Pattern brushes can be very simple or very elaborate. If you want detailed information on Pattern Brushes, I suggest my Pattern Brush Anatomy 101 tutorial.

Step 6. Now that you see the four types of brushes you can choose, which one do you think we should use for the shamrock brush? A scatter brush would work if you want the shamrocks scattered along the path, or a pattern brush would work as well if you want a brush that can go around corners. We'll try both of them today.

First let's make a scatter brush. In the New Brush dialog, choose **New Scatter Brush** and click OK.



Step 7. The scatter brush options will open. Each brush type has its own set of options so you can set how it follows the path. The scatter brush options have several settings.



Name: Give your brush a name when you make it. I called this one Shamock1 because we'll be making a pattern brush later in the tutorial.

Size: Size is relative to the original size of the graphic. 100% is of course the original size, and you can make it larger or smaller using the slider triangle or by typing a value into the data input box. I set this to 50%. Note the menu at the end of the sliding bar: you can also choose to make the brush a Fixed Size, Random Size, or have size determined by Pressure. Fixed size will keep the shamrock at the percentage you specified. Pressure is for graphics tablet users and the size of the shamrocks in the brush will depend on the pressure applied with the stylus. You can also choose Random, and if you do, you can set the range of size the individual parts of the brush (in this case the shamrock) can be. You will have two slider triangles if you choose Random: one to set the bottom size range and one to set the top size range. The sizes of the individual shamrocks will be random, but between the upper and lower range you set here. For this exercise choose **Fixed**.

Spacing: Spacing determines how far apart the individual shamrocks will be. I lowered this to 50%. The lower the number, the closer together the shamrocks will be. They can overlap. You can also choose Fixed for fixed size, Random for random size and set the range, or Pressure to determine size according the stylus pressure.

Scatter: This determines how far from the path the shamrocks will be placed. This can also be set to Fixed, Random, or Pressure. Fixed will remain in a line, and you can determine how far from the path it strays: 0% will follow the path. For now choose 0% and Fixed here.

Rotation: Each graphic can rotate 0% (none) or as much as you like. This can also be set to Fixed, Random, or Pressure. I chose Random and set the range from -90% to 160% so the shamrocks would rotate around the path. See the difference:

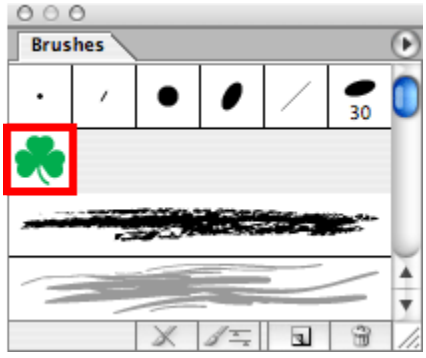
This one has the rotation set as above:

This one has rotation set to 0% Fixed:

Rotation Relative to: Path or Page. The rotation of the individual brush objects is aligned to the path or the page. Look at the black lines I drew through the centers of the shamrocks in the examples below. Choosing **Relative to Page** keeps the shamrocks of the brush aligned to the page. If you choose **Relative to Path**, the shamrocks are aligned to the path. Choose **Path** here.

Colorization: Chose the method of changing the brush color here. Choose **Hue Shift** for this exercise so the color will change when we change the stroke color, but you can also choose None or several other methods. To see more about the other Colorization methods and examples, click the **Tips button**.

Step 8. Click OK to set the options and create the new brush. A graphical representation of the brush appears in the brushes palette.



Step 9. To use your new scatter brush, draw a path with any of the drawing tools: the pen tool, pencil tool, line tool, arc tool shape tools etc...and click on the brush in the palette to apply.

Resizing Brushes

Because the shamrock is vector, you can make the brush larger or smaller and retain the quality. The size above might be fine for an accent, but maybe you want to use it to add a border to a page.

To resize brushes do one of these two things:

1. Double click on the brush in the brushes palette to open the options and change the size. You will be asked if you want to apply the changes to brush strokes already on the image, or leave the strokes. The difference is this: **Apply Strokes** applies the changes to all strokes using the brush on the image. It also changes the options for the brush so any further strokes you apply will have the new settings. If you choose **Leave Strokes**, the changes are not applied to any strokes currently on the image, but they are applied to the brush and will be applied to any strokes you add later. Important: You may have to change the spacing as well as the size. Make sure to click the preview box so you can see the effects of the changes on the brush stroke.
2. Use the **Stroke Palette** to change the width of the stroke. This method changes only the size of the brush for the currently selected stroke, and doesn't make apply the changes to any future strokes. If the stroke palette isn't open, open it from **Window > Stroke**.

Saving the brush

Now that the brush has been created we need to save it. Follow these steps to save the brush so you can easily load it and use it in future projects.

1. Draw any line or shape and use the brush on it. If you forget this step, when you try to load the brush file later it will be empty!
2. Open the options menu of the brushes palette and choose **Select All Unused**.
3. Choose **Delete Brush** from the palette options menu, or drag the brushes to the trash can at the bottom of the palette. When asked if you are sure you want to delete the selected brushes, say yes.
4. If there are any brushes left other than the shamrock, it's because they're in use in one of the graphic styles. We will take care of them in a minute.
5. Do the same for the Symbols, Graphic Styles, and Swatches palettes. Options menu > Select all unused, then delete the selected.
6. If there were any brushes other than the shamrock left in the brushes palette, go back and follow 1 and 2 now to get rid of them. The reason we do this is to help keep the file size down as well as keep Illustrator from loading duplicate brushes, which takes up memory unnecessarily.
7. Now you can select everything on the page and delete it. The page will look empty but the brush will be saved.
8. Go to **File > Save As** and save your brush. I suggest naming it shamrock1_brush.ai so you know this is a brush file, but any name will do. You can save it anywhere you like, or you can save it in the Illustrator/presets/brushes folder to have it added to the brush library lists.

9. Close the file.

Loading brushes in Illustrator CS

Loading brushes in Illustrator CS is a bit more convenient than in previous versions. In Illustrator CS you can load brush libraries directly from the brush palette options menu. Just open the options menu and choose **Open Brush Library** and select your brushes from the list. Of course, you can still load them from the windows menu by choosing **Window > Brush Libraries** and choosing the brush file from the list there.

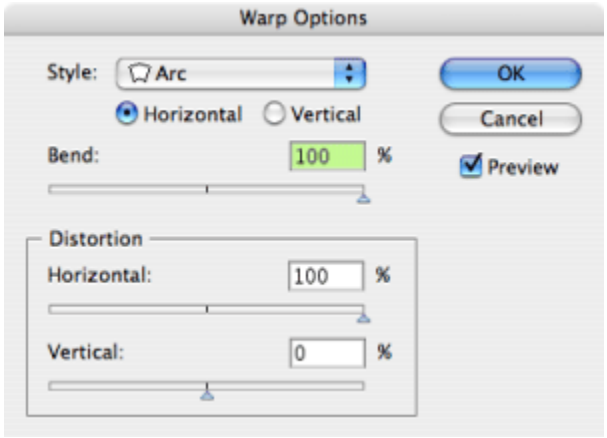
The last entry in the list is **Other Library**. Choosing this allows you to browse your hard drives or external or removable drives for brush files to load.

Shamrock Rainbow

Step 1. Use the line tool to draw a straight line and apply the shamrock brush. Make duplicates of the and change the stroke color on each so you have one each of red, orange, yellow, green, blue, indigo, and violet.

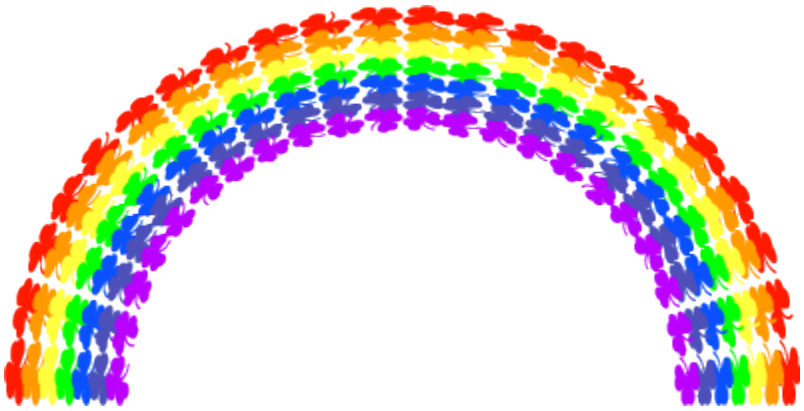
Step 2. Select all of the rows of shamrocks and go to **Object > Group** to make a grouping of the 8 rows of shamrocks.

Step 3. Now let's warp the rainbow. Go to **Effect > Warp**. I encourage you to play with the settings to see what they do. I'll show you a couple examples and the settings I used.

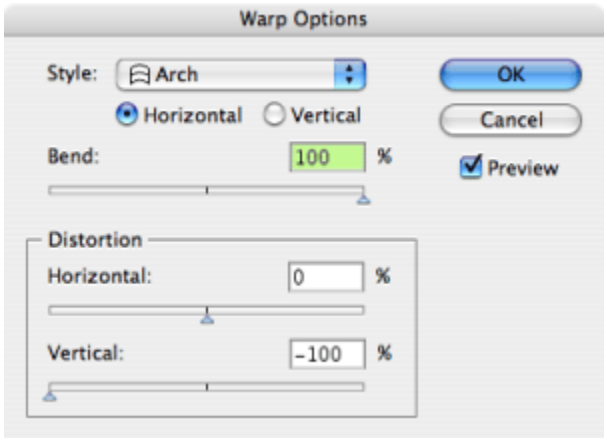


The above settings give you a rainbow like this that can be used for a pot of gold graphic:

Change the horizontal distortion back to 0% for this:



These settings:

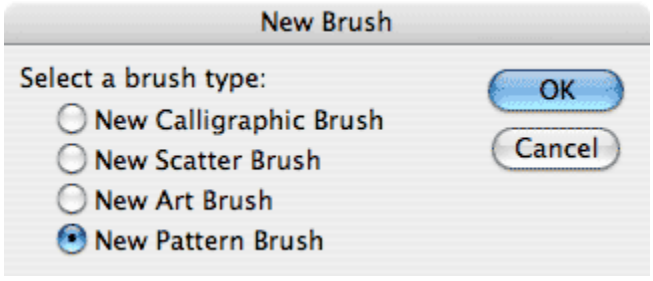


Give you a rainbow fan (or maybe a peacock tail!):

Pattern Brush

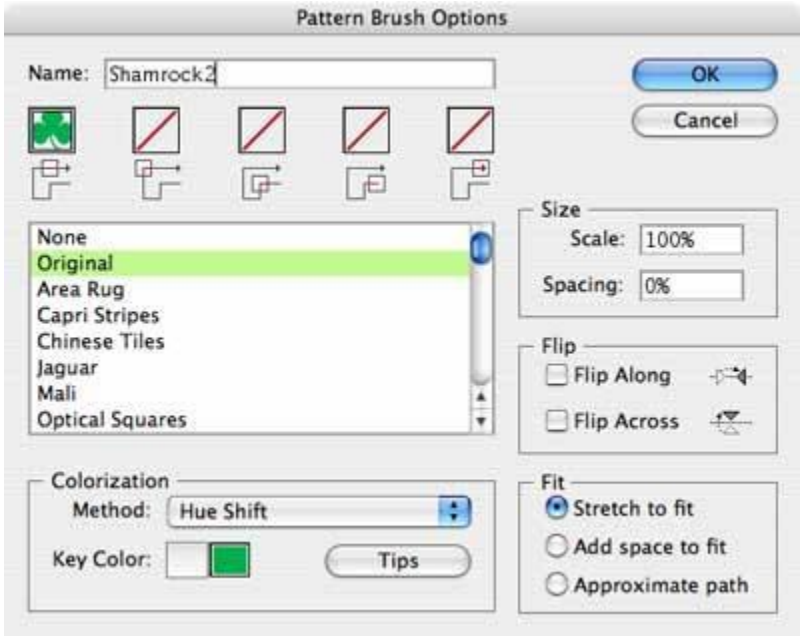
A pattern brush has slots for the graphics (which are called 'tiles') that will be repeated along the lines and the corners of the brush. The more slots you fill with tiles, the more complete the brush will be even on complex cornered lines that twist and turn in many directions. To make a pattern brush, you will need one of those duplicate shamrocks you created way back in the beginning of this tutorial.

Step 1. Make sure the Brush palette is open, and from the palette options menu choose **New Brush**. This time, choose **Pattern Brush**, and click OK.



Step 2. The pattern Brush options should be open now and you will be able to see the shamrock in one of the slots. Look at the diagram under the slot that holds the shamrock. It will tell you where this portion of the brush will be used when you draw. Notice some of the options are the

same as those in the Scatter Brush options: **Name** the brush. I used Shamrock2. **Size and Spacing** are here, but you don't have choices for random or pressure. The size and spacing will be fixed at the values you specify here. **Colorization** is the same as it was in the Scatter brush options. Choose **Hue Shift** here again.

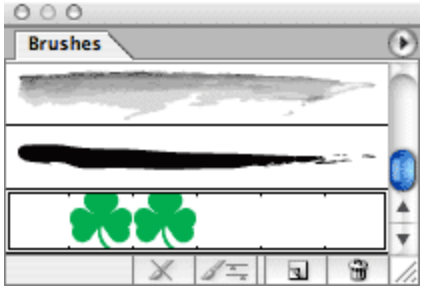


Flip lets you flip the tile along the X or Y axis (or both if you wish).

Fit: This determines how the tiles are laid along the path.

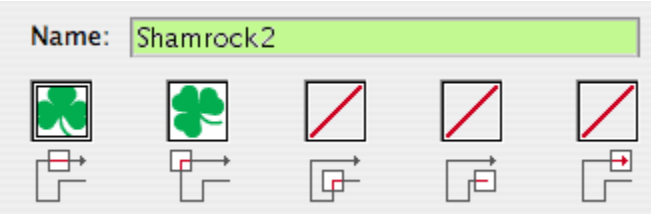
1. **Stretch to fit** is the default. It can distort your tiles so you may not want to use it all the time. Sometimes one of the other options is a better choice.
2. Choose **Approximate Path** (which is for rectangular paths only) to fit tiles to the closest approximate path without distorting the tiles. However, this option applies the pattern slightly inside or outside the path, rather than centered on the path, to maintain even tiling.
3. **Add space to fit** distributes the tiles evenly without distortion, but it can leave unsightly gaps so you will need to experiment when making your own brushes.

Choose **Stretch to Fit** and click OK to close the brush options. The brush palette looks like this with two slots filled:



If we were to use this brush now it looks great on an ellipse or circle. You can see the problem right away if you apply the brush to a square. There are no corners!

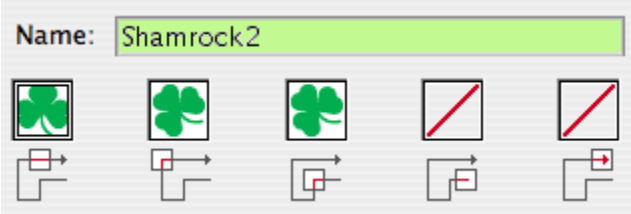
Step 3. For the first corner we need to rotate the shamrock. Go to **Object > Transform > Rotate** and enter 45 to rotate the shamrock 45°. Click OK. Hold the Option key (Mac) or the Alt key (PC) and drag the rotated shamrock to the first slot and drop it. Note: If you forget to hold the OPT/ALT key as you drag and drop the tile into the slot, Illustrator will try to create a new brush. If that happens, hold the OPT/ALT key and try again. The options will open again and you can see we have filled the first corner slot. Notice the next slot in line is an inner corner. Click OK. When Illustrator asks, choose **Apply to Strokes**.



The tiles in the brushes palette now look like this:

The square now has corners. A more intricate shape with inner corners would still need more help though so we aren't done yet.

Step 4. Select the shamrock again, and without rotating, hold the option or alt key and drag the shamrock to the next empty slot and drop it in. In the options, you should have this:



Click OK and choose **Apply to Strokes** again when asked. The brushes palette now have 4 slots filled, and a shape with inner corners looks good.

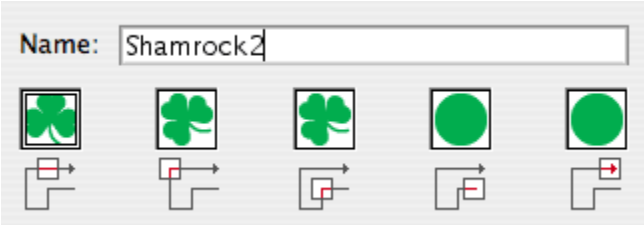
Step 5. The last two slots can be filled with the same shamrock we used at the start, left blank, or with something completely different. They only time they are used is at the beginning and ending of a straight line, arc, or other open shape. If left blank, they will use the first added tile, which works fine. Or you can add an arrowhead, circle, square, or other tile to make the end and beginning different from the rest of the brush. Here's a straight line if you don't add any tiles to the last two slots:

Step 6. To add circles like these to the last two slots, use the ellipse tool to draw a circle. **Opt/Alt+Drag** the circle to the next empty slot in the brushes palette.

Step 7. When the brush options open, click OK, and choose **Apply to Strokes** when asked.

Step 8. **Opt/Alt+Drag** the circle to the last empty slot in the brushes palette.

Step 9. When the brush options open, click OK, and choose **Apply to Strokes** when asked.



Now the brush palette slots are full, and the straight line has a beginning and ending tile added. Save your brushes as before, and make sure to have used them on the image before saving!

Using the brush as a stationery border

Make a new document and use the rectangle or ellipse shape tool to draw a border . Load the brush as above and use it on your border. Make the brush larger if you wish. If you are going to print the page, make sure that the outer edge of the brushed area falls within the printable area as defined by your printer. You can view this area by going to **View > Show Page Tiling**. Add any other text or decorations you wish and save the file. You can also use it for accents along with the rainbow brush and Shamrock symbol we'll be making in a minute.

Shamrock Symbols

Symbols are graphics you might want to use later and not have to recreate. Even graphics with gradient fills or gradient meshes can be saved as a symbol for use later. To save a graphic as a symbol, simply grab it and drag it to the symbols palette and drop it. It's now a symbol and you can use any of the symbol tools on it. To save the symbol to be loaded later, however, there are a couple rules you have to follow.

1. Drag the symbol to the page from the Symbols palette to use it. Like the brush, it has to be used on the page to be saved.

2. Delete all unused symbols, graphic styles, brushes, and swatches as you did when you saved the brush.
3. Delete the symbol and any other artwork from the page.
4. Go to **File > Save As** and save the file. I recommend using the word 'symbol' (or something like sym that you know means 'symbol' in the file name (shamrock_sym.ai) so you know at a glance it's a symbol file. Save it in Illustrator/presets/symbols or anywhere on your hard drive or an external drive to be loaded later.
5. When you want to use them, symbol files are loaded in the same manner as brushes.
6. Because symbols are vector, they can be resized as desired with no loss of quality.

Last time we made a gradient mesh shamrock with text. You can even make a symbols of text, or combinations of objects and text. Symbols can be used for any graphic you use frequently, like a company logo or holiday designs.

You can download my St. Patrick's Day symbols in a zip file here. Unzip the file and place it in your Illustrator/Presets/Symbols folder.