

4 EDITING AND COMBINING SHAPES AND PATHS

Lesson overview

In this lesson, you'll learn how to do the following:

- Cut with the Scissors tool.
- Join paths.
- Work with the Knife tool.
- Outline strokes.
- Work with the Eraser tool.
- Work with the Shape Builder tool.
- Work with Pathfinder commands to create shapes.
- Create a compound path.
- Work with the Reshape tool.
- Edit strokes with the Width tool.



This lesson takes approximately 45 minutes to complete. Please log in to your account on peachpit.com to download the lesson files for this chapter, or go to the “Getting Started” section at the beginning of this book and follow the instructions under “Accessing the lesson files and Web Edition.”

Your Account page is also where you'll find any updates to the chapters or to the lesson files. Look on the Lesson & Update Files tab to access the most current content.



Soon after you begin creating simple paths and shapes, you will most likely want to take them further in order to create more complex artwork. In this lesson, you'll explore how to both edit and combine shapes and paths.

Starting the lesson

In Lesson 3, “Using Shapes to Create Artwork for a Postcard,” you learned about creating and making edits to basic shapes. In this lesson, you’ll take basic shapes and paths and learn how to both edit and combine them to create artwork in order to finish a poster about camping.

Note: If you have not already downloaded the project files for this lesson to your computer from your Account page, make sure to do so now. See the “Getting Started” section at the beginning of the book.

1 To ensure that the tools function and the defaults are set exactly as described in this lesson, delete or deactivate (by renaming) the Adobe Illustrator CC preferences file. See “Restoring default preferences” in the “Getting Started” section at the beginning of the book.

2 Start Adobe Illustrator CC.

3 Choose File > Open. Locate the file named L4_end.ai, which is in the Lessons > Lesson04 folder that you copied onto your hard disk, and click Open. This file contains the finished artwork.



4 Choose View > Fit All In Window; leave the file open for reference, or choose File > Close (I closed it).

5 Choose File > Open. In the Open dialog box, navigate to the Lessons > Lesson04 folder, and select the L4_start.ai file on your hard disk. Click Open.



Tip: By default, the .ai extension shows on macOS, but you could add the extension on either platform in the Save As dialog box.




6 Choose File > Save As. In the Save As dialog box, change the name to **HappyCamper.ai** (macOS) or **HappyCamper** (Windows), and choose the Lesson04 folder. Leave the Format option set to Adobe Illustrator (ai) (macOS) or the Save As Type option set to Adobe Illustrator (*.AI) (Windows), and click Save.


7 In the Illustrator Options dialog box, leave the Illustrator options at their default settings, and click OK.

8 Choose Window > Workspace > Reset Essentials.


Note: If you don’t see Reset Essentials in the Workspace menu, choose Window > Workspace > Essentials before choosing Window > Workspace > Reset Essentials.

Editing paths and shapes

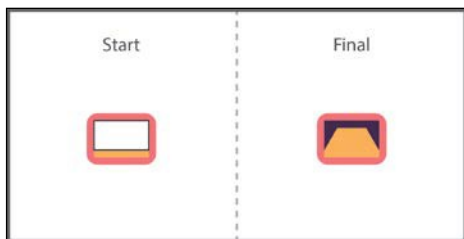
In Illustrator, you can edit and combine paths and shapes in a variety of ways to achieve the artwork you want. Sometimes, to get the artwork you desire, you start with simpler paths and shapes and use different methods for achieving more complex paths. This includes working with the Scissors tool () , the Knife tool () , and the Eraser tool () ; outlining strokes; joining paths; and more.

 **Note:** You'll explore other methods for transforming artwork in Lesson 5, "Transforming Artwork."


Cutting with the Scissors tool

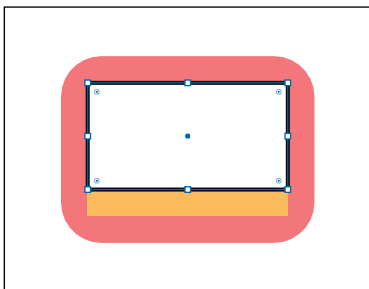
There are several tools that allow you to cut and divide shapes. You'll start with the Scissors tool () , which splits a path at an anchor point or on a line segment and makes an open path. Next, you'll cut a rectangle with the Scissors tool and reshape it to make curtains in a camping trailer illustration.

- 1 Click the View menu and make sure that the Smart Guides option is selected (a checkmark appears).
- 2 Choose 2 Window from the Artboard Navigation menu in the lower-left corner of the Document window. Choose View > Fit Artboard In Window.



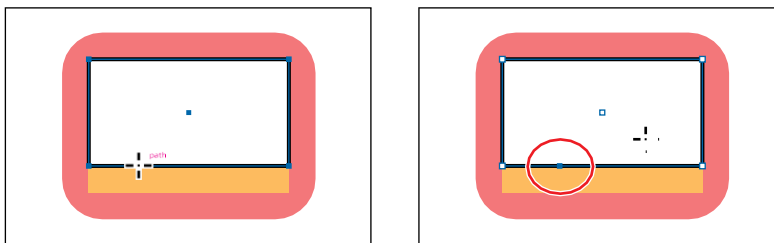
An example of what you will create is labeled "Final" on the right side of the artboard. You will work with the artwork labeled "Start," on the left.

- 3 Select the Selection tool () in the Tools panel, and click the white shape on the left to select it.
- 4 Press Command++ (macOS) or Ctrl++ (Windows) a few times to zoom in to the selected artwork.



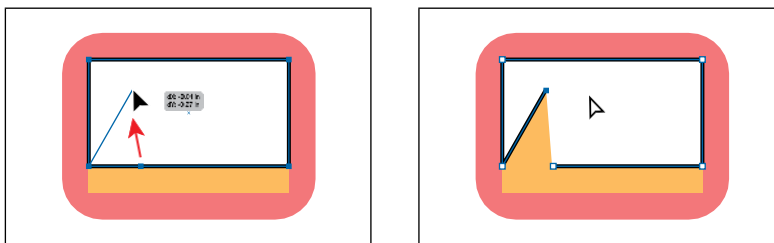
Note: If you don't click directly on a point or path, you will see a warning dialog box. You can simply click OK and try again.

- 5 With the shape selected, in the Tools panel, click and hold down mouse button on the Eraser tool (🖌), and select the Scissors tool (✂). Position the pointer over the bottom edge of the shape (see the figure). When you see the word “path,” click to cut the path at that point, and then move the pointer away.

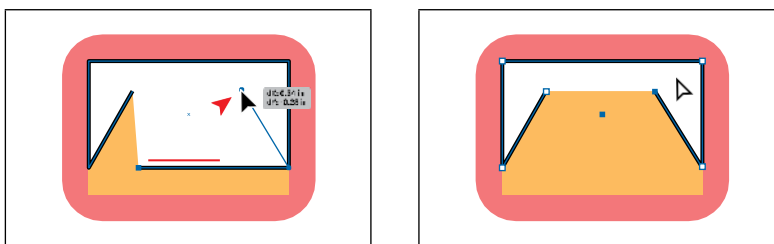


Cuts made with the Scissors tool must be on a line or a curve rather than on an end point of an open path. Clicking the stroke of a shape, the rectangle in this example, with the Scissors tool, the path is cut where you click so that it becomes open (a path with two end points).

- 6 Select the Direct Selection tool (⬮) in the Tools panel. Move the pointer over the selected (blue) anchor point and drag it up.




- 7 Drag the other anchor point, from where you originally cut the shape with the scissors, up and to the right (see the figure).



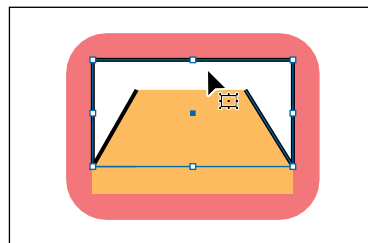
Notice how the stroke (the black border) doesn't go all the way around the white shape. That's because cutting with the Scissors tool makes an open path. If you only want to fill the shape with a color, it doesn't have to be a closed path. It is, however, necessary for a path to be closed if you want a stroke to appear around the entire fill area.

Joining paths

Suppose you draw a “U” shape and later decide you want to close the shape, essentially joining the ends of the “U” with a straight path. If you select the path, you can use the Join command to create a line segment between the end points, closing the path. When more than one open path is selected, you can join them to create a closed path. You can also join the end points of two separate paths. Next, you will join the ends of the white path to create a single closed shape.

- 1 Select the Selection tool  in the Tools panel. Click away from the white path to deselect it and then click in the white fill to reselect it.

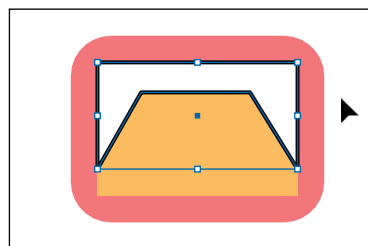
This step is important because only one anchor point was left selected from the previous section. If you were to choose the Join command with only one anchor point selected, an error message would appear. By selecting the whole path, when you apply the Join command, Illustrator simply finds the two ends of the path and connects them with a straight line.





Tip: If you wanted to join specific anchor points from separate paths, select the anchor points, and choose Object > Join > Path or press Command+J (macOS) or Ctrl+J (Windows).

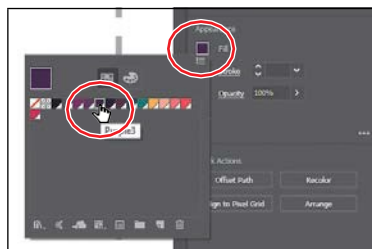
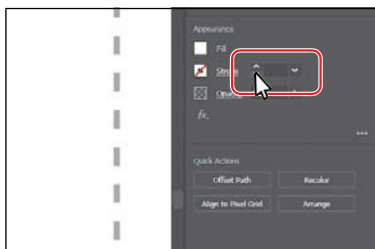
- 2 Choose Object > Path > Join.

When you apply the Join command to two or more open paths, Illustrator first looks for and joins the paths that have end points stationed closest to each other. This process is repeated every time you apply the Join command until all paths are joined.



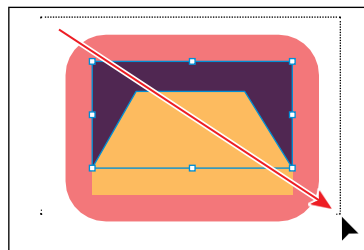
Tip: In Lesson 6, “Creating an Illustration with the Drawing Tools,” you’ll learn about the Join tool , which allows you to join two paths at a corner, keeping the original curve intact.

- 3 In the Properties panel on the right (Window > Properties), change the stroke to 0 by clicking the down arrow until the stroke is removed.
- 4 Click the Fill color box (white) in the Properties panel, make sure the Swatches option  is selected in the panel that appears, and click to select the color named Purple3.




Tip: To group selected content, you can also click the Group button in the Quick Actions section of the Properties panel.

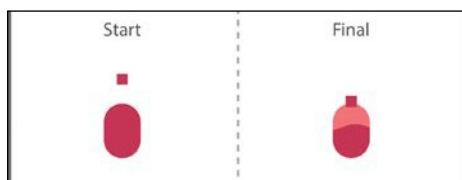
- 5 Drag across the window shapes to select them.
- 6 Choose Object > Group.
- 7 Choose Select > Deselect and then choose File > Save.



Cutting with the Knife tool


Another way to cut a shape is by using the Knife tool . To cut with the Knife tool, you drag across a shape, and the result is two closed paths.


- 1 Choose 3 Tank from the Artboard Navigation menu in the lower-left corner of the Document window.



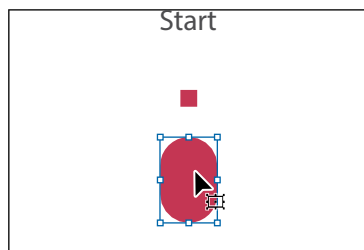
An example of what you will create is labeled “Final” on the right side of the artboard. You will work with the artwork labeled “Start,” on the left.



- 2 Choose View > Fit Artboard In Window to ensure it fits in the Document window.


Note: You can  multiple vector objects and cut them at one time with the Knife tool.

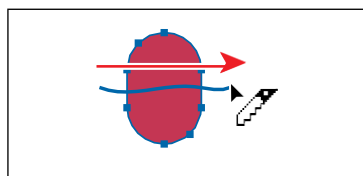
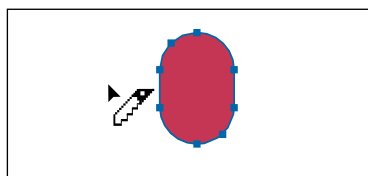
- 3 Select the Selection tool , and click the pink oval shape under the artwork labeled “Start.”


If an object is selected, the Knife tool will only cut that object. If nothing is selected, it will cut any vector objects it touches.



- 4 Click and hold down the mouse on the Scissors tool , and select the Knife tool .

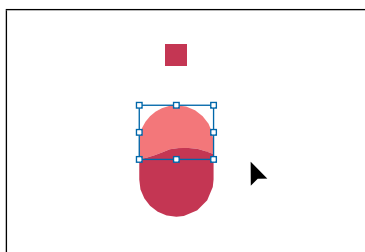
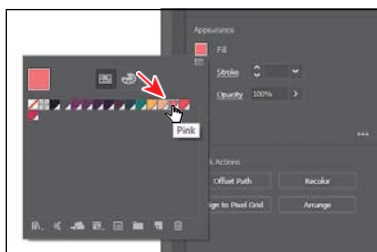
- 5 Move the Knife pointer  to the left of the selected shape. Drag across the shape to cut it into two.



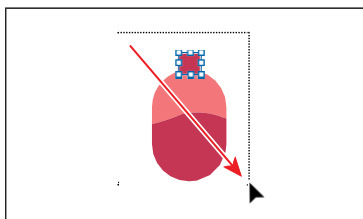
Tip: Pressing the Caps Lock key will turn the Knife tool pointer into a more precise cursor . This can make it easier to see where the cut will happen.

Notice how dragging across a shape with the Knife tool makes a very free-form cut that is not straight at all.

- 6 Choose Select > Deselect.
- 7 Select the Selection tool (☞), and click the new, top shape (see the following figure).
- 8 Click the Fill color box in the Properties panel, make sure the Swatches option (☑) is selected in the panel that appears, and click to select the color named Pink.



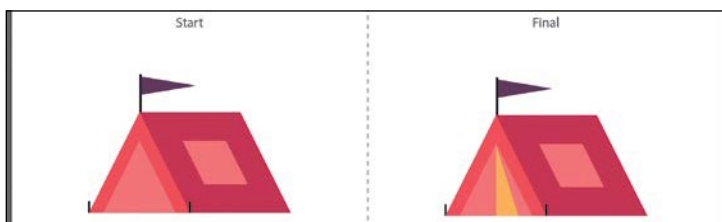
- 9 Drag the small, red square that is above the shapes, down onto the shapes you cut.
- 10 Drag across all of the tank shapes labeled "Start," to select them.
- 11 Choose Object > Group.
- 12 Choose Select > Deselect.



Cutting in a straight line

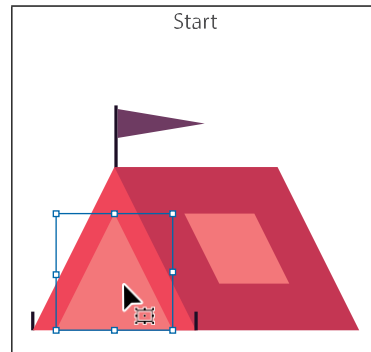
Next, you'll cut artwork in a straight line with the Knife tool. Pressing the Option (macOS) or Alt (Windows) key allows you to cut in a straight line with the Knife tool. Pressing the Shift key as well constrains the cut to 45 degrees.

- 1 Choose 4 Tent from the Artboard Navigation menu in the lower-left corner of the Document window.



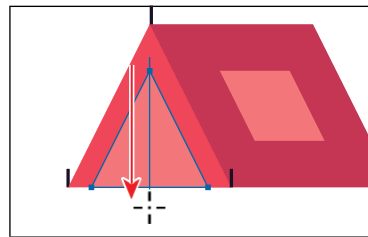
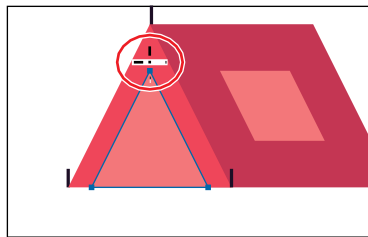
An example of what you will create is labeled "Final" on the right side of the artboard. You will work with the artwork labeled "Start," on the left. You'll cut the tent opening shape into several paths. This requires you to cut in straight lines.

- 2 Choose View > Fit Artboard In Window.
- 3 With the Selection tool (⌘) selected, click the pink triangle shape under the artwork labeled “Start.”
- 4 Choose View > Zoom In, twice, to zoom in to the artwork.
- 5 Select the Knife tool (⌘). Position the pointer just above the top point of the selected triangle. Press the Caps Lock key to turn the Knife tool pointer into a precise cursor (⌘).

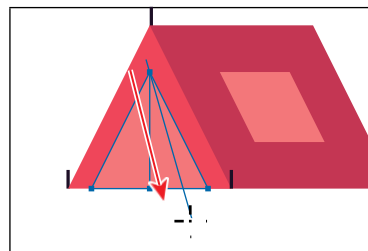
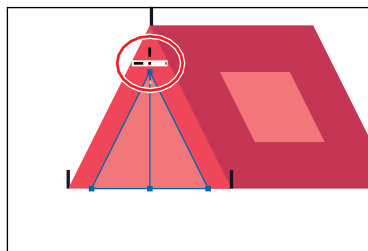


The pointer now appears as cross hairs and can make it easier to see exactly where you will begin cutting.

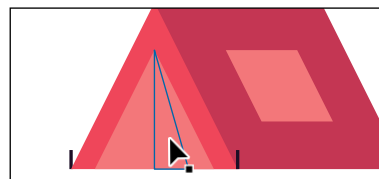
- 6 Press and hold Option+Shift (macOS) or Alt+Shift (Windows), and drag down, all the way across the shape to cut it into two, in a completely straight line. Release the mouse button and then the keys.



- 7 Press and hold Option (macOS) or Alt (Windows), and drag from just above the top of the selected triangle, down, at a slight angle, all the way across the shape to cut it into two. Release the mouse button and then the key.

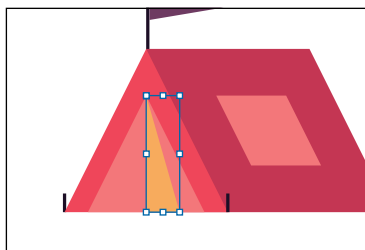
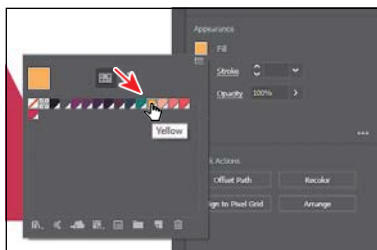


- 8 Choose Select > Deselect.
- 9 Select the Selection tool (⌘), and click the middle, pink triangle.

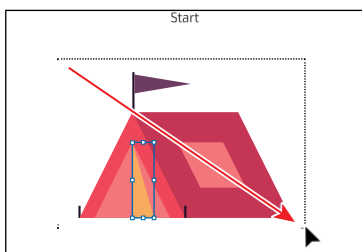


Note: Pressing **⌘** Option/Alt key keeps the cut straight, and pressing the Shift key constrains the cutting to a multiple of 45°.

- 10 Click the Fill color box in the Properties panel, make sure the Swatches option (📄) is selected in the panel that appears and click to select the color named Yellow.



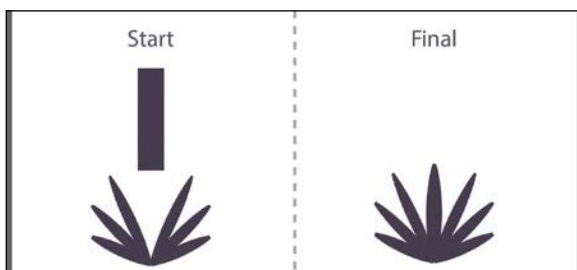
- 11 Drag across all of the tent shapes labeled "Start," to select them.
- 12 Choose Object > Group.
- 13 Depress the Caps Lock key.



Outlining strokes


Paths, like a line, can show a stroke color but not a fill color by default. If you create a line in Illustrator and want to apply both a stroke and a fill, you can outline the stroke of a path, which converts it into a closed shape (or compound path). Next, you'll outline the stroke of a line so you can erase parts of it in the next section.

- 1 Choose 5 Plant from the Artboard Navigation menu in the lower-left corner of the Document window.




An example of what you will create is labeled "Final" on the right side of the artboard. You'll work with the artwork labeled "Start," on the left.

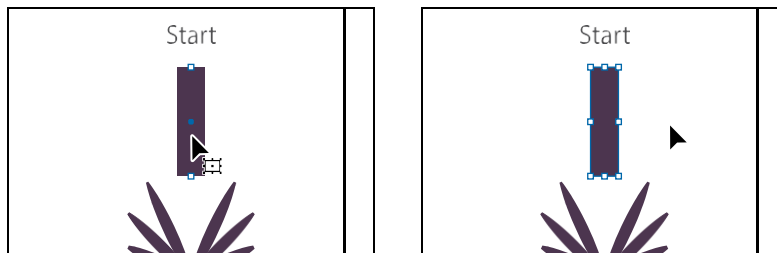
- 2 Choose View > Fit Artboard In Window to ensure it fits in the Document window.

- 3 With the Selection tool (), select the purple rectangle labeled “Start.”

The rectangle is actually a path. You can tell it’s a path with a large stroke. In the Properties panel, you can see that the stroke weight is set to 20. In order to erase part of the path to make it the shape of one of the leaves, it will need to be a shape (rectangle), not a path.

Tip: After  a stroke, the shape you have may be composed of a lot of anchor points. You can choose Object > Path > Simplify to try to simplify the path, which usually means fewer anchor points.

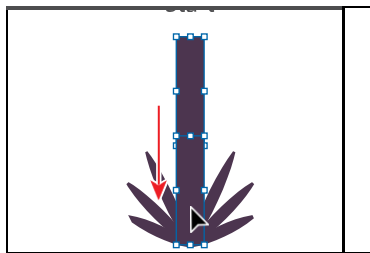
- 4 Choose Object > Path > Outline Stroke.



This creates a filled shape that is a closed path.

Note: If you outline the stroke and it shows as “Group” in the Selection Indicator at the top of the Properties panel, then there was a fill set on the line. If the artwork is a group, choose Edit > Undo Outline Stroke, apply a fill of None to the path, and try again.


- 5 Drag the shape into position like you see in the following figure. Leave the shape selected.



Next, you’ll erase parts of the shape.

Using the Eraser tool

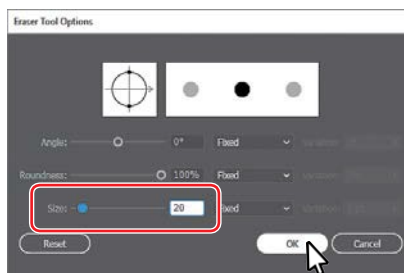
Note: You cannot erase raster images, text, symbols, graphs, or gradient mesh objects.

The Eraser tool () lets you erase any area of your vector artwork, regardless of the structure. You can use the Eraser tool on paths, compound paths, paths inside Live Paint groups, and clipping content. Whatever artwork you select is the only artwork you will erase. If you leave all objects deselected, you can erase any object that the tool touches, across all layers. Next, you’ll use the Eraser tool to erase part of the selected rectangle so it looks like a leaf.

- 1 Click and hold down the mouse button on the Knife tool (), and select the Eraser tool () in the Tools panel.

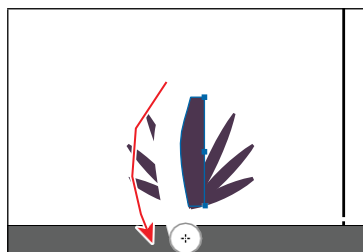
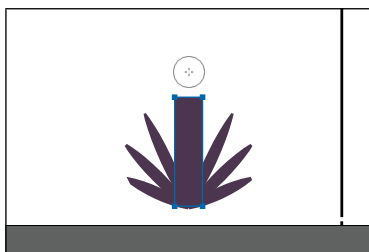
- 2 Double-click the Eraser tool (🔪) in the Tools panel to edit the tool properties. In the Eraser Tool Options dialog box, change Size to **20** pt to make the eraser larger. Click OK.

You can change the Eraser tool properties, depending on what your erasing needs are.



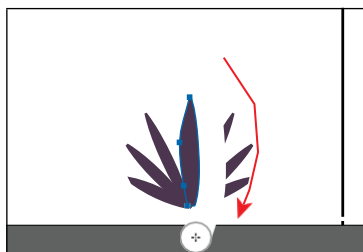
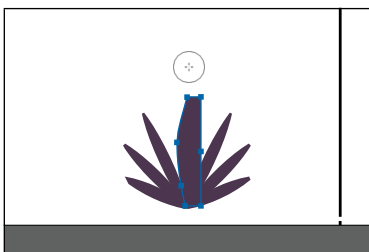
Tip: With the Eraser tool selected, you could also click the Tool Options button at the top of the Properties panel to see the options dialog box.

- 3 Position the pointer above the selected purple shape. Drag down the left side of the shape to erase it.

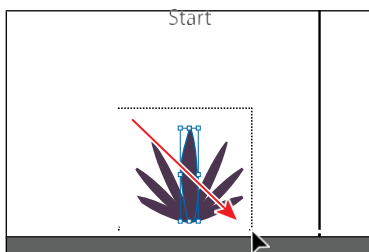


When you release the mouse button, part of the shape is erased, and the shape is still a closed path.

- 4 Position the pointer above the selected purple shape. Drag down the right side of the shape to erase it.



- 5 Select the Selection tool (🔍) and drag across all of the plant shapes labeled "Start," to select them.

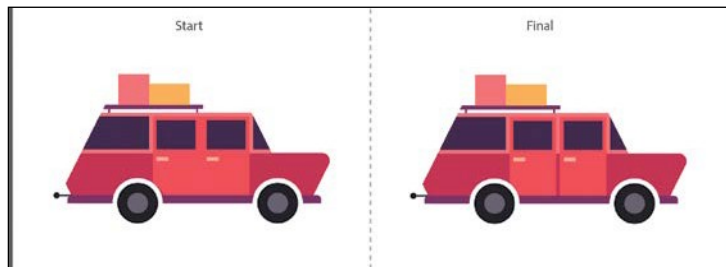


- 6 Choose Object > Group.

Erasing in a straight line

You can also erase in a straight line, which is what you'll do next.

- 1 Choose 6 Car from the Artboard Navigation menu in the lower-left corner of the Document window.



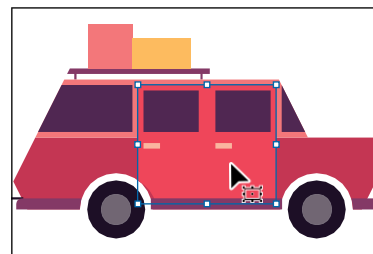
An example of what you will create is labeled “Final” on the right side of the artboard. You will work with the artwork labeled “Start,” on the left. You'll select and erase the single door shape to make two doors.

- 2 Choose View > Fit Artboard In Window to ensure it fits in the Document window.

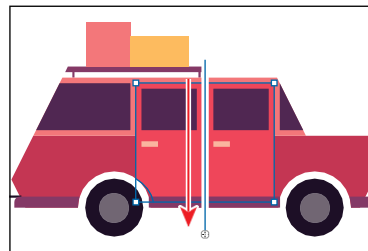
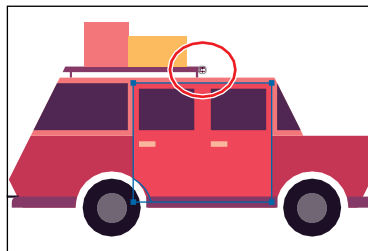
- 3 Select the Selection tool (⬚), and click to select the door shape labeled “Start.”

- 4 Choose View > Zoom In a few times to zoom in closer.

- 5 Double-click the Eraser tool (⬮) to edit the tool properties. In the Eraser Tool Options dialog box, change Size to 5 pt to make the eraser smaller. Click OK.



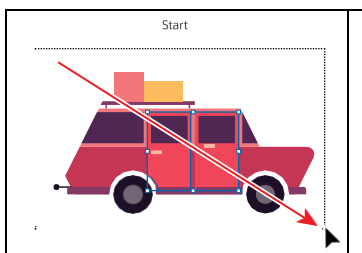
- 6 With the Eraser tool (⬮) selected, move the pointer above the middle of the selected shape. Press the Shift key, and drag straight down. Release the mouse button and then the Shift key.



Tip: If you need to erase a large part of a shape, you can always adjust the eraser size by using the Eraser Tool Options dialog box or by pressing either of the bracket keys ([or]).

It may look like you erased other parts of the car, but since nothing else was selected, you didn't. The selected door shape is now two separate shapes, both closed paths.

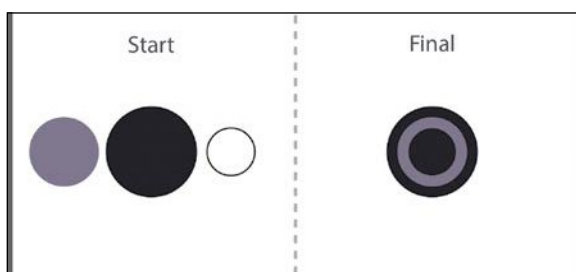
- 7 Select the Selection tool and drag across all of the car shapes labeled “Start” to select them.
- 8 Click the Group button in the Quick Actions section of the Properties panel to the right of the document.
- 9 Choose File > Save.



Creating a compound path

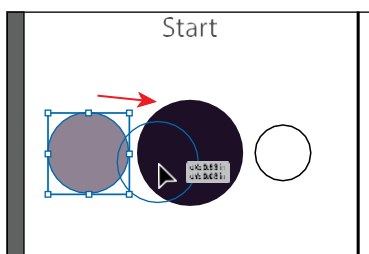
Compound paths let you use a vector object to cut a hole in another vector object. Whenever I think of a compound path, I think of a doughnut shape, which can be created from two circles. Holes appear where paths overlap. A compound path is treated like a group, and the individual objects in the compound path can still be edited or released (if you don’t want them to be a compound path anymore). Next, you’ll create a compound path to create some art for a wheel.

- 1 Choose 7 Wheel from the Artboard Navigation menu in the lower-left corner of the Document window.



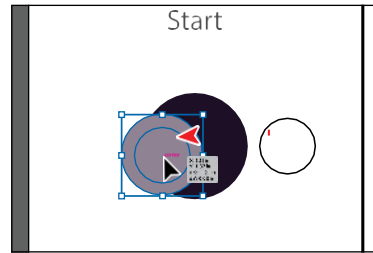
An example of what you will create is labeled “Final” on the right side of the artboard. You will work with the artwork labeled “Start” on the left. You’ll create a wheel from the shapes labeled “Start.”

- 2 Choose View > Fit Artboard In Window, if necessary.
- 3 With the Selection tool (⌘) selected, select the gray circle on the left, and drag it so it overlaps the larger dark circle to its right.



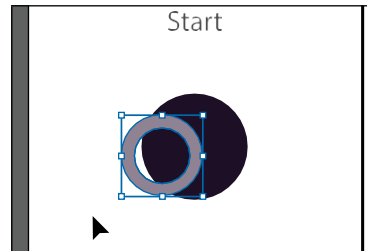
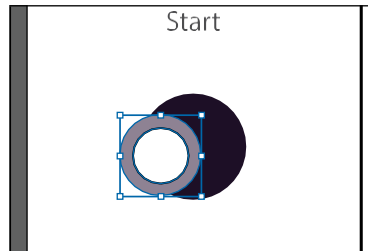
- 4 Drag the white shape on top of the gray circle and make sure it's centered.

Smart Guides will help you align the circles. You can also select the gray circle and the white circle and align them to each other using the Align options in the Properties panel on the right.



- 5 Shift-click the gray circle to select it along with the white circle.
- 6 Choose Object > Compound Path > Make, and leave the artwork selected.

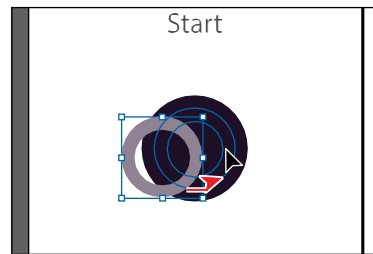
Tip: You can still edit the original shapes in a compound path like this one. To edit them, select each shape individually with the Direct Selection tool (P) or double-click the compound path with the Selection tool to enter Isolation mode and select the individual shapes.



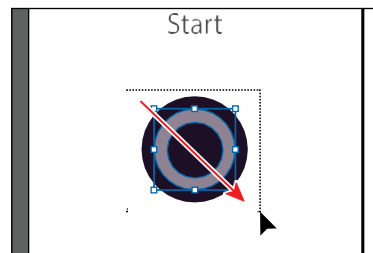
You can now see that the white circle has seemingly disappeared, and you can now see through the shape to the dark color of circle beneath. The white circle was used to “punch” a hole in the gray shape. With the shape still selected, you should see “Compound Path” at the top of the Properties panel to the right.

Note: When creating a compound path, the appearance attributes of the object lowest in the stacking order determine the appearance of the resulting compound path.

- 7 Drag the gray donut shape into the center of the darker circle behind it. The selected shape should be on top. If it isn't, choose Object > Arrange > Bring To Front.



- 8 Drag across all of the circle shapes labeled “Start” to select them.
- 9 Choose Object > Group.
- 10 Choose File > Save.



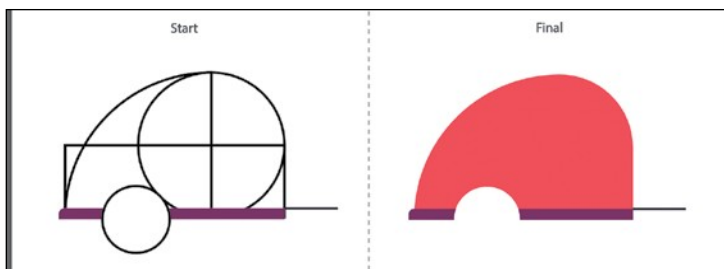
Combining shapes

A lot of the time, creating more complex shapes from simpler shapes can be easier than trying to create them with drawing tools like the Pen tool. In Illustrator, you can combine vector objects in different ways. The resulting paths or shapes differ depending on the method you use to combine the paths. In this section, you'll explore a few of the more widely used methods for combining shapes.

Working with the Shape Builder tool

The first method you'll learn for combining shapes involves working with the Shape Builder tool (⌘+Shift+B). This tool allows you to visually and intuitively merge, delete, fill, and edit overlapping shapes and paths directly in the artwork. Using the Shape Builder tool, you'll create a more complex trailer shape from a series of simpler shapes like circles and squares.

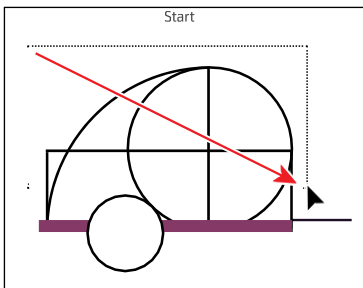
- 1 Choose 8 Trailer from the Artboard Navigation menu in the lower-left corner of the Document window.




An example of what you will create is labeled "Final" on the right side of the artboard. You will work with the artwork labeled "Start" on the left.

- 2 Choose View > Fit Artboard In Window to ensure it fits in the Document window.
- 3 With the Selection tool (⬚) selected, drag a marquee selection across the three shapes you see in the figure, labeled "Start," to select the shapes on the artboard. Make sure not to select the white circle.


To edit shapes with the Shape Builder tool (⌘+Shift+B), they need to be selected. Using the Shape Builder tool, you will now combine, delete, and paint these simple shapes to create a camper.

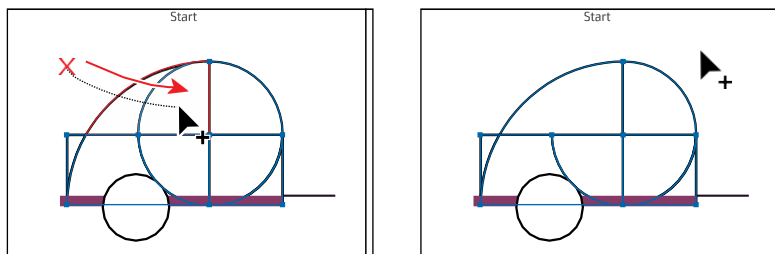


Tip: You can **⌘** press the Shift key and drag a marquee across a series of shapes to combine them. Pressing Shift+Option (macOS) or Shift+Alt (Windows) and dragging a marquee across selected shapes with the Shape Builder tool  selected allows you to delete a series of shapes within the marquee.

Note: Your final combined shapes may have a different stroke and/or fill, and that's okay. You'll change them shortly.

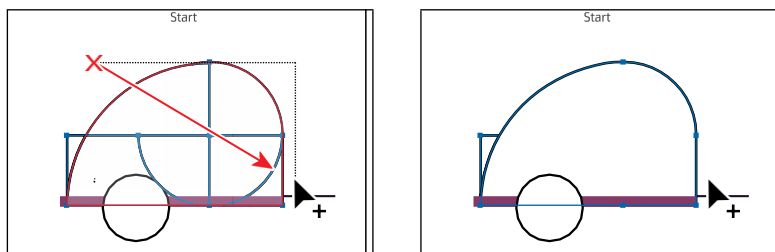
Note: When you position the pointer over the shapes, make sure you see the mesh within those shapes, before clicking to delete.

- 4 Select the Shape Builder tool  in the Tools panel. Position the pointer off the upper-left corner of the shapes, and drag from the red X in the figure to the right into the shapes. Release the mouse button to combine the shapes.





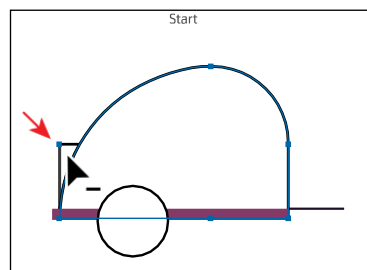
When you select the Shape Builder tool, the overlapping shapes are divided into separate objects temporarily. As you drag from one part to another, a red outline appears, showing you what the final shape will look like when the shapes are merged together, after releasing the mouse button.


- 5 Position the pointer off the upper-left corner of the shapes again. Press the Shift key and drag from the red X in the figure, down and to the right. Release the mouse button to combine the shapes.

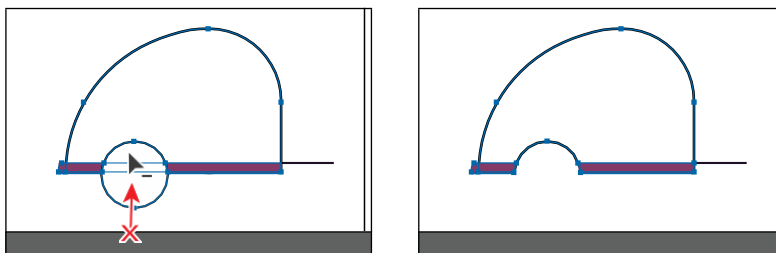


Next, you'll delete a few shapes.

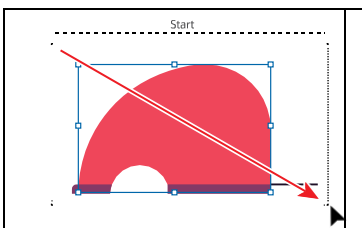
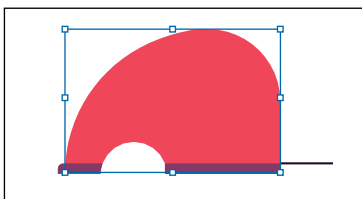
- 6 With the shapes still selected, hold down the Option (macOS) or Alt (Windows) key. Notice that, with the modifier key held down, the pointer shows a minus sign . Click the shape on the far left to delete it. See the figure for which shape to remove.
- 7 Select the Selection tool . Drag across the larger shape you combined, the purple bar and the white circle to select all three shapes.



- 8 Select the Shape Builder tool  and move the pointer below the white circle. Hold down the Option (macOS) or Alt (Windows) key and drag through the white circle, stopping before the top of the circle to remove it from the larger shape you combined.



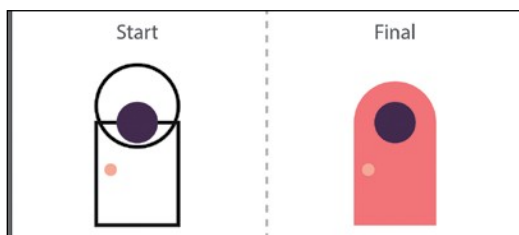
- 9 Choose Select > Deselect.
- 10 Select the Selection tool (black arrow), and click the edge of the larger shape to select it. Change the fill color in the Properties panel to the color named red 1 with the tooltip name that shows as “Red 1.” Change the stroke weight to 0.
- 11 Drag across the red shape, purple shape, and black line to select them all.
- 12 Choose Object > Group.



Combining objects using Pathfinder effects

Pathfinder effects, found in the Properties panel or the Pathfinder panel (Window > Pathfinder), are another way to combine shapes in different ways. When a Pathfinder effect such as Unite is applied, the original objects selected are *permanently* transformed.

- 1 Choose 9 Door from the Artboard Navigation menu in the lower-left corner of the Document window.

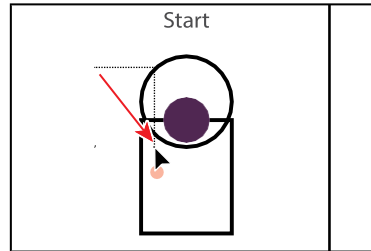


An example of what you will create is labeled “Final” on the right side of the artboard. You will work with the artwork labeled “Start” on the left. You’ll combine shapes in different ways to create a single door.

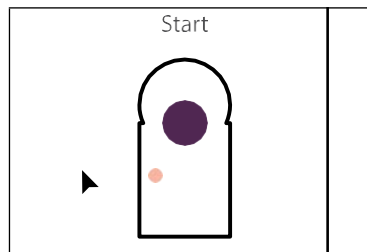
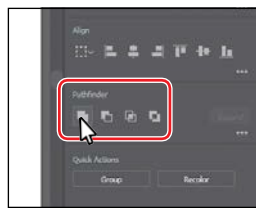
2 Choose View > Fit Artboard In Window.

3 With the Selection tool (☛) selected, drag across the circle and rectangle with the black strokes to select both objects.

You need to create a shape that looks like the door to the right of the shapes you selected, labeled “Final.” You will use the Properties panel and those shapes to create the final artwork.



4 With the shapes selected, in the Properties panel on the right, click the Unite button (☐) to *permanently* combine the two shapes.



5 Choose Edit > Undo Add to undo the Unite command and bring both shapes back. Leave them selected.

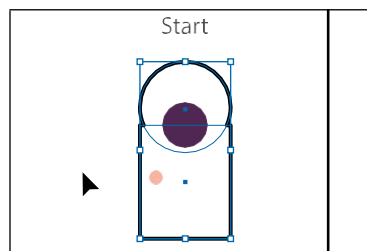
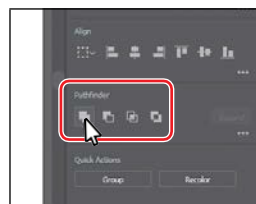
Note: The Unite button in the Properties panel produces a similar result as the Shape Builder tool, by combining the shapes into one.

Tip: Clicking More Options (☰) in the Pathfinder section of the Properties panel will reveal the Pathfinder panel, which has more options.

Understanding Shape Modes

In the previous section, the pathfinder effect made a permanent change to the shapes. When several shapes are selected, clicking the Pathfinders that are showing in the Properties panel by default while pressing the Option (macOS) or Alt (Windows) key creates a compound shape rather than a path. The original underlying objects of compound shapes are preserved. As a result, you can still select each original object within a compound shape. Using a shape mode to create a compound shape can be useful if you think that you may want to retrieve the original shapes at a later time.

1 With the shapes still selected, hold down the Option (macOS) or Alt (Windows) key, and click the Unite button (☐) in the Properties panel.

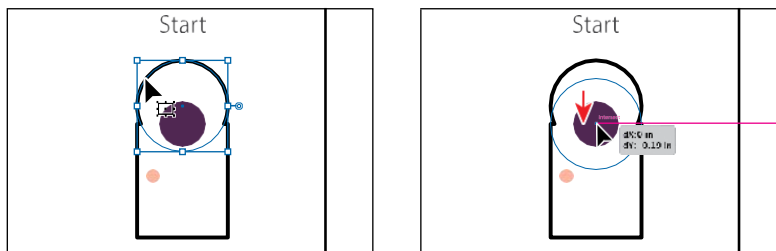


This creates a compound shape that traces the outline of what's left after the shapes are combined. You will still be able to edit both shapes separately.

- 2 Choose Select > Deselect to see the final shape.
- 3 With the Selection tool, double-click the black stroke of the newly combined shape to enter Isolation mode.
- 4 Click the edge of the circle at the top or drag across the path to select it.
- 5 Drag the selected circle from the blue dot in the center, straight down. As you drag, press the Shift key. Drag down until you see that a horizontal Smart Guide appears and the center of the circle is aligned with the top edge of the rectangle. When in position, release the mouse button and then the Shift key.

Tip: To edit the original shapes in a compound shape like this one, you can also select them individually with the Direct Selection tool (A).

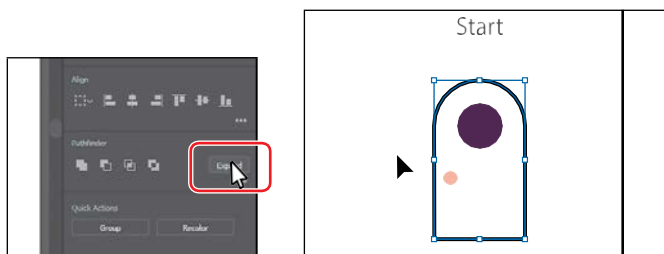
Note: You can **⌘** press the arrow keys to move the shape if you find it difficult to drag.



- 6 Press the Escape key to exit Isolation mode.

You will now expand the shape. Expanding a compound shape maintains the shape of the compound object, but you can no longer select or edit the original objects. You will typically expand an object when you want to modify the appearance attributes and other properties of specific elements within it.

- 7 Click away from the shape to deselect it and then click to select it again.
- 8 Click the Expand button in the Properties panel.



- 9 Change the fill color in the Properties panel to the color named Pink. Change the stroke weight to 0.
- 10 Drag across the shapes that make up the door to select them all.
- 11 Click the Group button toward the bottom of the Properties panel to group the content together.

Creating the trailer

In this short section, you'll drag all of the pieces for the trailer together and group them.

- 1 Choose View > Zoom Out several times.
- 2 Press the spacebar to access the Hand tool and drag in the Document window to see the wheel, door, window, and tank artboards.
- 3 With the Selection tool selected, drag the wheel, door, window, and tank artwork you created onto the trailer artwork labeled "Start." Position them like you see in the figure.

Note: You may find that with the Smart Guides on, it is difficult to position the content on the trailer. You can always turn off the Smart Guides (View > Smart Guides), then turn them on when you are finished dragging the artwork.

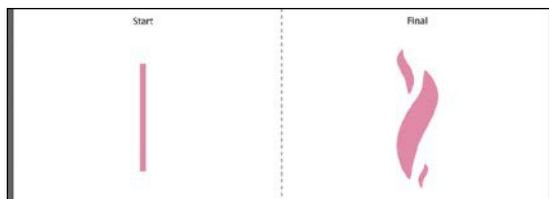


- 4 Drag across the trailer artwork and choose Object > Group.

Reshaping a path


In Lesson 3, "Using Shapes to Create Artwork for a Postcard," you learned about creating shapes and paths (lines). You can use the Reshape tool to stretch parts of a path without distorting its overall shape. In this section, you'll change the shape of a line, giving it a bit of curve, so you can turn it into a flame.

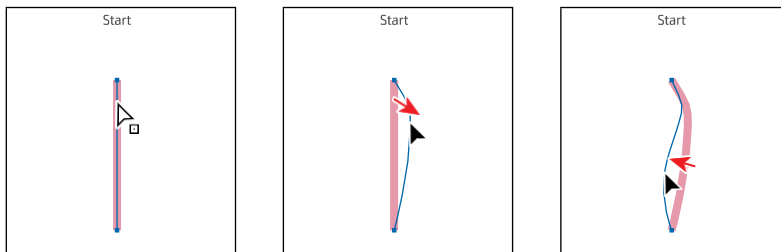
- 1 Choose 10 Flame from the Artboard Navigation menu in the lower-left corner of the Document window.



An example of what you will create is labeled "Final" on the right side of the artboard. You will work with the artwork labeled "Start" on the left. You'll reshape the straight line on the left to start.

- 2 Select the Selection tool (⌘) and click the line labeled "Start."
- 3 Click and hold down the mouse button on the Scale tool (⌘) and select the Reshape tool (⌘) from the tool menu.

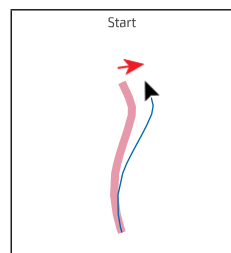
- 4 Move the pointer over the path. When the pointer changes to , drag away from the path to add an anchor point and reshape the path. Move the pointer farther down the path and drag the path to the left. You can look at the flame shape labeled “Final,” to the right, for guidance.



The Reshape tool can be used to drag an existing anchor point or path segment. If you drag from an existing path segment, an anchor point is created.

- 5 Move the pointer over the top anchor point of the path and drag it to the right a little. Leave the path selected.


All of the anchor points were selected in the path, which means the Reshape tool will adjust the entire path.





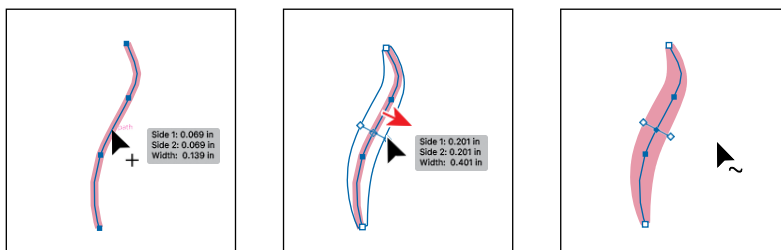
Note: You can use the Reshape path on a closed path, like a square or circle, but if the entire path is selected, the Reshape tool will add anchor points and reshape the path.

Note: Only one anchor point will be adjusted when dragging with the Reshape tool.

Using the Width tool

Not only can you adjust the weight of a stroke, like you did in Lesson 3, but you can alter regular stroke widths either by using the Width tool  or by applying width profiles to the stroke. This allows you to create a variable width along the stroke of a path. Next, you will use the Width tool to adjust the path you just reshaped to look like a flame.

- 1 Select the Width tool  in the Tools panel. Position the pointer over the middle of the path you just reshaped, and notice that the pointer has a plus symbol next to it () when over the path. If you were to drag, you would edit the width of the stroke. Drag away from the line, to the right. Notice that, as you drag, you are stretching the stroke to the left and right equally. Release the mouse when the measurement label shows Side 1 and Side 2 at *approximately* 0.2 in.



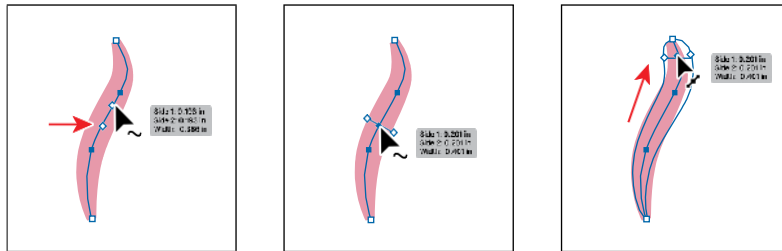
Tip: You can drag one width point on top of another width point to create a discontinuous width point. If you double-click a discontinuous width point, the Width Point Edit dialog box allows you to edit both width points.

You just created a variable stroke on a path, not a shape with a fill. The new point on the original path that's filled with blue is called the *width point*. The lines extending from the width point are the *handles*.

Tip: If you select a width point by clicking it, you can press Delete to remove it. If there was only one width point on a stroke, removing that point would remove the width completely.

Note: You don't have to position the pointer over the center of the line and drag to create another width point. You can drag from anywhere in the stroke area.

- 2 Click in a blank area of the artboard to deselect the point.
- 3 Position the pointer anywhere over the path, and the new width point you just created will appear (an arrow is pointing to it in the first part of the figure below). The width point you see on the path next to the pointer is where a new point would be created if you were to click.
- 4 Position the pointer over the original width point, and when you see lines extending from it and the pointer changes (↶), click and drag it up and down to see the effect on the path.

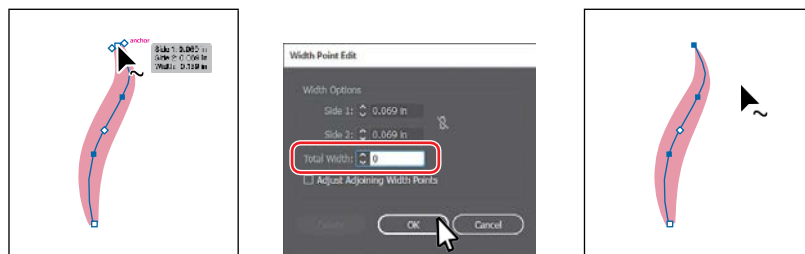


- 5 Choose Edit > Undo Width Point Change to return the width point to its original position on the path.

Aside from dragging to add a width point to a path, you can also double-click and enter values in a dialog box. That's what you'll do next.

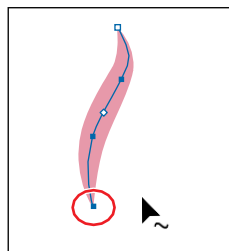
Tip: You can move the pointer over a width point, press the Option (macOS) or Alt (Windows) key, and drag to duplicate it.

- 6 Move the pointer over the top anchor point of the path, and notice that the pointer has a wavy line next to it (↶) and the word "anchor" appears (see the first part of the following figure). Double-click the point to create a new width point and to open the Width Point Edit dialog box.
- 7 In the Width Point Edit dialog box, change the Total Width to **0 in**, and click OK.

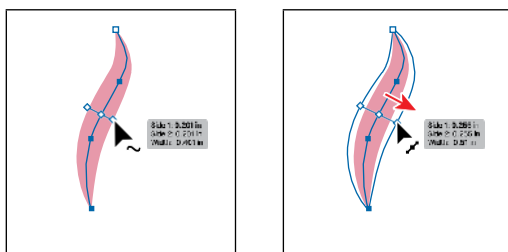


The Width Point Edit dialog box allows you to adjust the length of the width point handles together or separately, with more precision. Also, if you select the Adjust Adjoining Width Points option, any changes you make to the selected width point affect neighboring width points as well.

- 8 Move the pointer over the bottom anchor point of the path, and double-click. In the WidthPoint Edit dialog box, change the Total Width to **0 in**, and click OK.
- 9 Move the pointer over the original width point. When the width point handles appear, drag one of them away from the center of the path to make it a little wider. Leave the path selected for the next section.



Tip: You can **⌘** width point and Option-drag (macOS) or Alt-drag (Windows) one of the width point handles to change one side of the stroke width.

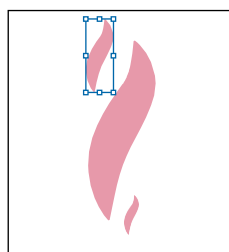
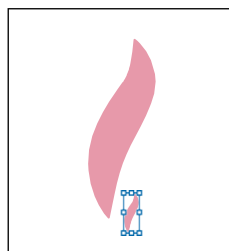


Tip: After **Ⓢ** the stroke width, you can save the variable width as a *profile* that you can reuse later, from the Stroke panel or the Control panel. To learn more about variable width profiles, search for “Painting with fills and strokes” in Illustrator Help (Help > Illustrator Help).

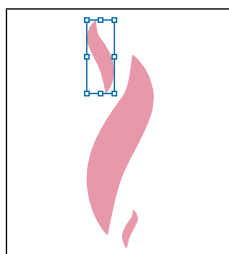
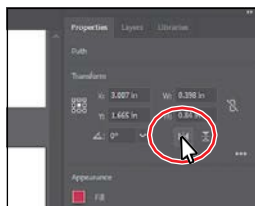
Finishing up the illustration

To finish the illustration, you will drag the artwork you grouped on each artboard into the main illustration on the left.

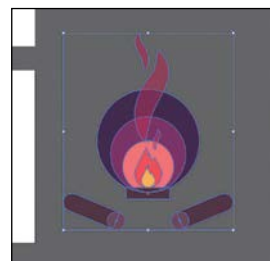
- 1 Select the Selection tool (**⌘**) and, with the path selected, choose Edit > Copy and then Edit > Paste to paste a copy.
- 2 With the copy selected, choose Object > Path > Outline Stroke so you can more easily scale the shape without having to adjust a stroke weight.
- 3 Shift-drag the corner of the path to make it smaller. Release the mouse button and then the key. Drag it into position like you see in the figure.
- 4 With the smaller copy selected, choose Edit > Copy and then Edit > Paste, scale the new copy larger, and position it like you see in the figure.



- 5 With the shape still selected, click the Flip Along Horizontal Axis option (↔) in the Properties panel. Drag the shape into position like you see in the figure.



- 6 Drag across the three flame shapes to select them all. Choose Object > Group.
- 7 Choose View > Zoom Out a few times so you can see the campfire artwork to the right of the artboard. Drag the group of flames onto the fire artwork to the right of the artboard.
- 8 Drag across all of the campfire shapes to select them. Choose Object > Group.
- 9 Choose View > Fit All In Window.
- 10 Choose View > Smart Guides to turn them off.
- 11 Drag each of the artwork groups you created, into the main illustration like you see in the figure.



You may want to adjust the size of each group so they fit within the existing artwork better. With the Selection tool, you can hold down the Shift key and drag a corner point to resize artwork proportionally. When finished resizing, release the mouse button and then the Shift key.



- 12 Choose View > Smart Guides to turn them on for the next lesson.
- 13 Choose File > Save and then choose File > Close.