6 Creating an Illustration with the Drawing Tools

Lesson overview

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

- Understand paths and anchor points.
- Draw curved and straight lines with the Pen tool.
- Edit curved and straight lines.
- Add and delete anchor points.
- Draw with the Curvature tool.
- Delete and add anchor points.
- Convert between smooth points and corner points.
- Create dashed lines and add arrowheads.
- Draw and edit with the Pencil tool.
- Work with the Join tool.

This lesson takes approximately 90 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.

Aside from creating artwork using shapes like in previous lessons, you can also create artwork using drawing tools such as the Pencil tool, Pen tool, and Curvature tool. With these tools, you can draw precisely, including drawing straight lines, curves, and complex shapes. You'll start with the Pen tool and use all of these tools and more to create an illustration.

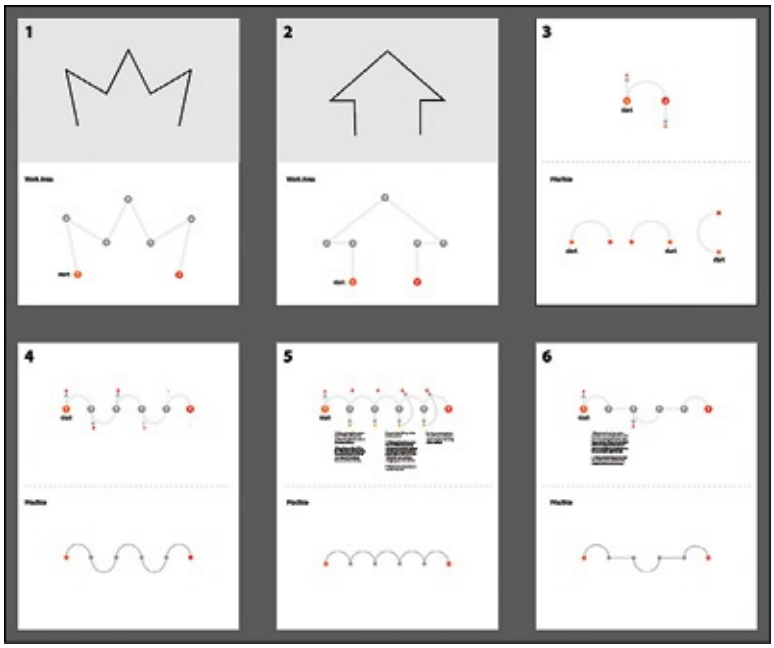
Starting the lesson

In the first part of this lesson, you'll come to understand paths and ease into drawing with the Pen tool after lots of practice.

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.

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.

2. Start Adobe Illustrator CC.
3. Choose File > Open, and open the L6_practice.ai file in the Lessons > Lesson06 folder on your hard disk.



The document is made up of six artboards, numbered 1 through 6. As you progress through the first part of this lesson, you will be asked to move between artboards.

4. Choose File > Save As. In the Save As dialog box, navigate to the Lesson06 folder, and open it. Rename the file to **PenPractice.ai**. Choose Adobe Illustrator (ai) from the Format menu (macOS), or choose Adobe Illustrator (*.AI) from the Save As Type menu (Windows). Click Save.
5. In the Illustrator Options dialog box, leave the default settings, and then click OK.
6. Choose Window > Workspace > Reset Essentials.

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

An intro to drawing with the Pen tool

The Pen tool ( ) is one of the main drawing tools in Illustrator that's used to create both freeform and more precise artwork and also plays a role in editing existing vector artwork. It's important to have an understanding of a tool like the Pen tool (or Curvature tool) when working with Illustrator. *Just know that it takes plenty of practice to feel comfortable with the Pen tool!*

In this first section, you'll begin to explore the Pen tool, and later in the lesson, you'll create artwork using the Pen tool and other tools and commands.

Tip: Adobe has created a simple game for learning the Pen tool. Check it out here: https://helpx.adobe.com/illustrator/how-to/pen-tool-game.html.

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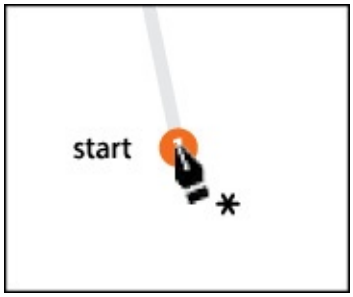
1. Choose 1 from the Artboard Navigation menu in the lower-left corner of the Document window.
2. Choose View > Fit Artboard In Window.
3. Select the Zoom tool ( ) in the Tools panel, and click twice in the bottom half of the artboard to zoom in.
4. Choose View > Smart Guides to turn off the Smart Guides. Smart Guides can be useful when you draw, but you won't need them now.
5. In the Properties panel to the right of the document, click the Fill color box, make sure the Swatches option ( ) is selected, and choose None ( ). Then, click the stroke color, and make sure that the Black swatch is selected. Make sure the stroke weight is also **1 pt** in the Properties panel.

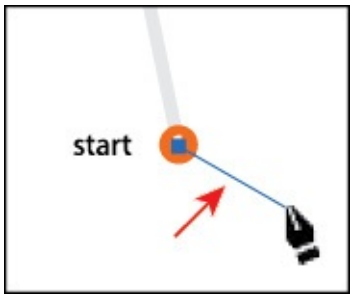
   When you begin drawing with the Pen tool, it's usually best to have no fill on the path you create because the fill can cover parts of the path you are trying to create. You can add a fill later, if necessary.
6. Select the Pen tool ( ) in the Tools panel. Position the pointer in the area labeled "Work Area" in the artboard, and notice the asterisk next to the Pen icon ( ), indicating that you'll create a new path if you begin drawing.
7. In the area labeled "Work Area," click and release on the orange point labeled 1, where you see "start," to set the first anchor point.

Note: If you see × instead of the Pen icon ( ), the Caps Lock key is active. Caps Lock turns the Pen tool icon into × for increased precision. After you begin drawing, with the Caps Lock key active, the Pen tool icon looks like this: +.



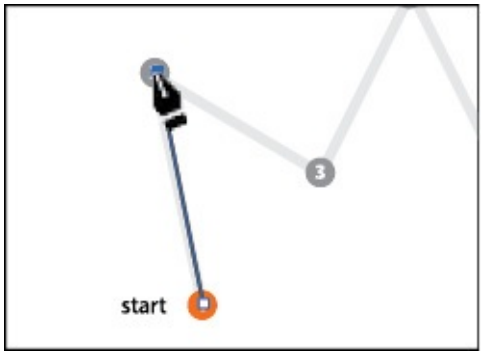
8. Move the pointer away from the point you just created, and you'll see a line connecting the first point and the pointer, no matter where you move the pointer.

   That line is called the Pen tool preview (or Rubber Band). Later, as you create curved paths, it will make drawing them easier because it is a preview of what the path will look like. Also notice that the asterisk has disappeared from next to the pointer, indicating that you are now drawing a path.



9. Position the pointer over the gray dot labeled 2. Click and release to create another anchor point.

   You just created a path. A simple path is composed of two anchor points and a line segment connecting the anchor points. You use the anchor points to control the direction, length, and curve of the line segment.



● **Note:** If the path looks curved, you have accidentally dragged with the Pen tool; choose Edit > Undo Pen and then click again without dragging.

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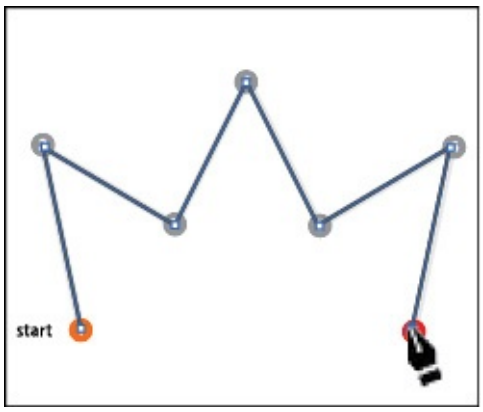
0. Continue clicking points 3 through 7, releasing the mouse button every time you click to create an anchor point.

   Notice that only the last anchor point is filled (not hollow like the rest of the anchor points), indicating that it is selected.



▶ **Tip:** You can toggle the Pen tool preview by choosing Illustrator CC > Preferences > Selection & Anchor Display (macOS) or Edit > Preferences > Selection & Anchor Display (Windows) to open the Preferences dialog box. In the dialog box, with the Selection & Anchor Display category options showing, deselect Enable Rubber Band For: Pen Tool.

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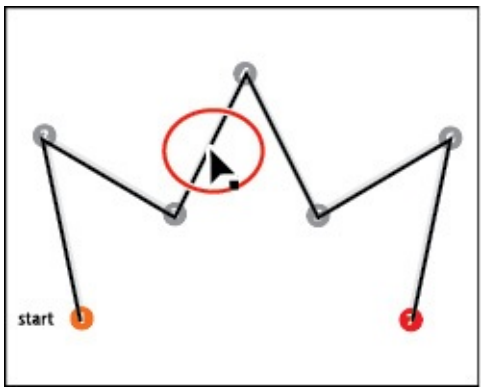
1. Choose Select > Deselect.

Selecting paths

The type of anchor point you created in the previous section is called a corner point. *Corner points* are not smooth like a curve; rather, they create an angle where the anchor point is. Now that you can create corner points, you will move on to adding other types of points such as smooth points to create curves in a path. But first, you'll learn a few more techniques for selecting paths.

In Lesson 2, "Techniques for Selecting Artwork," you were introduced to selecting content with the Selection and Direct Selection tools. Next, you'll explore a few more options for selecting artwork with those same Selection tools.

1. Select the Selection tool (▶) in the Tools panel, and position the pointer over a straight line in the path you just created. When the pointer shows a solid black box (▶) next to it, click.



This selects the entire path and all of the anchor points.

▶ **Tip:** You can also drag across a path to select it with the Selection tool.

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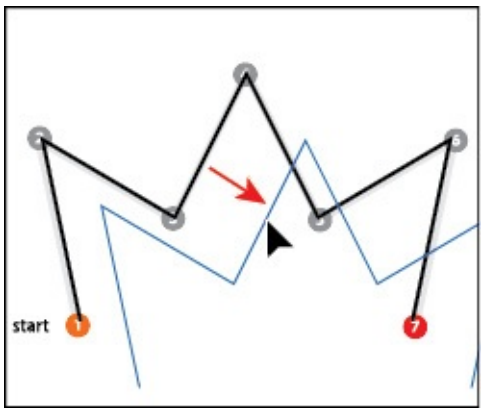
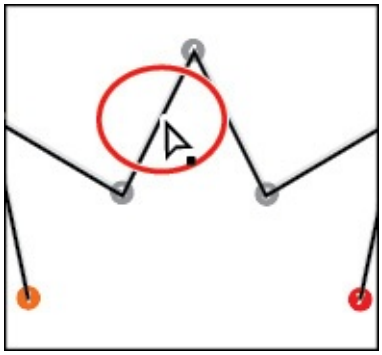
2. Position the pointer over one of the straight lines in the path. When the pointer changes appearance (), drag the path to a new location anywhere on the artboard.

   All the anchor points travel together, maintaining the shape of the path.



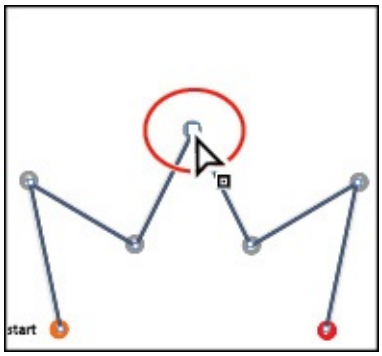
3. Choose Edit > Undo Move to move the path back to its original position.
4. With the Selection tool selected, click an empty area of the artboard to deselect the path.
5. Select the Direct Selection tool () in the Tools panel. Move the pointer anywhere over the path between anchor points. When the pointer changes ( ), click the path to reveal all of the anchor points.

   You just selected a line segment (path). If you were to press Backspace or Delete (*don't*), only that part of the path between two anchor points would be removed.



Tip: If the Pen tool ( ) were still selected, you could Command-click (macOS) or Ctrl-click (Windows) in a blank area of the artboard to deselect the path. This temporarily selects the Direct Selection tool. When you release the Ctrl or Command key, the Pen tool is selected again.

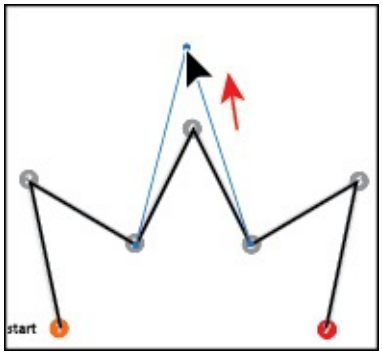
6. Move the pointer over the anchor point labeled 4; the anchor point will become a little larger than the others, and the pointer will show a small box with a dot in the center ( ) next to it (the figure shows this). Both of these indicate that if you click, you will select the anchor point. Click to select the anchor point, and the selected anchor point is filled (looks solid), whereas the other anchor points are still hollow (deselected).



Note: When you position the pointer over a line segment that is not already selected, a black, solid square appears next to the Direct Selection tool pointer, indicating that you will select a line segment.

7. Drag the selected anchor point up to reposition it.

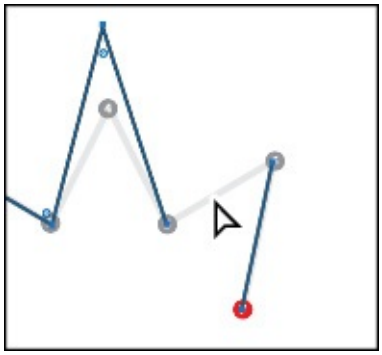
   The anchor point moves, but the others remain stationary. This is one method for editing a path, like you saw in Lesson 2, "Techniques for Selecting Artwork."



8. Click in a blank area of the artboard to deselect.

9. Position the Direct Selection pointer over the path between points 5 and 6. When the pointer changes ( ), click to select. Choose Edit > Cut.

   This removes the selected segment between anchor points 5 and 6. Next, you'll learn how to connect the paths again.



Note: If the entire path disappears, choose Edit > Undo Cut, and try again.

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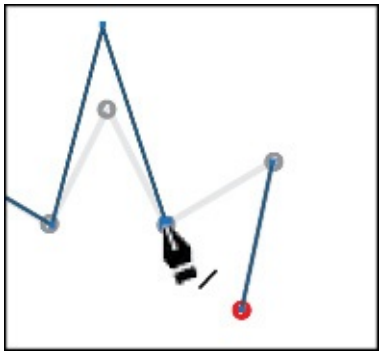
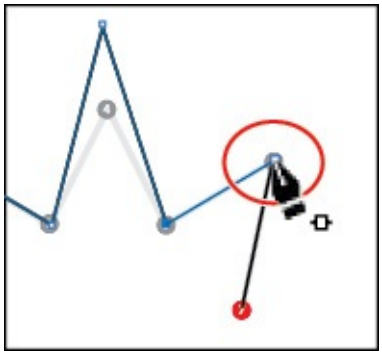
0. Select the Pen tool ( ), and move the pointer onto the blue anchor point labeled 5. Notice that the Pen tool shows a forward slash ( ), indicating that if you click, you will continue drawing from that anchor point. Click the point.



1. Position the pointer over the other anchor point (point 6) that was connected to the cut line segment. The pointer now shows a merge symbol next to it ( ), indicating that you are connecting to another path. Click the

point to reconnect the paths.



2. Choose File > Save.

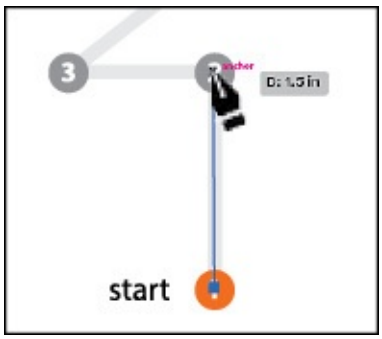
Drawing straight lines with the Pen tool

In previous lessons, you learned that using the Shift key as well as Smart Guides in combination with shape tools constrains the shape of objects. The Shift key and Smart Guides can also constrain paths drawn with the Pen tool to create straight paths in angles of 45˚. Next, you'll learn how to draw straight lines and constrain angles as you draw.

1. Choose 2 from the Artboard Navigation menu in the lower-left corner of the Document window.
2. Select the Zoom tool (🔍) in the Tools panel, and click twice in the bottom half of the artboard to zoom in.
3. Choose View > Smart Guides to turn on the Smart Guides.
4. With the Pen tool (✒) selected, in the area labeled "Work Area," click on the point labeled 1, where you see "start," to set the first anchor point.

   The Smart Guides most likely are attempting to "snap" the anchor point you create to other content on the artboard, possibly making it difficult to add an anchor point exactly where you want it. This is expected behavior and is sometimes why you might turn off the Smart Guides when drawing.
5. Move the pointer above the original anchor point to the point labeled 2. When you see 1.5 inches in the gray measurement label that appears next to the pointer, click to set another anchor point.

   As you've learned in previous lessons, the measurement label and alignment guides are part of the Smart Guides. The measurement labels showing distance can be useful at times when drawing with the Pen tool.

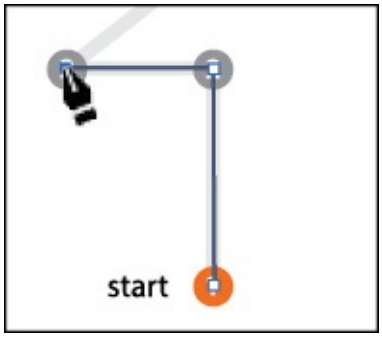


6. Choose View > Smart Guides to turn *off* the Smart Guides.

   Without Smart Guides on, to align points, you will need to press the Shift key, which is what you'll do next.

7. Press the Shift key, and click in the point labeled 3. Release the Shift key.

   With Smart Guides turned off, there is no measurement label, and the point is only aligning with the previous point because you are holding down the Shift key.



Note: The points you set don't have to be in exactly the same position as the path at the top of the artboard.

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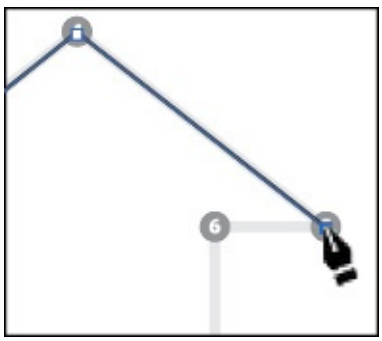
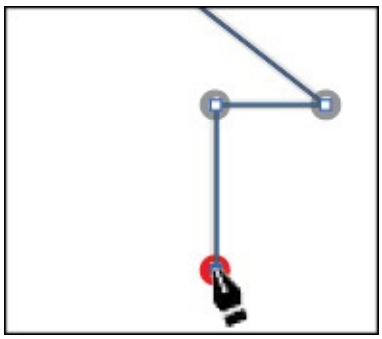
8. Click to set point 4 and then click to set point 5.

   Like you've already seen, without holding the Shift key, you can set an anchor point anywhere. The path is not constrained to angles of 45˚.

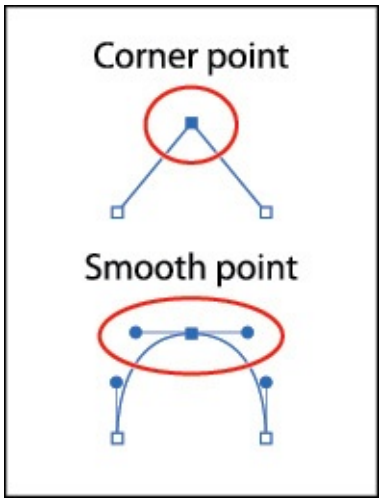


9. Press the Shift key, and click to set points 6 and 7.

0. Choose Select > Deselect.



Introducing curved paths

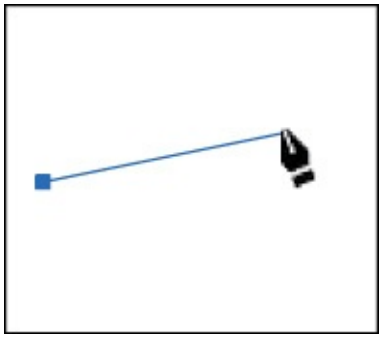


In this part of the lesson, you'll learn how to draw curved lines with the Pen tool. In vector drawing applications such as Illustrator, you can draw a curve, called a Bezier curve. Paths can have two kinds of anchor points: *corner points* and *smooth points*. At a corner point, a path abruptly changes direction. At a smooth point, path segments are connected as a continuous curve. By setting anchor points and dragging direction handles, you can define the shape of the curve. This type of anchor point, with direction handles, is called a *smooth point*.

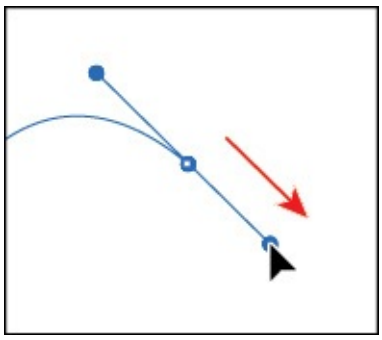
Although drawing curves this way can take some time to learn, it gives you some of the greatest control and flexibility in creating paths. The goal for this exercise is not to create anything specific but to get accustomed to the feel of creating Bezier curves. First, you'll just get the feel for how to create a curved path.

1. Choose 3 from the Artboard Navigation menu in the lower-left corner of the Document window. You will draw in the area labeled "Practice."
2. Select the Zoom tool ( ) in the Tools panel, and click twice in the bottom half of the artboard to zoom in.
3. Select the Pen tool ( ) in the Tools panel. In the Properties panel, make sure that the fill color is None ( ) and the stroke color is Black. Also,

make sure the stroke weight is still **1 pt** in the Properties panel.

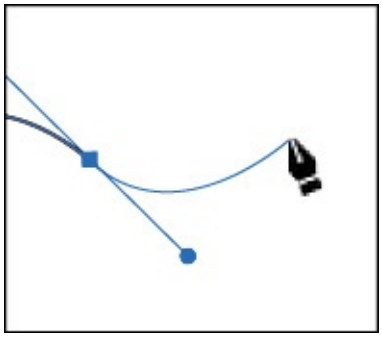


4. With the Pen tool selected, click in a blank area of the artboard to create a starting anchor point. Move the pointer away after releasing the mouse button.



5. Click and drag to create a curved path.

   As you drag away from the point, direction handles appear. *Direction handles* consist of direction lines that end in round direction points. The angle and length of the direction handles determine the shape and size of the curve. Direction handles do not print.

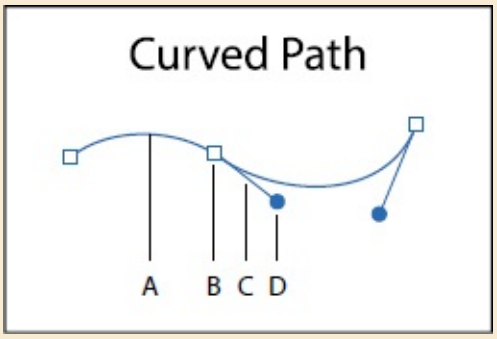


6. Move the pointer away from the anchor point you just created to see the rubber banding. Move the pointer around a bit to see how it changes.
7. Continue clicking and dragging in different areas to create a series of points.
8. Choose Select > Deselect. Leave the file open for the next section.

Components of a path

As you draw, you create a line called a path. A path is made up of one or more straight or curved segments. The beginning and end of each segment is marked by anchor points, which work like pins holding a wire in place. A path can be closed (for example, a circle) or open, with distinct endpoints (for example, a wavy line). You change the shape of a path by dragging its anchor points, the direction points at the end of direction lines that appear at anchor points, or the path segment itself.

—From Illustrator Help



A. Line Segment

B. Anchor Point

C. Direction Line

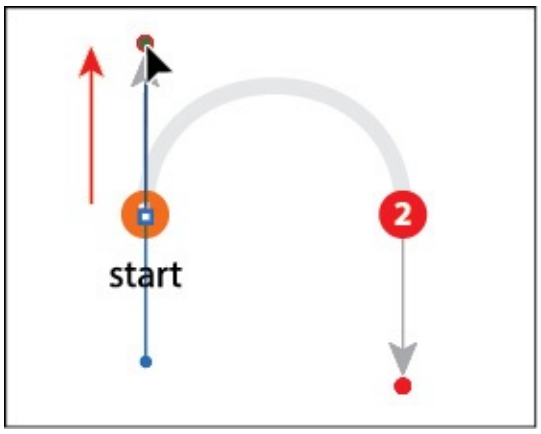
D. Direction Point

Drawing a curve with the Pen tool

In this part of the lesson, you'll use what you just learned about drawing curves to trace a curved shape with the Pen tool.

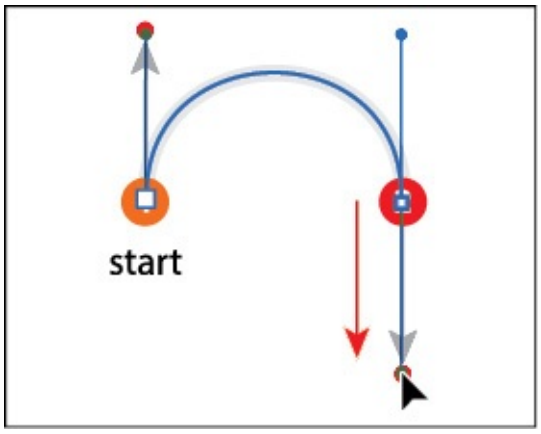
1. Press the spacebar to temporarily select the Hand tool (), and drag down until you see the curve at the top of the current artboard (on Artboard 3).
2. With the Pen tool () selected, click and drag from the point labeled 1, up to the red dot, and then release the mouse button.

   This creates a direction line going in the same general direction as the path. Up to this point, you've started your paths by simply clicking to create an anchor point, not dragging, like you did in this step. To create a more "curved" path, dragging out direction lines on the very first anchor point can be helpful.



Note: The artboard may scroll as you drag. If you lose visibility of the curve, choose View > Zoom Out until you see the curve and anchor point. Pressing the spacebar allows you to use the Hand tool to reposition the artwork.

3. Click point 2 and drag down. Release the mouse button when the pointer reaches the red dot and the path you are creating follows the gray arc.



If the path you created is not aligned exactly with the template, select the Direct Selection tool (▷), and select the anchor points one at a time to show the direction handles. You can then drag the ends of the direction handles (called *direction points*) until your path follows the template more accurately.

Note: Pulling the direction handle longer makes a steeper curve; when the direction handle is shorter, the curve is flatter.

4. Select the Selection tool (▶), and click the artboard in an area with no objects, or choose Select > Deselect.

   Deselecting the first path allows you to create a new path. If you click somewhere on the artboard with the Pen tool while the path is still selected, the path connects to the next point you draw.

Tip: While drawing with the Pen tool, to deselect objects, you can press the Command (macOS) or Ctrl (Windows) key to temporarily switch to the Direct Selection tool and then click the artboard where there are no objects. Another way to end a path is to press the Escape key when you are finished drawing.

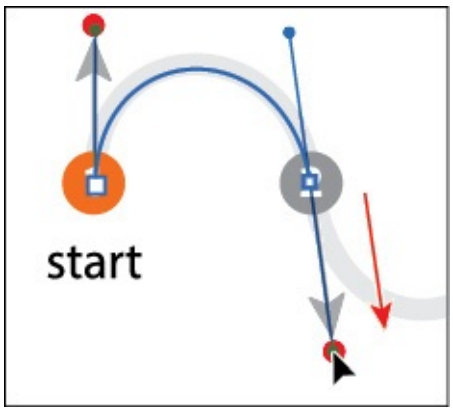
If you want to try drawing the curve for more practice, scroll down to the Practice area in the same artboard and trace the different curves.

Drawing a series of curves with the Pen tool

Now that you've experimented with drawing a curve, you will draw a shape that contains several continuous curves.

1. Choose 4 from the Artboard Navigation menu in the lower-left corner of the Document window. Select the Zoom tool (), and click several times in the *top* half of the artboard to zoom in.
2. In the Properties panel to the right of the document, make sure that the fill color is None (), the stroke color is Black, and the stroke weight is still **1 pt**.
3. Select the Pen tool (). Click and drag up on point 1, labeled "start," in the direction of the arc, stopping at the red dot.
4. Position the pointer over the point labeled 2 (to the right), and drag down to the red dot, adjusting the first arc (between points 1 and 2) with the direction handle before you release the mouse button.

   When it comes to smooth points (curved), you'll find that you spend a lot of time focusing on the path segment *behind* (before) the current anchor point you are creating. Remember, by default there are two direction lines for an anchor point. The previous direction line controls the shape of the previous segment.



Note: Don't worry if the path you draw is not exact. You can correct

the line with the Direct Selection tool (▷) when the path is complete.

Tip: As you drag out the direction handles for an anchor point, you can press and hold the spacebar to reposition the anchor point. When the anchor point is where you want it, release the spacebar.

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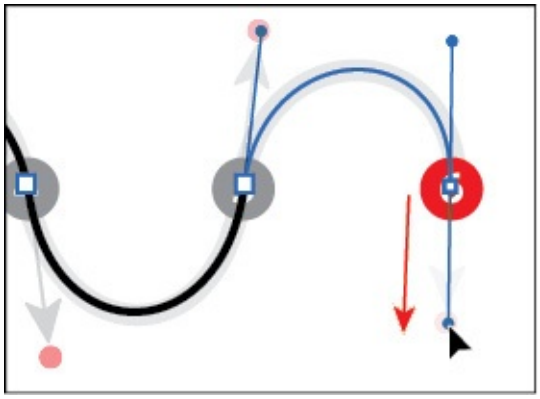
5. Continue along the path, alternating between dragging up and down. Put anchor points only where there are numbers and finish with the point labeled 6.

   If you make a mistake as you draw, you can undo your work by choosing Edit > Undo Pen and then draw the last point again. Note that your direction lines may not match the figures, and that's okay.



6. When the path is complete, select the Direct Selection tool (▷), and click to select any anchor point in the path.

Note: For more information about these attributes, see Lesson 7, "Using Color to Enhance Signage."

When an anchor point is selected, the direction handles appear, and you can readjust the curve of the path if necessary. With a curve selected, you can also change the stroke and fill of the curve. When you do this, the next line you draw will have the same attributes. If you want to try drawing the shape again for more practice, scroll down to the bottom half of the same artboard (labeled Practice), and trace the shape down there.

7. Choose Select > Deselect and then choose File > Save.

Converting smooth points to corner points

When creating curves, the direction handles help to determine the shape and size of the curved segments, as you've already seen. Removing the direction lines from an anchor point can convert a smooth point into a corner point. In this next part of the lesson, you'll practice converting between smooth points

and corner points.

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

   On the top of the artboard, you can see the path that you will trace. You'll use the top artboard as a template for the exercise, creating your paths directly on top of those. Use the Practice section at the bottom of the artboard for additional practice on your own.

2. Select the Zoom tool (), and click several times in the top part of the artboard to zoom in.

3. In the Properties panel, make sure that the fill color is None (), the stroke color is Black, and the stroke weight is still **1 pt**.

4. Select the Pen tool (). Pressing the Shift key, click and drag up from point 1, labeled "start," in the direction of the arc, stopping at the red dot. Release the mouse button and then release the Shift key.

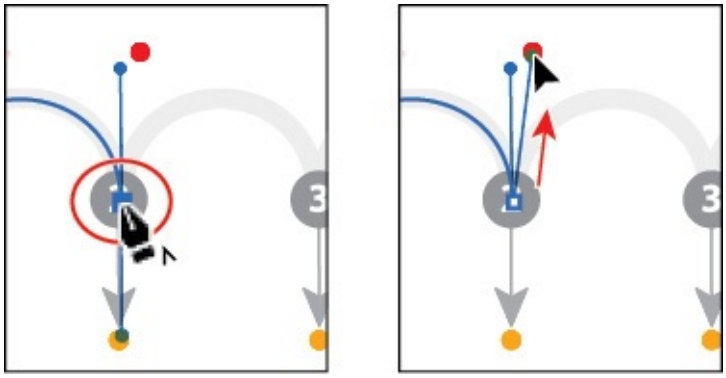
   Pressing the Shift key when dragging constrains the direction handles to multiples of 45°.

5. Click point 2 (to the right), and begin dragging down to the gold dot. As you drag, press and hold the Shift key. When the curve looks correct, release the mouse button and then release the Shift key. Leave the path selected.

   Now you need the curve to switch directions and create another arc. You will *split* the direction lines to convert a smooth point to a corner point.

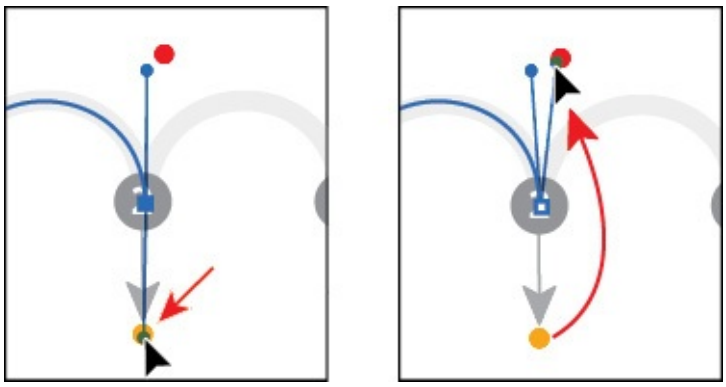
6. Press the Option (macOS) or Alt (Windows) key, and position the pointer over the last *anchor point* you created. When a convert-point icon (^) appears next to the Pen tool pointer (), click and drag a direction line up to the red dot above. Release the mouse button and then release the modifier key. If you do not see the caret (^), you might end up creating an additional loop.

Note: The Option (macOS) or Alt (Windows) key essentially allows you to create a new direction line that is independent of the other for that anchor point. If you don't hold down the Option (macOS) or Alt (Windows) key, the direction handles would not be split, so it would stay a smooth point.



Tip: After you draw a path, you can also select single or multiple anchor points and click the Convert Selected Anchor Points To Corner button ( ) or Convert Selected Anchor Points To Smooth button ( ) in the Properties panel.

You can also Option-drag (macOS) or Alt-drag (Windows) the end of the direction handle (called the *direction point*). An arrow is pointing to it in the first part of the figure. Either method "splits" the direction handles so they can go in different directions.



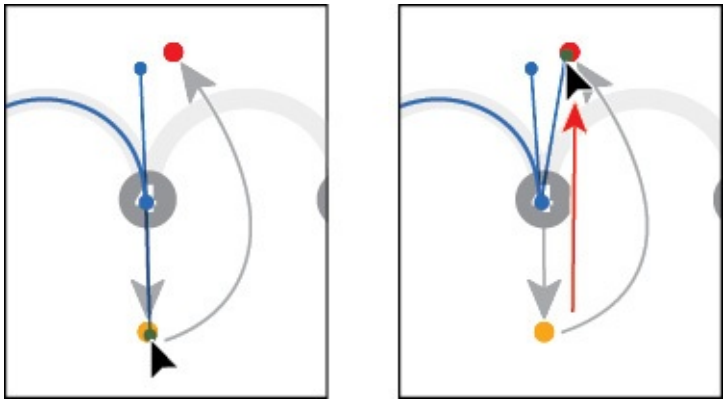
7. Move the Pen tool pointer over point 3 to the right on the template path, and drag down to the gold dot. Release the mouse button when the path looks similar to the template path.

8. Press the Option (macOS) or Alt (Windows) key, and move the pointer over the last anchor point you created. When a convert-point icon (^) appears next to the Pen tool pointer ( ), click and drag a direction line up to the red dot above. Release the mouse button and then release the modifier key.

   For the next point, you will not release the mouse button to split the direction handles, so pay close attention.

9. For anchor point 4, click and drag down to the gold dot until the path looks correct. This time, *do not release the mouse button*. Press the Option (macOS) or Alt (Windows) key, and drag up to the red dot for the next

curve. Release the mouse button and then release the modifier key.



0. Continue this process using the Option (macOS) or Alt (Windows) key to create corner points until the path is completed.

1. Use the Direct Selection tool to fine-tune the path and then deselect the path.

   If you want to try drawing the same shape for more practice, scroll down to the Practice area in the same artboard, and trace the shape down there.

Combining curves and straight lines

Of course in the real world, when you draw with the Pen tool, you won't just create either curves or straight lines. In this next section, you'll learn how to go from curves to straight lines and from straight lines to curves.

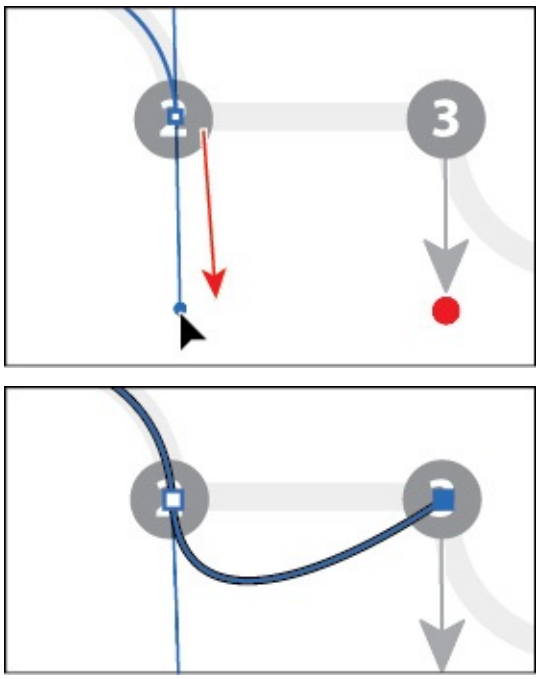
1. Choose 6 from the Artboard Navigation menu in the lower-left corner of the Document window. Select the Zoom tool (), and click several times in the top half of the artboard to zoom in.

2. Select the Pen tool (). Click point 1, labeled "start," and drag up, stopping at the red dot. Release the mouse button.

   Up to this point, you've been dragging to a gold or red dot in the templates. In the real world those obviously won't be there, so for the next point you will drag to create a point without much template guidance. Don't worry, you can always choose Edit > Undo Pen and try again!

3. Click and drag down from point 2, and release the mouse button when the path roughly matches the template.

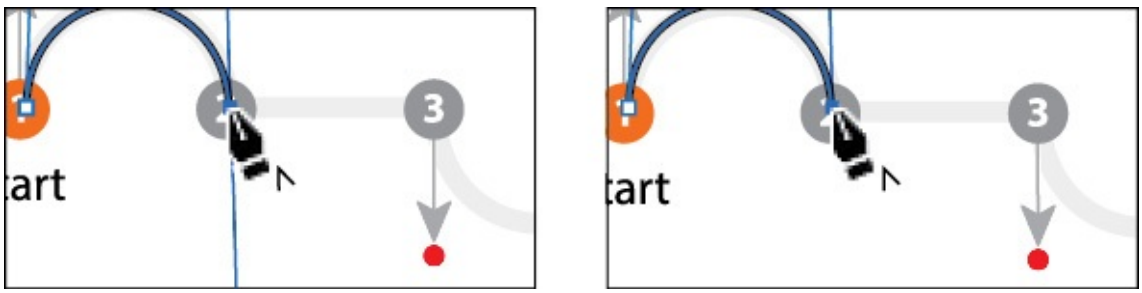
   This method of creating a curve should be familiar to you by now.



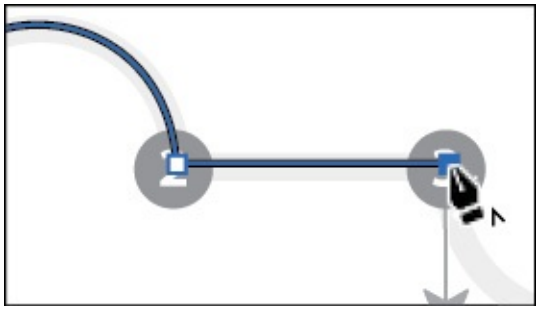
If you were to click point 3 (*don't*), even pressing the Shift key (to produce a straight line), the path would be curved. The last point you created is a smooth anchor point and has a leading direction handle. The figure to the right shows what the path would look like if you clicked with the Pen tool on the next point.

You will now continue the path as a straight line by removing the leading direction handle.

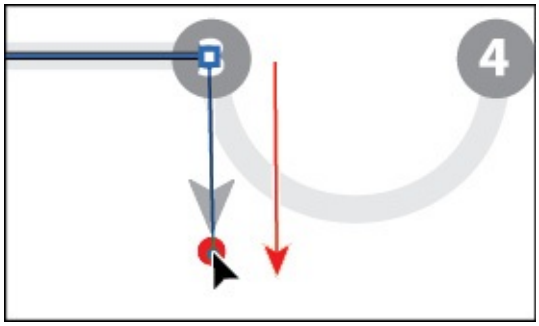
4. Position the pointer over the last point created (point 2). When the convert-point icon appears (), click. This deletes the *leading* direction handle from the anchor point (not the trailing direction handle), as shown in the second part of the following figure.



5. Press the Shift key, and click point 3 in the template path to the right to set the next point, creating a straight segment.



6. For the next arc, position the pointer over the last point created. When the convert-point icon appears ( ), click and drag down from that point to the red dot. This creates a new, independent direction line.



For the rest of this section, I'm going to ask you to complete the path, following the remaining part of the template. I don't include any figures, so go through the figures in the previous steps if you need guidance.

7. Click to create the next point (point 4), and drag up to complete the arc.
8. Click the last anchor point you just created to remove the direction line.
9. Shift-click the next point to create the second straight segment.
0. Click and drag up from the last point created to create a direction line.
1. Click and drag down on the end point (point 6) to create the final arc.

   If you want to try drawing the same shape for more practice, scroll down to the Practice area in the same artboard, and trace the shape down there. Make sure you deselect the previous artwork first.

2. Choose File > Save and then choose File > Close.

Remember, you can always go back and work on those Pen tool templates in the L6_practice.ai file as many times as you need. Take it as slow as you need and *practice, practice, practice*.

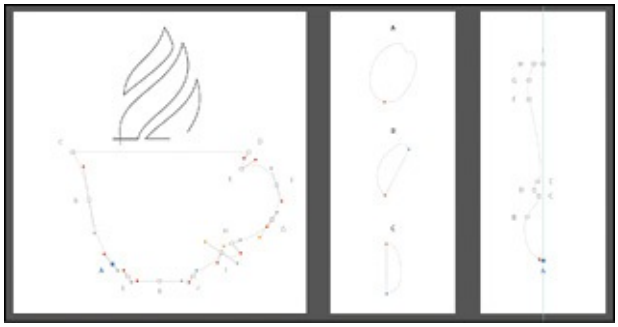
Creating artwork with the Pen tool

▶ **Tip:** Don't forget, you can always undo a point you've drawn (Edit > Undo Pen) and then try again.

Next, you'll take what you've learned and create some artwork to be used in your project. To start, you'll draw a coffee cup, which combines curves and corners. Just take your time as you practice with this shape, and use the template guides provided to assist you in drawing it.

1. Choose File > Open, and open the L6_end.ai file in the Lessons > Lesson06 folder.
2. Choose View > Fit All In Window to see the finished artwork. (Use the Hand tool [ ] to move the artwork to where you want it.) If you don't want to leave the artwork open, choose File > Close.

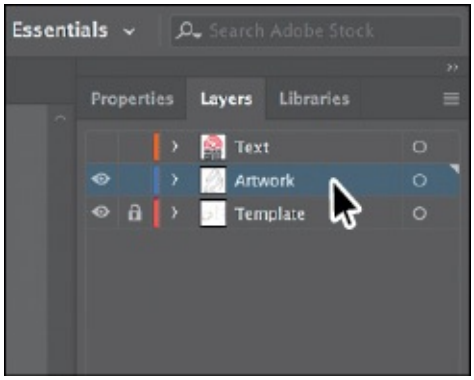
3. Choose File > Open. In the Open dialog box, navigate to the Lessons > Lesson06 folder, and select the L6_start.ai file on your hard disk. Click Open to open the file.



4. Choose View > Fit All In Window.
5. Choose File > Save As, name the file **CoffeeShop.ai**, and select the Lesson06 folder in the Save As dialog box. Choose Adobe Illustrator (ai) from the Format menu (macOS) or choose Adobe Illustrator (*.AI) from the Save As Type menu (Windows), and click Save. In the Illustrator Options dialog box, leave the options set at the defaults and then click OK.
6. Choose 1 Main from the Artboard Navigation menu in the lower-left corner of the Document window, if it's not already chosen.
7. Choose View > Fit Artboard In Window.
8. Select the Zoom tool ( ), and zoom in to the cup in the bottom half of the

artboard.

9. In the Layers panel (Window > Layers), click to select the layer named "Artwork."

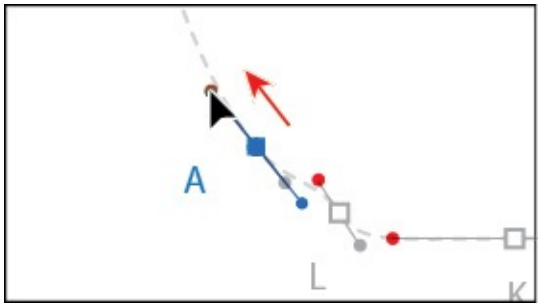


0. In the Properties panel (Window > Properties), make sure that the fill color is None ( ) and the stroke color is Black. Also make sure the stroke weight is 1 pt in the Properties panel.

Drawing a coffee cup

Now that you have the file open and ready, you're going to put to use some of the Pen tool practice you did in previous sections, by drawing a coffee cup. This next section has more than the average number of steps, so take your time.

1. Select the Pen tool ( ) in the Tools panel. Drag from the blue square labeled "A" to the red dot above it to set the starting anchor point and direction of the first curve.



Note: You do not have to start at the blue square (point A) to draw this shape. You can set anchor points for a path with the Pen tool in a clockwise or counterclockwise direction.

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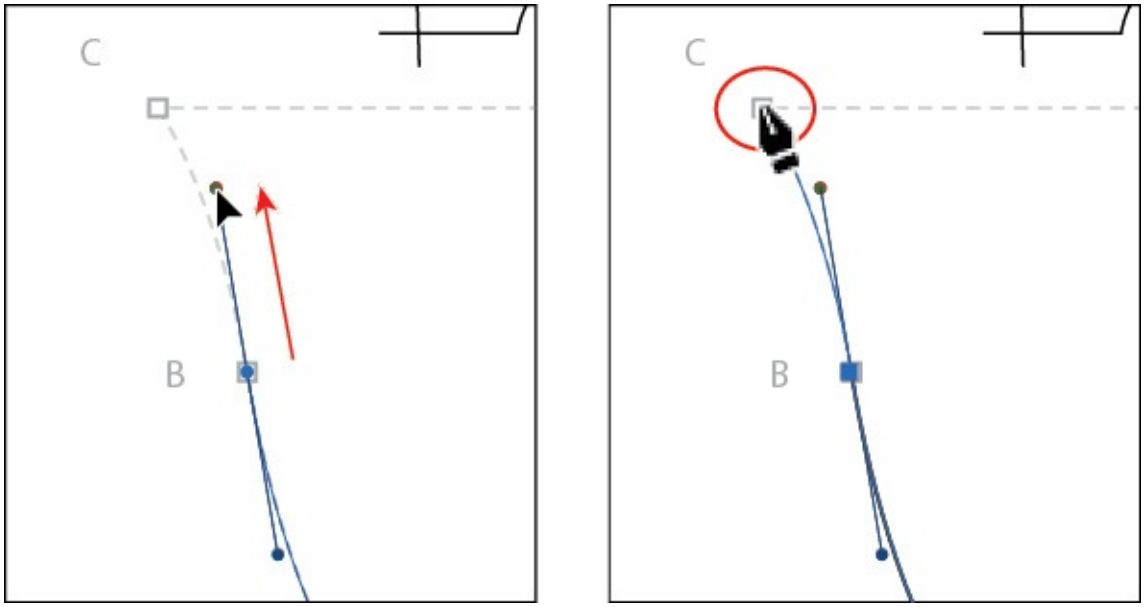
2. Drag from point B to the red dot to create the first curve.

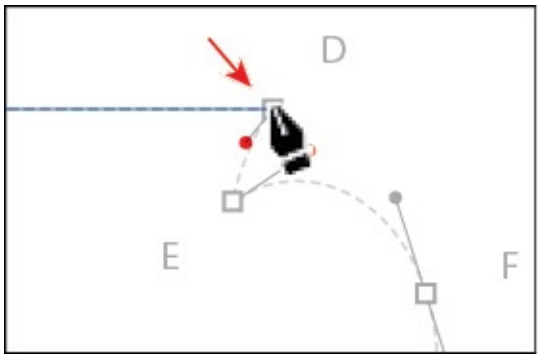
   The next point you create will be a simple corner point.

3. Position the pointer over the point C, and click (*don't drag*) to set a corner

point.



4. Press the Shift key, and click point D to create a straight line; then release the key.



Note: If you find that the path you are drawing has a fill of white, part of the template may be hidden. You can always change the fill to None (⊘) for the path you are drawing.

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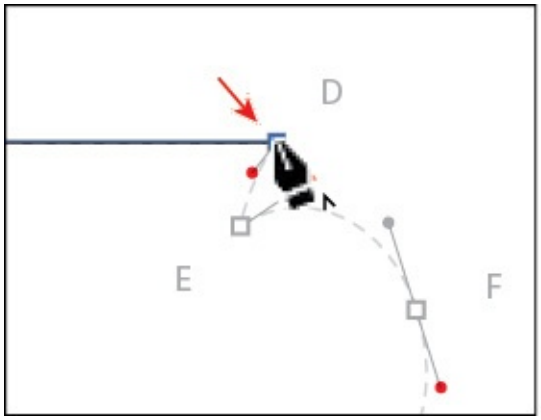
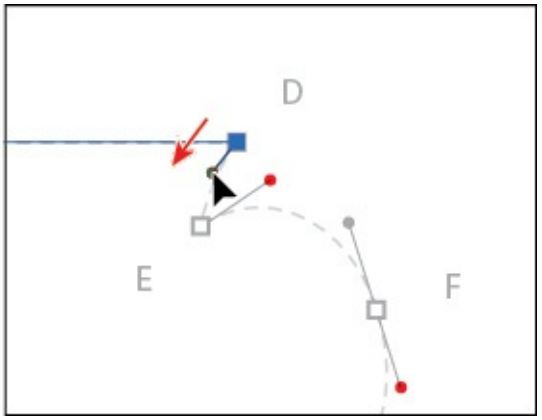
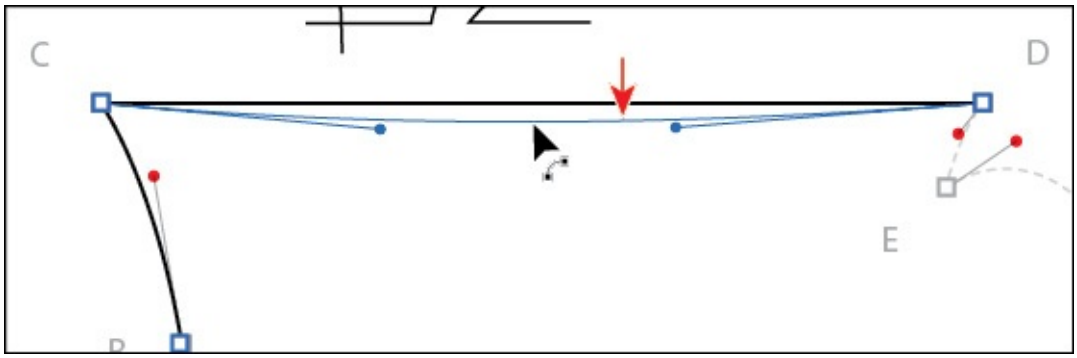
5. Position the Pen tool pointer over point D again. When the convert-point icon appears (✎) next to the pointer, drag down from point D to the red dot. This creates a new direction line.





As you draw with the Pen tool, you may want to edit a curve you previously drew without ending the path you are drawing. Pressing a modifier key with the Pen tool selected, you can position the pointer over a previous path segment and drag to modify it, which is what you'll do next.

6. Position the pointer over the path between points C and D. Press the Option (macOS) or Alt (Windows) key. The pointer changes appearance ( ). Drag the path down to make the path curved, like you see in the figure. Release the mouse button and then the key. Now, you can continue drawing the path.



This adds direction handles to the top anchor points.

▶ **Tip:** You can also press the Option+Shift (macOS) or Alt+Shift (Windows) keys to constrain the handles to a perpendicular direction, which ensures that the handles are the same length.

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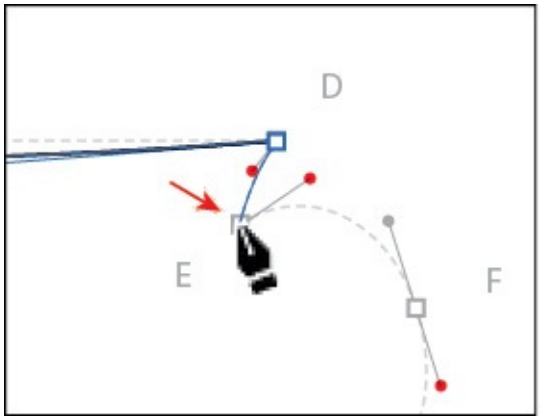
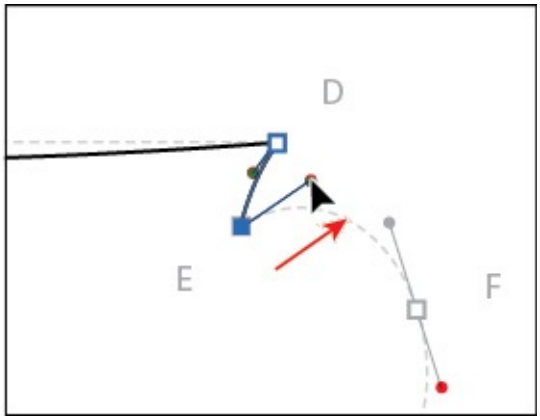
7. Position the pointer over point E. Notice that as you move the pointer, you can see the Pen tool rubber banding, which means you are still drawing the path. Click point E to create a corner point, and release the mouse button.

8. With the Pen tool pointer over point E, click and drag up and to the right from that point to the red dot.





This creates a new leading direction handle and sets up the next path to be a curve.

Note: After releasing the mouse button in the previous step, if you move the pointer away and then bring it back to point E, the convert-point icon [^] will appear next to the pointer.

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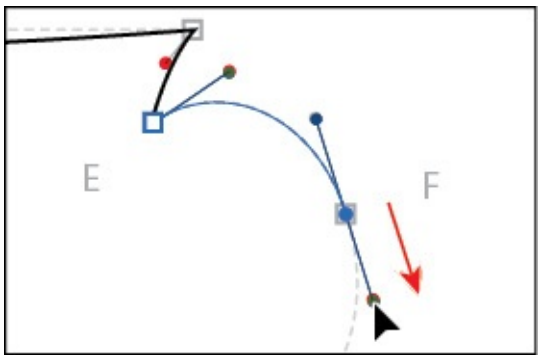
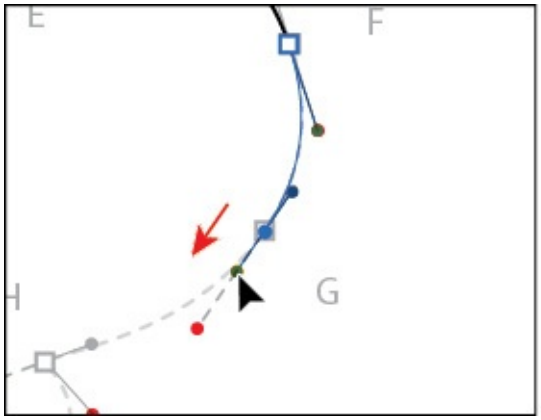
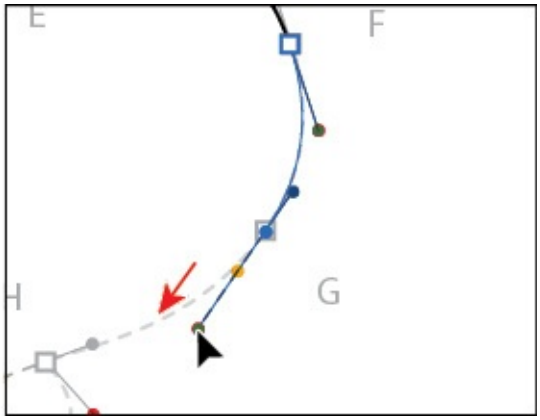
9. Continue drawing by dragging from the anchor point at F to the red dot.



For the next point, G, you will create another smooth point, but you will edit the direction handles independently using a modifier key as you draw. For the next step, don't release the mouse button until you are told.

0. Begin dragging from point G to the gold dot. When the pointer reaches the gold dot, *without releasing the mouse button yet*, press the Option (macOS) or Alt (Windows) key, and continue dragging from the gold dot to the red dot to make the *leading* direction handle longer. When the pointer reaches the red dot, release the mouse button and then release the key.





Next, you'll create a smooth point and split the direction handles.

Note: You could also create the point in this step by dragging and releasing the mouse button when the pointer reaches the gold dot. You could then position the Pen tool icon over the anchor point. When the convert-point icon (^) appears next to the pointer, you could drag out a new direction handle.

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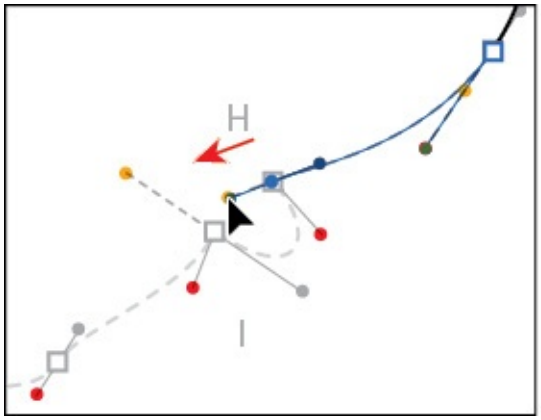
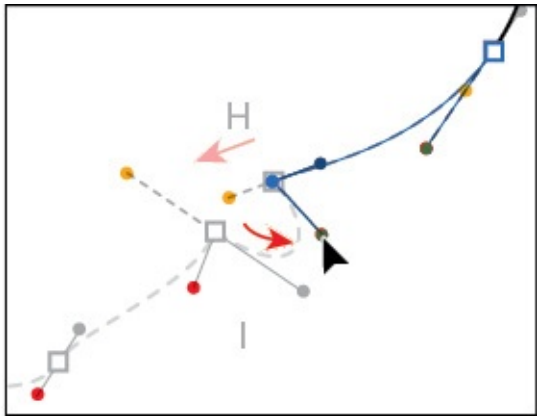
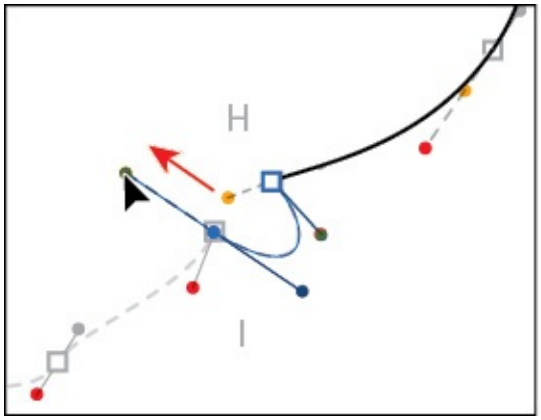
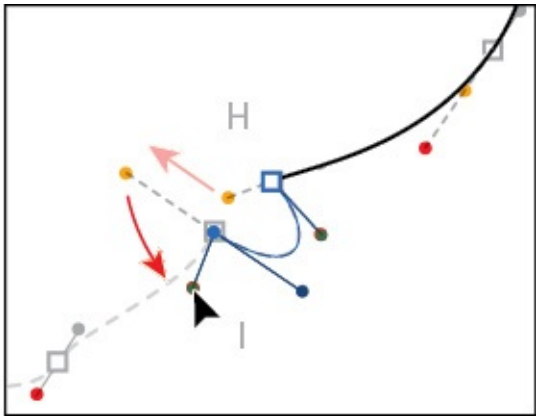
1. Continue drawing the point at H by first dragging from the anchor point to the gold dot. *Without releasing the mouse button*, press the Option (macOS) or Alt (Windows) key and drag from the gold dot to the red dot.



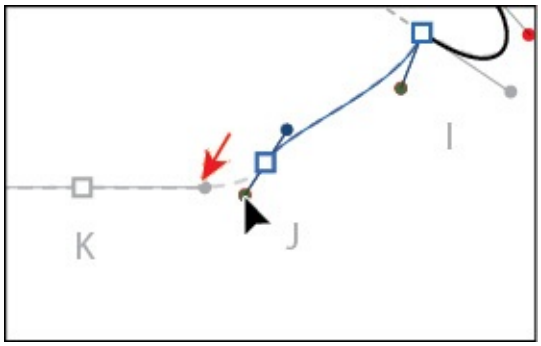


2. Continue drawing the point at I by first dragging from the anchor point to the gold dot. *Without releasing the mouse button*, press the Option (macOS) or Alt (Windows) key and continue dragging from the gold dot to the red dot.

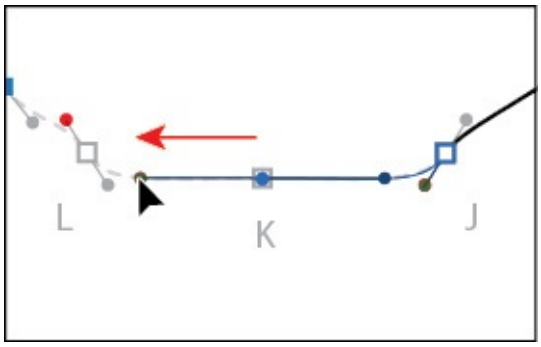




3. Continue drawing the point at J by dragging from the anchor point to the red dot.



4. Begin dragging from point K to the red dot. As you drag, press the Shift key to constrain the direction handles. When you reach the red dot, release the mouse button and then the key.



Note: If you press and hold the Shift key before you click and drag from a point, the point will be aligned with the previous point. That's not what you want in this case.

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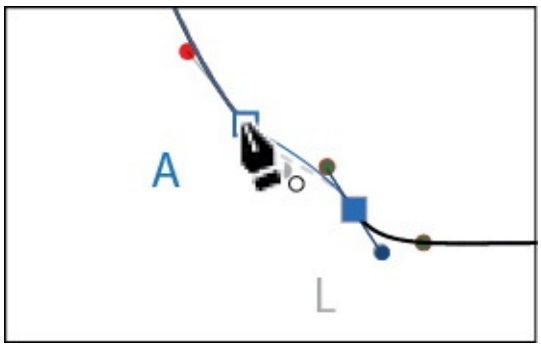
5. Continue drawing by clicking and dragging from the point at L to the red dot.

Next, you'll complete the drawing of the coffee cup by closing the path.

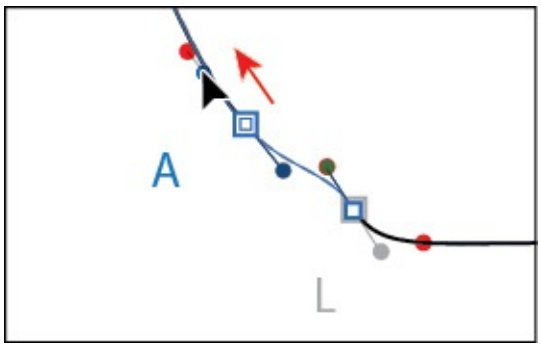
6. Position the Pen tool over the starting point A without clicking.

Notice that an open circle appears next to the Pen tool pointer (), indicating that the path will close if you were to click the anchor point (don't click yet). If you were to click and drag, the direction handles on either side of the point would move as a single straight line. You need to extend one of the direction handles to match the template.



7. Press the Option (macOS) or Alt (Windows) key with the pointer still over point A. Click and drag up and to the left. Notice that a direction handle shows but is going in the opposite direction (it's going down and to the right). Drag until the curve looks right. Release the mouse button and then the key.

   Normally, as you drag away from a point, direction lines appear before and after the point. Without the modifier key, as you drag away from closing point, you are reshaping the path before *and* after the anchor point. Pressing the Option (macOS) or Alt (Windows) modifier key on the closing point allows you to edit the previous direction handle independently.



▶ **Tip:** When creating a closing anchor point, you can press the spacebar to move the point as you create it.

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8. Command-click (macOS) or Ctrl-click (Windows) away from the path to deselect it and then choose File > Save.

● **Note:** This is a shortcut method for deselecting a path while keeping the Pen tool selected. You could also choose Select > Deselect, among