

## 4. Working with Shape Layers

### Lesson overview

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

- Create custom shapes.
- Customize a shape's fill and stroke.
- Use path operations to transform shapes.
- Animate shapes.
- Repeat shapes.
- Snap layers into alignment.
- Use an expression to animate properties in time with audio.



This lesson will take approximately an hour to complete. Download the Lesson04 project files from the Lesson & Update Files tab on your Account page at [www.peachpit.com](http://www.peachpit.com), if you haven't already done so. As you work on this lesson, you'll preserve the start files. If you need to restore the start files, download them from your Account page.



PROJECT: SEQUENCE FROM A MUSIC VIDEO

Shape layers make it easy to create expressive backgrounds and intriguing results. You can animate shapes, apply animation presets, and add Repeaters to intensify their impact.

## Getting started

Shape layers are created automatically when you draw a shape with any of the drawing tools. You can customize and transform an individual shape or its entire layer to create interesting results. In this lesson, you will use shape layers to build dynamic and whimsical designs on the street and driveways of a neighborhood.

First, you'll preview the final movie and set up the project.

1. Make sure the following files are in the Lessons/Lesson04 folder on your hard disk, or download them from your Account page at [www.peachpit.com](http://www.peachpit.com) now:
  - In the Assets folder: Beat.aif, drop.aep, Melody.aif, tracking.aep, Tracking.mp4
  - In the Sample\_Movie folder: Lesson04.mov
2. Open and play the Lesson04.mov sample movie to see what you will create in this lesson. When you are done, quit QuickTime Player. You may delete this sample movie from your hard disk if you have limited storage space.

As you start After Effects, restore the default application settings. See “[Restoring default preferences](#)” on page 2.

3. Start After Effects, and then immediately hold down Ctrl+Alt+Shift (Windows) or Command+Option+Shift (Mac OS) to restore default preferences settings. When prompted, click OK to delete your preferences.
4. Close the Start window.

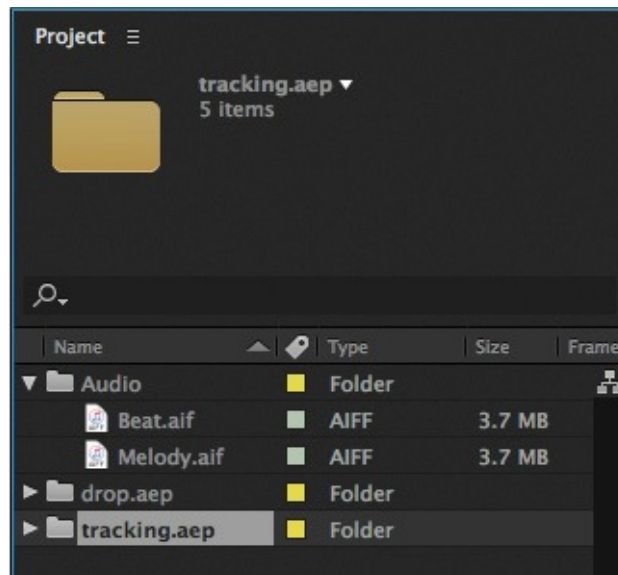
After Effects opens to display a blank, untitled project.

5. Choose File > Save As > Save As, and then navigate to the Lessons/Lesson04/Finished\_Project folder.
6. Name the project **Lesson04\_Finished.aep**, and then click Save.

## Creating the composition

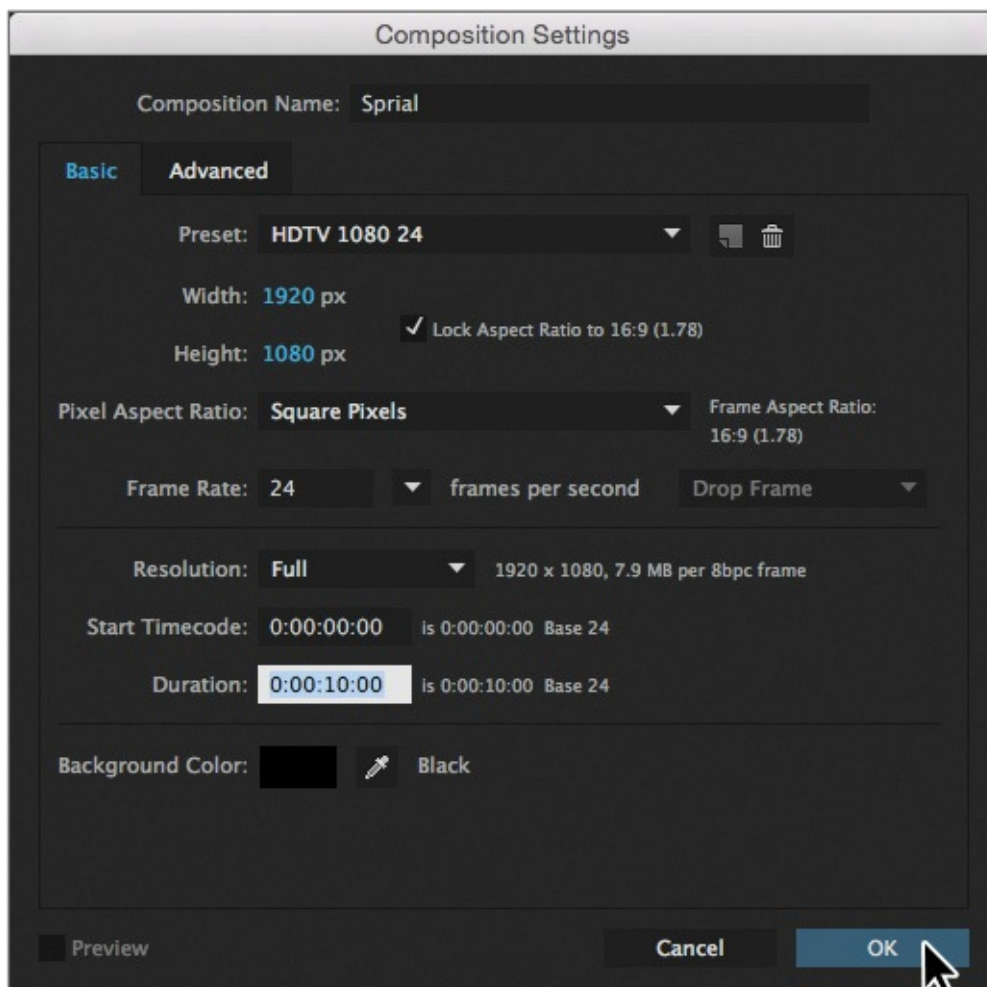
Next, you'll import the files you need and create the composition. You'll import two footage items and two saved project files.

1. Double-click an empty area of the Project panel to open the Import File dialog box.
2. Navigate to the Lessons/Lesson04/Assets folder on your hard disk, Ctrl-click (Windows) or Command-click (Mac OS) to select the Beat.aif and Melody.aif files, and then click Import or Open.
3. Choose File > New > New Folder to create a new folder in the Project panel.
4. Name the folder **Audio**, press Enter or Return to accept the name, and then drag the two audio files you imported into the Audio folder. Then expand the folder so you can see its contents.



5. Double-click an empty area of the Project panel to open the Import File dialog box again.
6. Navigate to the Lessons/Lesson04/Assets folder. Ctrl-click (Windows) or Command-click (Mac OS) to select the drop.aep and tracking.aep project files, and then click Import or Open. The video files and other elements you will need later are imported with the projects.

Now you're ready to create the composition.



7. Press Ctrl+N (Windows) or Command+N (Mac OS) to create a new composition.

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## ► Tip

To specify 10 seconds, type **10.** in the Duration box. The period indicates that there are no units in that position. To specify 10 minutes, type **10..** in the box.

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8. In the Composition Settings dialog box, name the composition **Spiral**, select the HDTV 1080 24 preset, and set the Duration to **10:00**. Then click OK.

After Effects opens the new composition in both the Timeline and Composition panels.

## Adding a shape layer

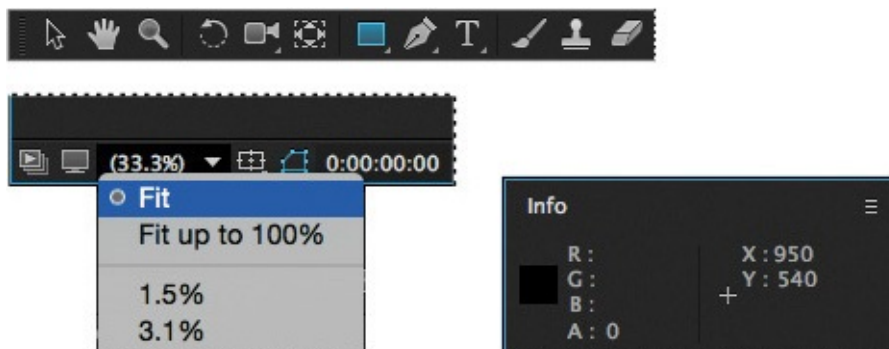
After Effects includes five shape tools: Rectangle, Rounded Rectangle, Ellipse, Polygon, and Star. When you draw a shape directly in the Composition panel, After Effects adds a new shape layer to the composition. You can apply stroke and fill settings to a shape, modify its path, and apply animation presets. Shape attributes are all represented in the Timeline panel, and you can animate each setting over time.

The same drawing tools can create both shapes and masks. Masks are applied to layers to hide or reveal areas or as input into effects; shapes have their own layers. When you select a drawing tool, you can specify whether the tool draws a shape or a mask.

## Drawing a shape

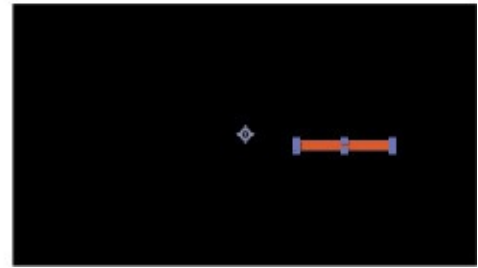
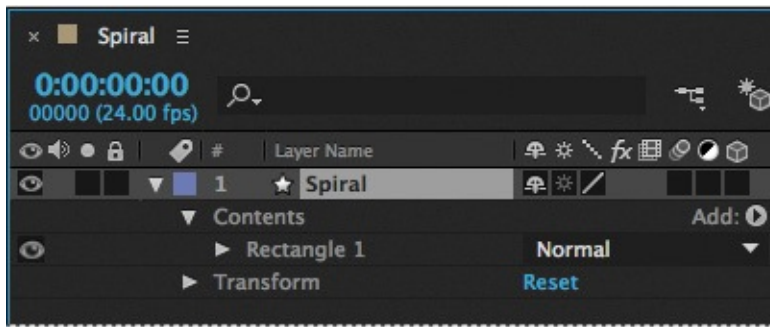
You'll begin by drawing a rectangle with a fill and stroke.

1. Select the Rectangle tool (■).
2. Choose Fit from the Magnification Ratio pop-up menu at the bottom of the Composition panel so that you can see the entire composition.
3. Using the Info panel to guide you, position the cursor at approximately 950, 540, which is near the center of the Composition panel. (You may need to widen the Info panel to see the X and Y coordinates.)



4. Drag down and to the right to create a rectangle. Again, watch the Info panel. The bottom (B) value should be approximately 40 pixels and the right side (R) value should be about 400 pixels. The shape appears in the Composition panel, and After Effects adds a shape layer named Shape Layer 1 to the Timeline panel.
5. Select the Shape Layer 1 layer name, press Enter or Return, change the layer name to **Spiral**, and press Enter or Return to accept the change.



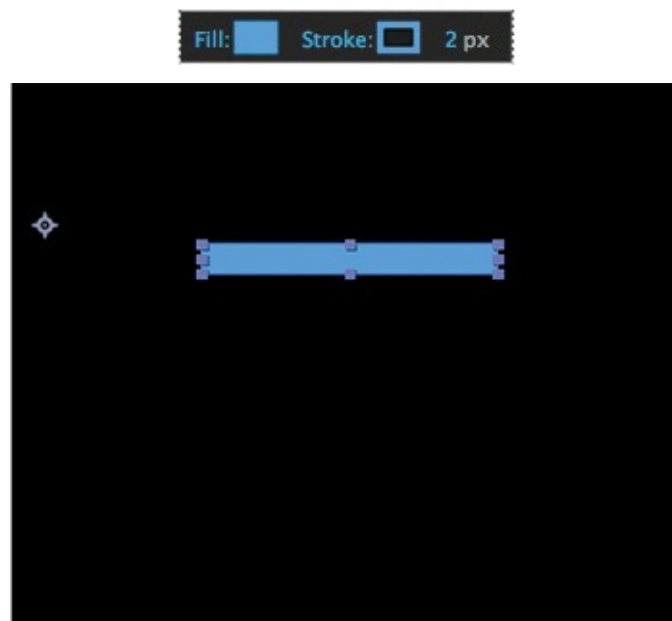


## Applying a fill and stroke

You can change the color of a shape by modifying its Fill settings in the Tools panel. Clicking the word *Fill* opens the Fill Options dialog box, where you can select the kind of fill, its blending mode, and its opacity. Clicking the Fill Color box opens the Adobe Color Picker if the fill is solid, or the Gradient Editor if the fill is a gradient.

Similarly, you can change the stroke color and width of a shape by modifying its Stroke settings in the Tools panel. Click the word *Stroke* to open the Stroke Options dialog box; click the Stroke Color box to select a color.

1. Select Rectangle 1 in the Timeline panel.



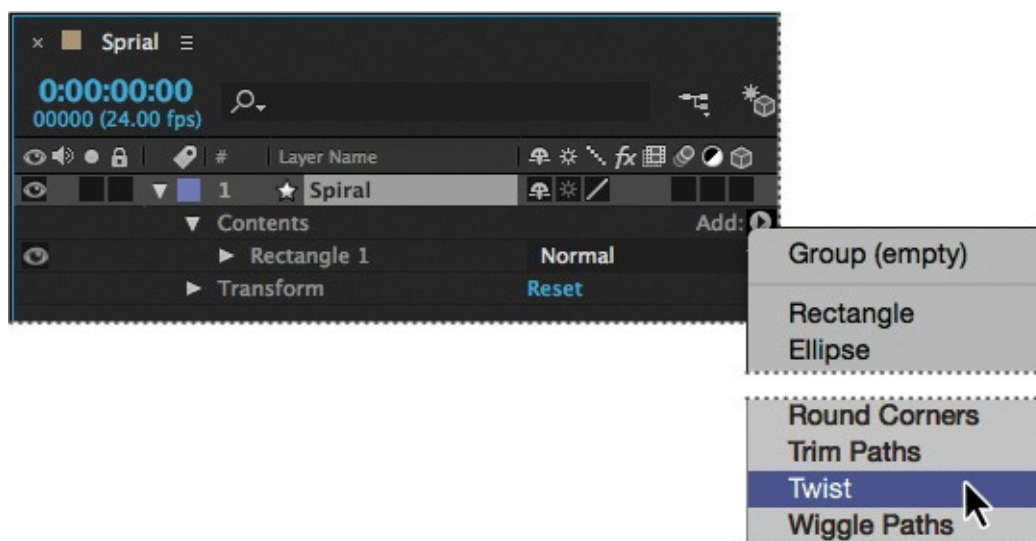
2. Click the Fill Color box (next to *Fill*) to open the Shape Fill Color dialog box.
3. Change the color to a light blue (we used R=0, G=170, B=255), and click OK.
4. Click the Stroke Color box in the Tools panel, change the stroke color to the same light blue color, and then click OK.
5. Choose File > Save to save your work so far.

## Twisting a shape

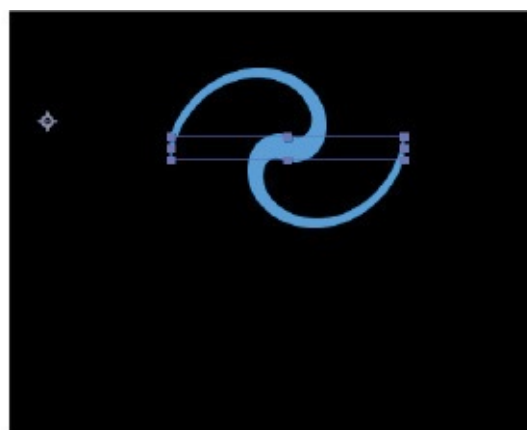
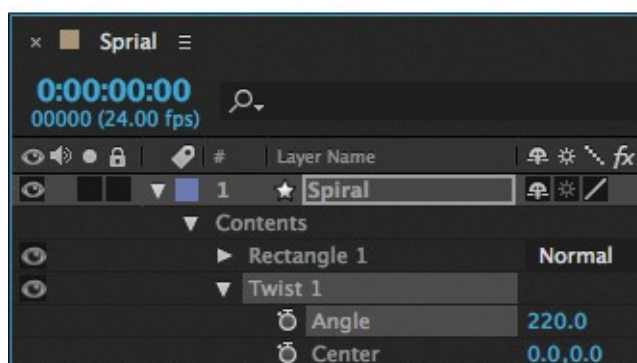
The rectangle is fine, but it isn't very exciting. In After Effects, you can easily modify a basic shape into something more complex and interesting. You'll use the Twist path operation to transform this rectangle into a spiral shape.

As you work with the Twist path operation, keep in mind that it rotates a path more sharply in the center than at the edges. Positive values twist clockwise; negative values twist counterclockwise.

1. In the Timeline panel, open the Add pop-up menu next to Contents in the Spiral layer, and choose Twist.



2. Expand Twist 1.
3. Change the Angle to 220.



The rectangle changes dramatically. Next, you'll change the center point of the twist to create a larger spiral.

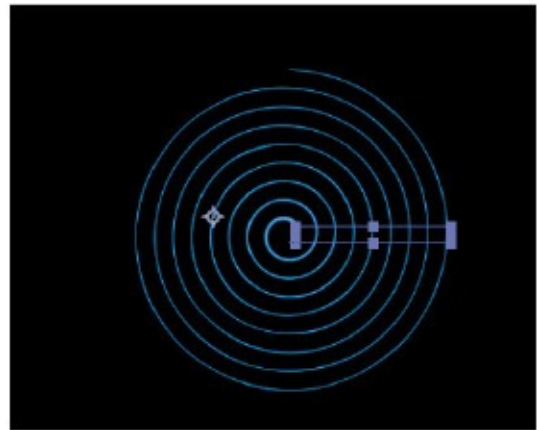
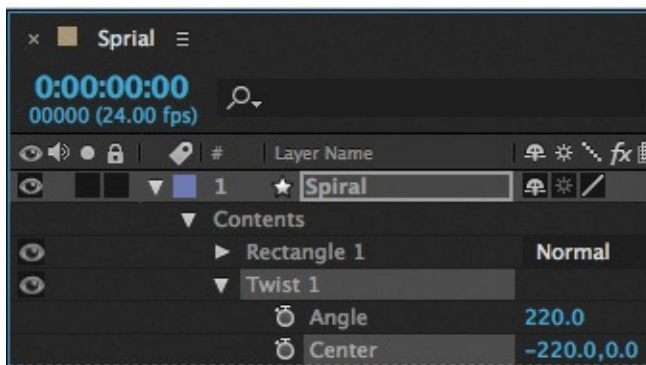
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#### ● Note

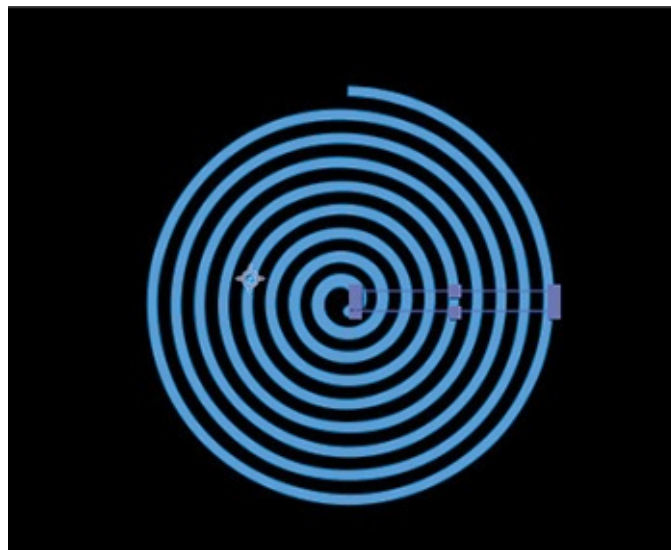
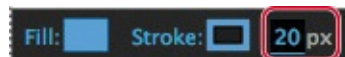
If the center of your spiral looks different from ours, you probably drew a slightly larger or smaller rectangle. You can delete what you have and start over with a fresh composition or try adjusting the x-axis value for Center.

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4. In the Timeline panel, change the x-axis value for Center to -220.



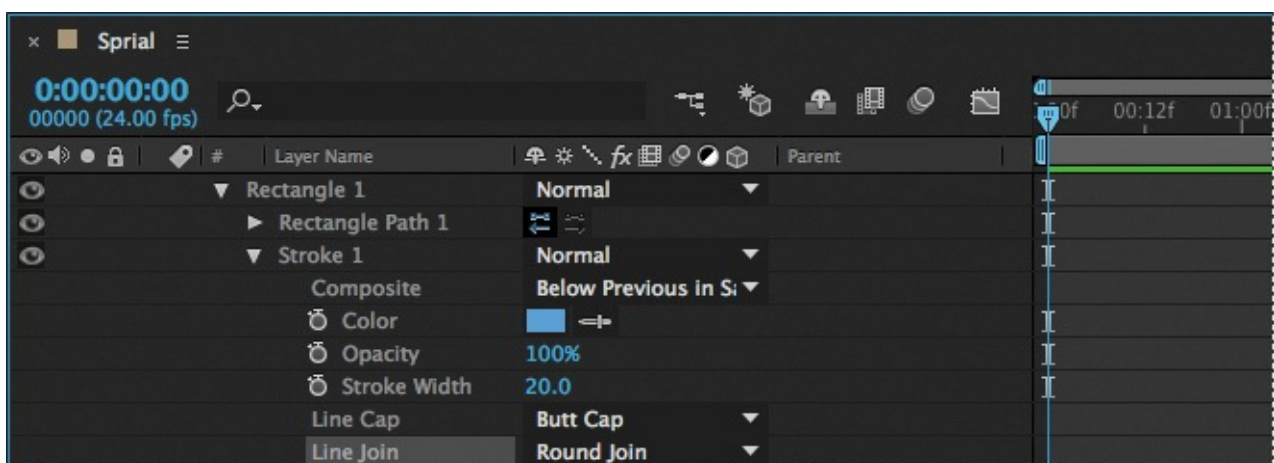
The spiral is a bit thin. You'll change the stroke width to thicken it.



5. Select the Spiral layer in the Timeline panel, and then change the Stroke Width value in the Tools panel to **20 px**.

The center of the spiral has a rounded cap, but the end is square. You'll change the end so that they match.

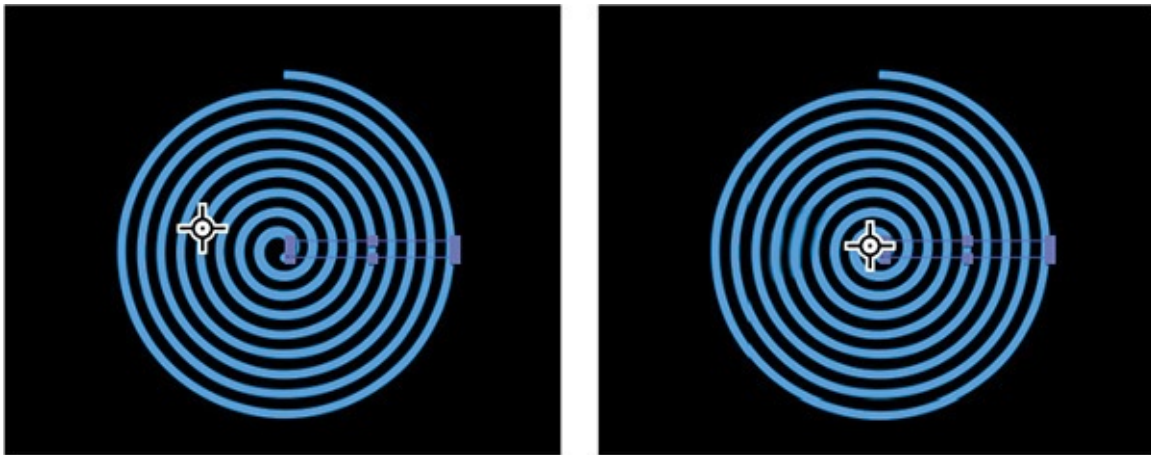
6. Expand Stroke 1 to see its properties.
7. Choose Round Join from the Line Join menu.



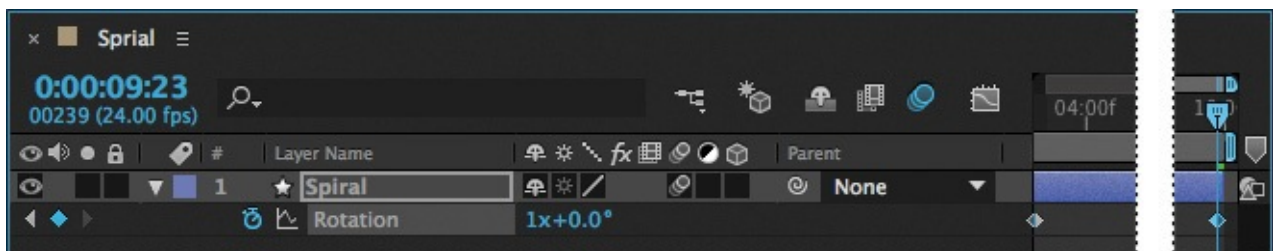
The spiral looks great. Now you just need to center it, so that it looks natural when it

rotates, and then you'll set up its rotation and add motion blur.

8. Press A to reveal the Anchor Point property for the layer. Then adjust the x-axis and y-axis values until the anchor point is centered in the black center (negative space) of the spiral, just above the center end cap. (The exact values will vary depending on how you created the initial shape.)



9. Make sure the current-time indicator is at the beginning of the timeline. Then press R to reveal the Rotation property for the layer. Click the stopwatch icon (⌚) to create an initial keyframe.
10. Press the End key, or move the current-time indicator to the end of the timeline. Change the Rotation value to **1x+0.0°**. With this setting, the shape will rotate once during its ten-second cycle.
11. Click the Motion Blur switch for the layer, and then click the Enable Motion Blur button (⌚) at the top of the Timeline panel.



12. Press the spacebar to preview your animation, and press the spacebar again to stop the preview. Choose File > Save to save your work so far.

## Creating custom shapes

You can use the five shape tools to create a wide variety of shapes. However, the real power in using shape layers is that you can draw any shape and manipulate it in a myriad of ways.

### Drawing a shape with the Pen tool

You'll use the Pen tool to draw a shape that resembles a lightning bolt. In order to position it properly in the final project, you'll create a separate composition for this shape.

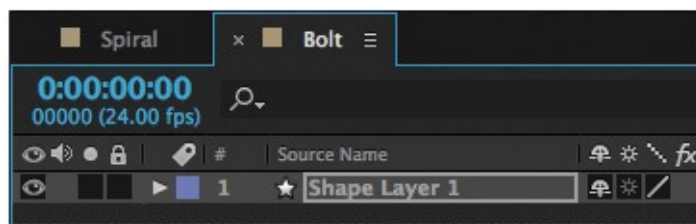
1. Press Ctrl+N (Windows) or Command+N (Mac OS) to create a new composition.



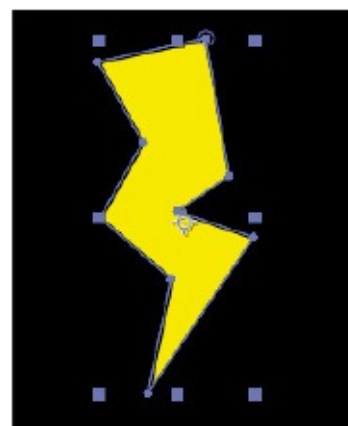
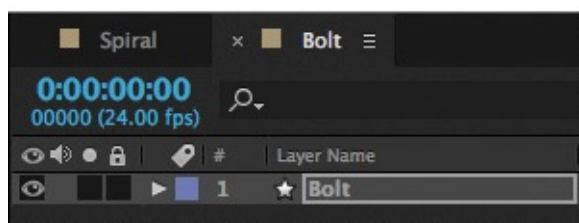
2. In the Composition Settings dialog box, name the composition **Bolt**, select the HDTV 1080 24 preset, set the duration to **10:00**, and then click OK.
3. Select the Pen tool (✎) in the Tools panel.
4. In the Composition panel, draw a shape that resembles a lightning bolt, as in the illustration. When you create the first vertex, After Effects automatically adds a shape layer to the Timeline panel.

### Tip

Your lightning bolt doesn't need to look exactly like ours, but you can use the one in the illustration as a guide. Click an initial vertex at the bottom of the shape, and then click to create each additional point. If you're not familiar with the Pen tool, you may find the display distracting, as the fill seems to jump around as you draw; ignore the preview until you've clicked each vertex and completed the shape.



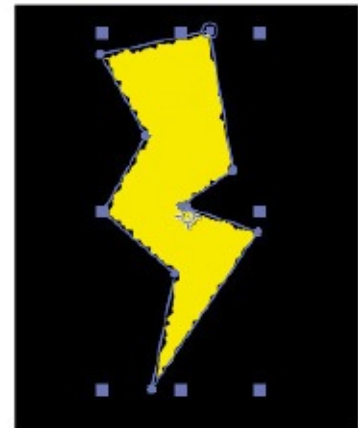
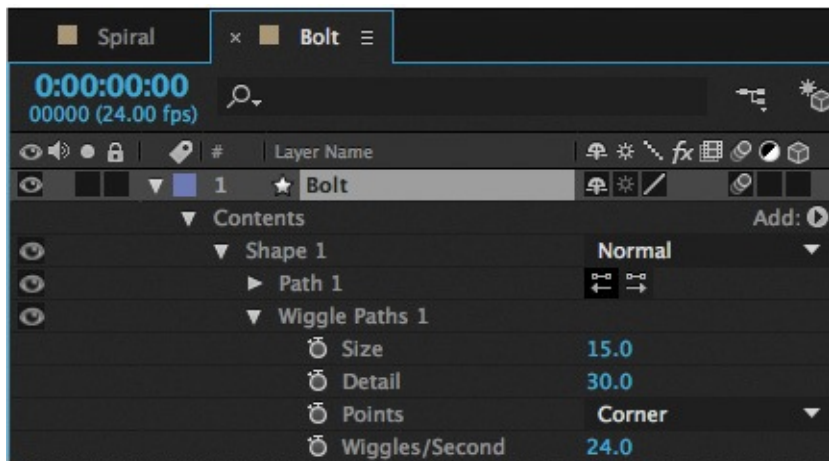
5. Select Shape Layer 1, press Enter or Return, and change the layer's name to **Bolt**. Press Enter or Return to accept the new name.
6. With the Bolt layer selected, click the Fill Color box in the Tools panel, and select a yellow color (we used R=255, G=237, B=0). Then click the Stroke Color box in the Tools panel, and select black (R=0, G=0, B=0).
7. Change the Stroke Width to **10 px**.



## Creating a self-animating shape

Wiggle Paths turns a smooth shape into a series of jagged peaks and valleys. You'll use it to make the lightning bolt more electrifying. Because the operation is self-animating, you need to change only a few properties for the entire shape to move on its own.

1. Expand the Bolt layer in the Timeline panel, and choose Wiggle Paths from the Add pop-up menu.
2. Expand Wiggle Paths 1. Then change the Size to **15** and the Detail to **30**.
3. Change Wiggles/Second to **24** to speed up the movement.
4. Click the Motion Blur switch for the layer, and then click the Enable Motion Blur button at the top of the Timeline panel. Then hide the layer properties.



5. Move the current-time indicator across the time ruler to see the shape move.

## Duplicating shapes

You could draw a shape multiple times, but it's easier to duplicate the shape automatically. The Repeater path operation lets you multiply a shape and transform its properties to achieve different results.

You'll use the Repeater path operation to duplicate a shape that was created in Adobe Illustrator and then pasted into the Path property of a shape layer in the Drop.aep project file.

1. In the Project panel, expand the drop.aep folder, and then double-click the Drop composition to open it.

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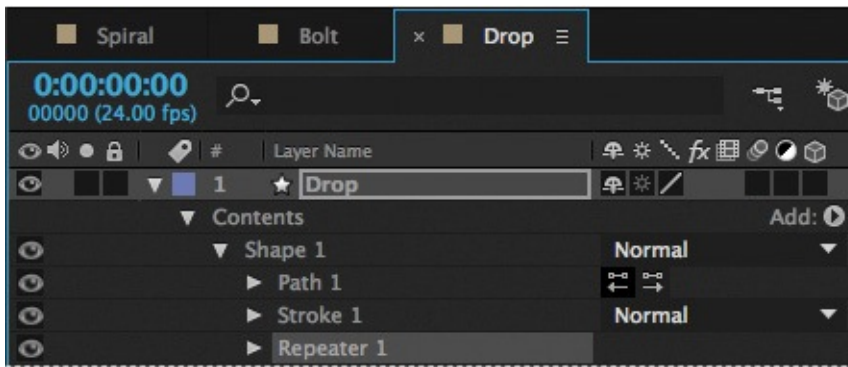
### Note

Choose Fit from the Magnification Ratio pop-up menu in the Composition window if you don't see the full shape.

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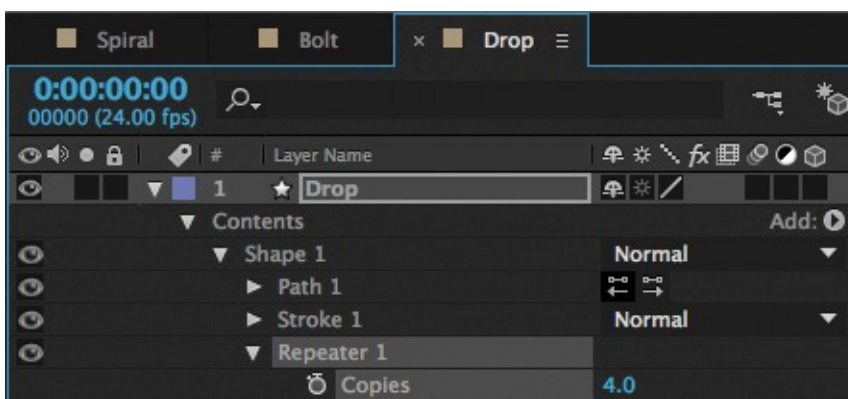
The Drop composition opens in the Timeline panel and the Composition panel.

2. Expand the Drop layer and its Contents folder if its properties aren't visible. Then select Shape 1, and choose Repeater from the Add pop-up menu.



You're selecting Shape 1 because you want to add the Repeater to the individual shape, not the entire layer.

3. Expand Repeater 1.
4. Change the number of copies to 4.



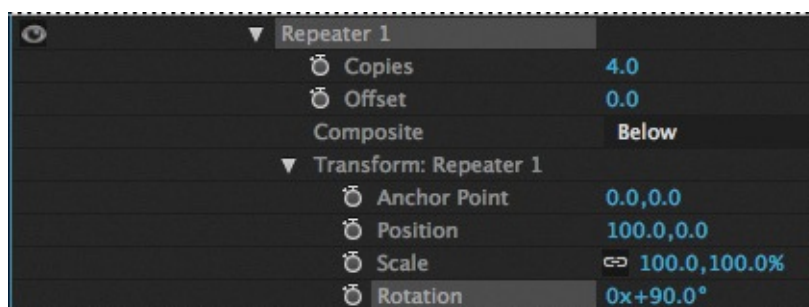
The Repeater creates three copies of the shape, for a total of four. You'll rotate the shapes and then reposition them to create a pinwheel.

5. Expand Transform: Repeater 1.

### Note

There are multiple Transform properties in the Timeline panel, applying to different path operators. Make sure you're selecting the appropriate Transform property for the object or layer you want to affect. In this case, you want to affect only the Repeater.

6. Change the Rotation to 90°.



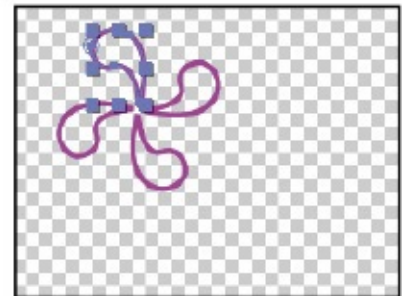
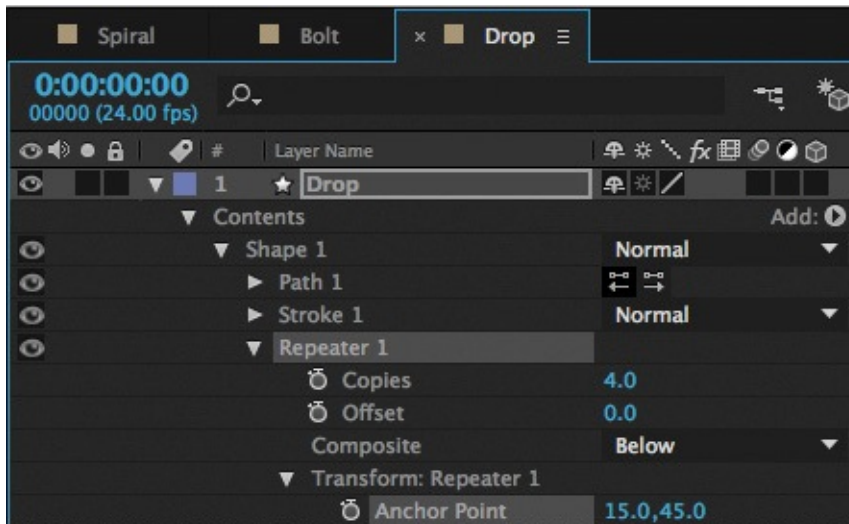
Because you applied the rotation to the Repeater rather than to the shape, each drop rotates around the layer's anchor point to a different degree. When you change the Transform properties for the Repeater, the change is multiplied by the number of copies created. In

this case, the first shape retains the original value of 0, the second shape rotates 90 degrees, the third shape rotates 180 degrees, and the fourth shape rotates 270 degrees. The same concept applies to each of the Transform properties.

7. In the Transform: Repeater 1 properties, change the Position to **0, 0**.

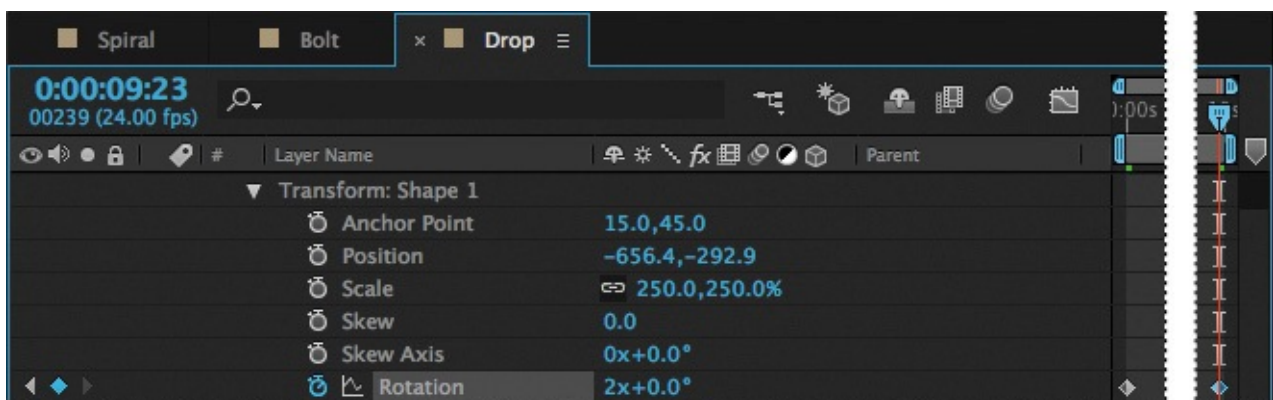
The shapes overlap because the anchor point is located in the center of each shape.

8. Change the Anchor Point value to **15, 45**.

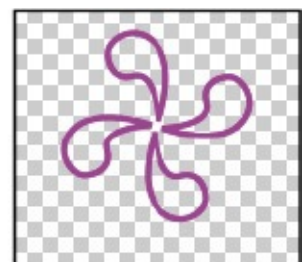
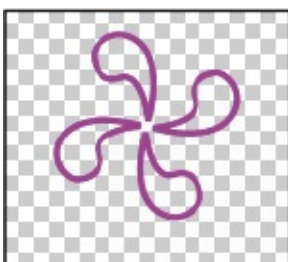


The shapes align to form a pinwheel. Now you'll make the pinwheel rotate.

9. Make sure the current-time indicator is at the beginning of the time ruler. Then, expand the Transform: Shape 1 category, and click the stopwatch icon next to the Rotation value to create an initial keyframe.
10. Press the End key or move the current-time indicator to the end of the time ruler, and change the Rotation value to **2x+0.0°**.



11. Drag the current-time indicator across the time ruler to see the pinwheel rotate.



You used the Repeater path operation to duplicate an individual shape. Now you'll use it to copy all the contents of the layer, turning one pinwheel into eight.

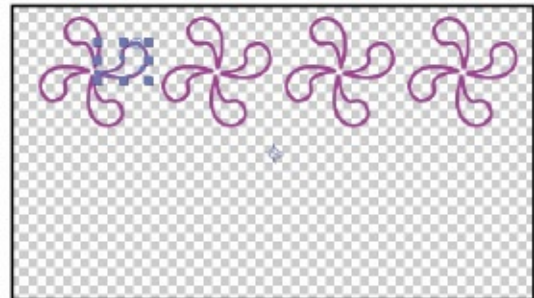
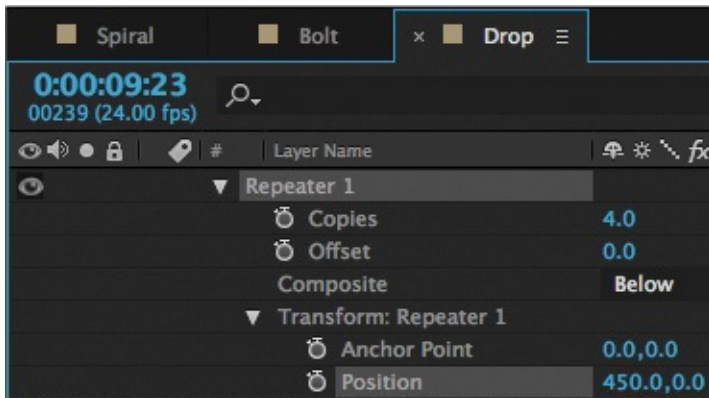


**12.** In the Timeline panel, hide all the properties under Shape 1. Then select the Drop layer, and choose Repeater from the Add pop-up menu.

**13.** Expand the new Repeater 1 category, and change the number of copies to **4**.

Because you applied the Repeater to the entire layer, the full pinwheel was copied.

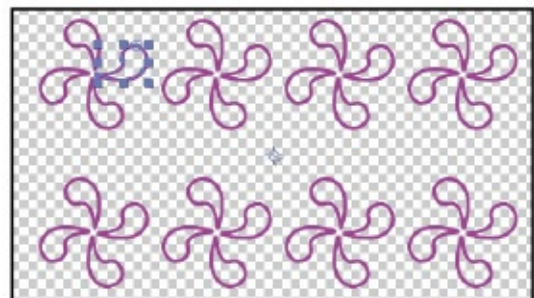
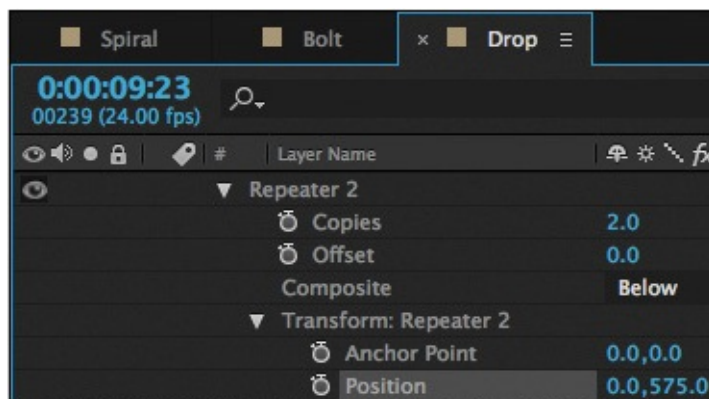
**14.** Expand the Transform: Repeater 1 category, and change the Position values to **450, 0**.



There are now four pinwheels across the top of the Composition window.

**15.** Select the Drop layer, and choose Repeater from the Add pop-up menu again to create the Repeater 2 category.

**16.** Expand the Repeater 2 category, and change the number of copies to **2**. Then expand the Transform: Repeater 2 category, and change the Position values to **0, 575**.



By applying another Repeater to the entire layer, you copied the full row of pinwheels.

**17.** Hide all the properties for the layer.

**18.** Click the Motion Blur switch for the layer, and then click the Enable Motion Blur button (Ⓢ) at the top of the Timeline panel.

**19.** Press the spacebar to preview eight pinwheels rotating in unison; press the spacebar again to stop the preview. Then choose File > Save to save your work so far.

## Duplicating and modifying a composition

You'll use the Drop composition as a starting point for a similar composition that uses different fill and stroke options.

1. In the Project panel, select the Drop composition, and choose Edit > Duplicate to create a copy of the composition.
2. Double-click the Drop 2 composition in the Project panel to open it. Then, in the Timeline panel, expand the Drop layer, and the Contents category.
3. Select Shape 1, and then choose Fill from the Add pop-up menu.
4. Expand Fill 1, click the Color box, and choose any fill color you like
5. Expand Stroke 1, click the Color box, and choose the stroke color you like.
6. Move the current-time indicator across the time ruler to preview the rotating pinwheels.
7. Hide all the properties for the layer.
8. Choose File > Save to save your work so far.

## Positioning layers with snapping

You've created and manipulated shapes in a variety of ways. Now you'll create a checkerboard pattern. Positioning the layers will be easy with the snapping feature in After Effects.

## Creating a new composition

This checkerboard background includes multiple layers, so you'll create a new composition for it.

1. Press Ctrl+N (Windows) or Command+N (Mac OS) to create a new composition.
2. In the Composition Settings dialog box, name the composition **Checkerboard**, choose HDTV 1080 24 from the Preset menu, and type **10:00** for Duration. Then click OK.

After Effects opens the new Checkerboard composition in the Timeline and Composition panels. You'll start by adding two solid layers—the building blocks of the checkerboard background.

3. Choose Layer > New > Solid to create a solid layer.
4. In the Solid Settings dialog box, do the following, and then click OK:
  - Name the layer **Dark Red**.
  - Change both the Width and Height to **200** px.
  - Choose Square Pixels from the Pixel Aspect Ratio menu.
  - Select a dark red color. (We used R=145, G=0, B=0.)