MAPPING ARTWORK WITH A 3D EFFECT

Lesson overview

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

- Map artwork to the surfaces of three-dimensional objects.

Creating a revolved object

In this part of the lesson, you will explore the 3D effect called Revolve. You will create a soda can from an existing path, using the Revolve effect.

1   Choose File > Open, and open the L12revolve.ai file in the Lesson_extras folder, located in the Lessons folder on your hard disk.

2   Choose File > Save As, name the file **sodacan.ai**, and select the Lesson_extras folder. Leave the Save As Type option set to Adobe Illustrator (*.AI) (Windows) or the Format option set to Adobe Illustrator (ai) (Mac OS), and then click Save. In the Illustrator Options dialog box, leave the Illustrator options at their default settings and then click OK.

3   Choose Reset Essentials from the workspace switcher in the Application bar to reset the workspace.

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

4   Click the Artboards panel icon (▦) to expand the Artboards panel.

5   Double-click Artboard 2 in the panel (not the name) to fit the artboard in the Document window. Click the Artboards panel tab to collapse the panel.

6   Choose Select > All On Active Artboard.

The selected path is half of the shape of a soda can. When you apply the Revolve effect to it, it will be revolved around the right or left edge to create a 360 degree shape, if that's what you want.

7   Click the Stroke color in the Control panel, and choose None (⬜).

8   Click the Fill color in the Control panel, and select White.

● **Note:** Depending on the complexity of the shape being revolved and the speed of the computer you are working on, making changes in the 3D Revolve Options dialog box can take some time. It may be helpful to deselect Preview, make some changes, and then select Preview again. That way the shape does not have to "redraw" on the artboard every time a change is made in the dialog box.
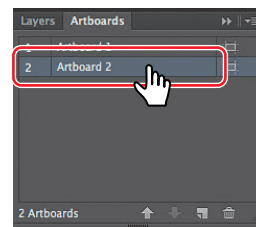
9 Choose Effect > 3D > Revolve. In the 3D Revolve Options dialog box, change the following options:

- Position: **Front**
- Offset From: **Right Edge** (This is the edge that your arc revolves around. The result varies dramatically, depending on the side that you choose and whether you have a stroke or fill applied to the original object.)
- Preview: **Select**

Click OK.
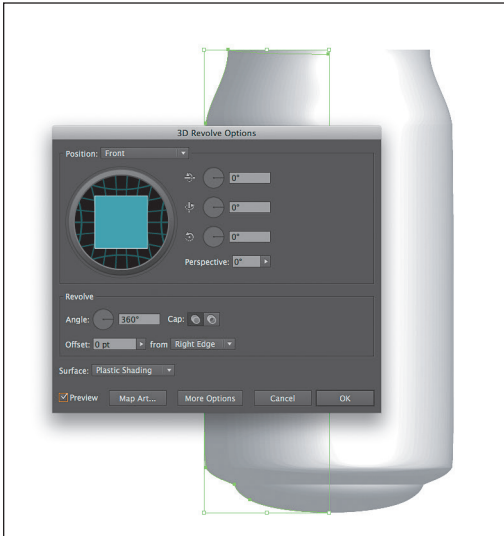
10 Choose File > Save, and keep the file open.

3D Revolve options

In the 3D Options dialog box for the Revolve 3D effect, there are several other options worth mentioning:

- **Angle:** Sets the number of degrees to revolve the path, between 0 and 360.
- **Cap:** Specifies whether the object appears solid (Turn Cap On For Solid Appearance) or hollow (Turn Cap Off For Hollow Appearance).
- **Offset:** Adds distance between the revolve axis and the path, to create a ring-shaped object, for instance. You can enter a value between 0 and 1,000.

—From Illustrator Help

Changing the lighting of a 3D object

The Revolve effect allows you to add one or more lights, vary the light intensity, change the object's shading color, and move lights around the object.

In this section, you will change the strength and direction of the light source.

1 Choose Window > Appearance to open the Appearance panel.

2 With the soda can shape selected, click the words "3D Revolve" in the Appearance panel. You may need to scroll in the Appearance panel or resize it for easier viewing.
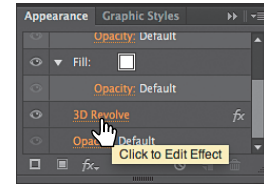
In the 3D Revolve Options dialog box, you can create custom lighting effects on your 3D object. Use the Preview window in the lower left of the 3D Revolve Options dialog box to reposition the lighting and to change the shade color.

3 In the 3D Revolve Options dialog box, Select Preview and click More Options.

4 Choose Plastic Shading from the Surface menu, if not already selected.

5 In the Preview window (the shaded sphere), drag the white square that represents the light source to the left. This changes the direction of the lighting. Click the New Light button (▣) to add another light source to the soda can. Drag the second light source down and to the right.

► **Tip:** The Angle determines the degree of revolution. To create a "cut-away" look, you can change the degree to less than 360.
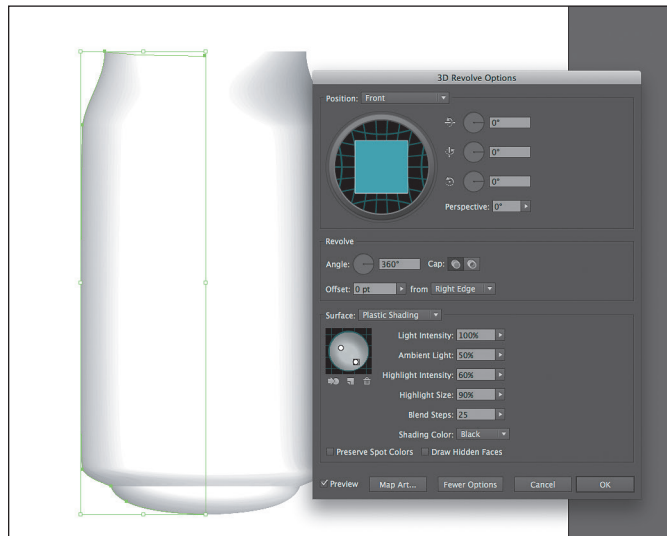
Try positioning them in different arrangements, and move the dialog box out of the way to see the artwork.

6 In the 3D Revolve Options dialog box, change Light Intensity to **80%** and the Ambient Light to **10%**. Leave the dialog box open.

Ambient light controls the brightness uniformly on the surface of the 3D object.

7 Change the Blend Steps to **40**, and click OK when it is done processing.
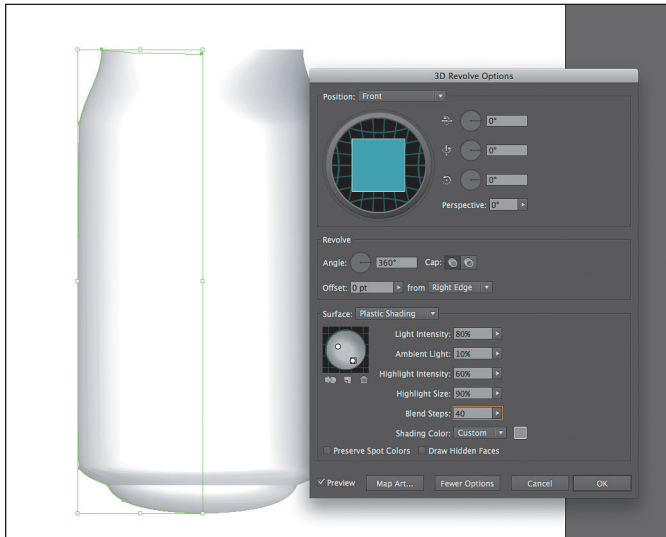
8 Choose Custom from the Shading Color menu. Click the colored square to the right of the Shading Color menu to open the Color Picker. In the Color Picker, change the color to a medium gray (C=**0**, M=**0**, Y=**0**, K=**50**). Click OK to close the Color Picker, and return to the 3D Revolve Options dialog box.
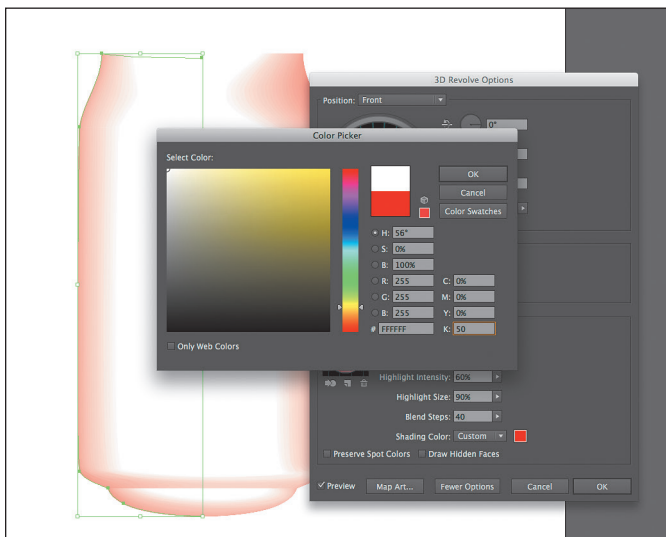
9 Choose File > Save.

Surface shading options

In the 3D Options dialog box for Extrude & Bevel and Revolve, Surface lets you choose options for shading surfaces such as:

- **Wireframe:** Outlines the contours of the object's geometry and makes each surface transparent.
- **No Shading:** Adds no new surface properties to the object. The 3D object has the same color as the original 2D object.
- **Diffuse Shading:** Makes the object reflect light in a soft, diffuse pattern.
- **Plastic Shading:** Makes the object reflect light as if it were made of a shiny, high-gloss material.

Note: Depending on what option you choose, different lighting options are available. If the object only uses the 3D Rotate effect, the only Surface choices available are Diffuse Shading or No Shading.

—From Illustrator Help

Mapping a symbol to the 3D artwork

You can map artwork to the surface of an object with a 3D effect applied. This artwork can come from Illustrator or from artwork imported from other applications, such as Photoshop. The artwork you map needs to be 2D artwork that's stored in the Symbols panel. Symbols can be any Illustrator art object, including paths, compound paths, text, raster images, mesh objects, and groups of objects. In this part of the lesson, you will map the soda label that you previously saved as a symbol to the soda can.

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

2 Choose View > Fit Artboard In Window, if necessary.

3 Choose Select > All On Active Artboard.

4 Choose Object > Group.

5 Click the Symbols panel icon (◆), or choose Window > Symbols to expand the Symbols panel. Select the Selection tool and, with the group selected, click the New Symbol button (🔲) at the bottom of the Symbols panel to create a symbol. In the Symbol Options dialog box, name the symbol **soda label** and choose Graphic from the Type menu. Click OK.
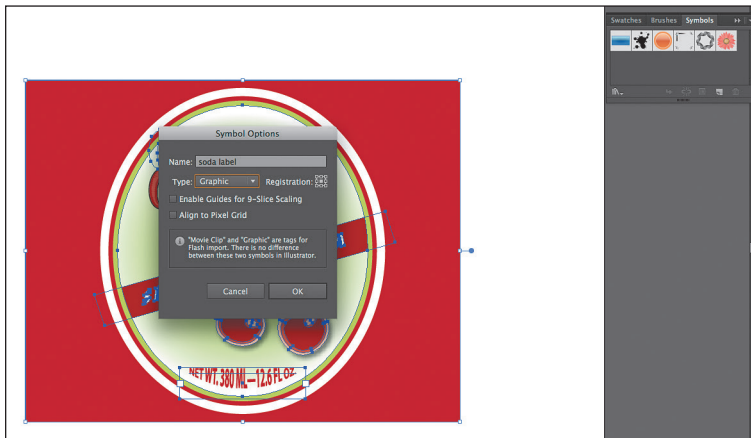
6 Choose Select > Deselect and then File > Save. Keep the file open.

▶ **Tip:** To learn more about symbols, see Lesson 14, "Working with Symbols."

Next, you will map the symbol to the soda can.

1 Choose 2 from the Artboard Navigation menu in the lower-left corner of the Document window. Choose View > Fit Artboard In Window, if necessary.

2 With the Selection tool, click to select the soda can.

3 Choose Window > Appearance to open the Appearance panel. In the panel, click 3D Revolve. Drag the 3D Revolve Options dialog box off to the side, so that you can see the soda can artwork. Make sure that Preview is also selected.

**4** Click the Map Art button at the bottom of the 3D Revolve Options dialog box.

When you map art to a 3D object, you first need to choose which surface to map the art to. Every 3D object is composed of multiple surfaces. For example, an extruded square becomes a cube that is made of six surfaces: the front and back faces and the four side faces. Next, you will choose which surface to map the artwork to.

5 Drag the Map Art dialog box off to the side. Click the Next Surface button (▶) until "4 of 4" appears in the Surface field. In the artwork, notice that Illustrator is highlighting the wireframe and the selected surface in red.

● **Note:** You can work in the Map Art dialog box without selecting Preview, if you find that Preview slows your system down.

6 Choose soda label from the Symbol menu. Select Preview, if not already selected.

● **Note:** If you select the wrong surface, choose Clear and then map to another surface.
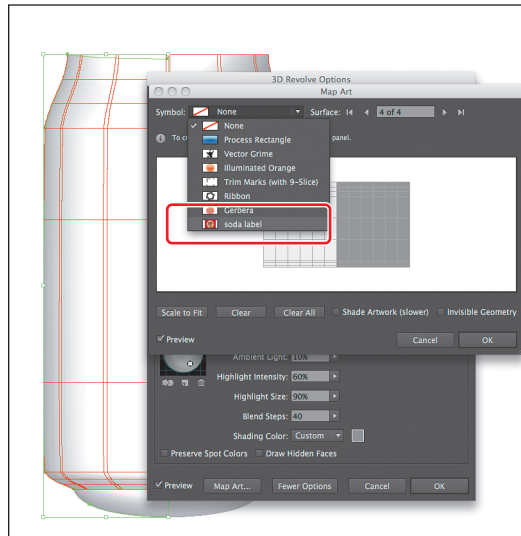
7 Deselect Preview in the Map Art dialog box to speed up the next few steps.

▶ **Tip:** If you don't like the position or size of the symbol artwork, you can click the Clear button at the bottom of the dialog box to clear the symbol artwork from the current surface.

8 Drag the symbol into the light area of the map in the Map Art dialog box.

A light gray color marks surfaces that are currently visible. A dark gray color marks surfaces that are hidden by the object's current position.

9 Select Shade Artwork (Slower). Select Preview to see the artwork with the symbol mapped to it. You may want to reposition or resize the artwork. Then, click OK to close the Map Art dialog box.

● **Note:** You may see some odd redraw as you proceed, but it should be fine.

▶ **Tip:** You can interact with the symbol in the Map Art dialog box, using the normal bounding box controls to move, scale, or rotate the object.

10 In the 3D Revolve Options dialog box, click the Fewer Options button and then click the left edge of the blue square and drag to the right to spin the 3D object along the Y axis. With Preview selected, release the mouse button when you see a value of -11 in the Y axis field. Make sure that the X and Z values above and below the Y value are 0. Click OK.
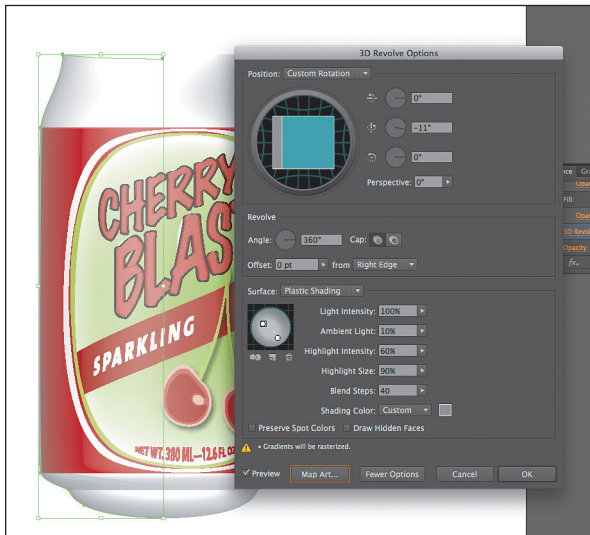
The texture now wraps around the soda can. Next, you will edit the soda can color.

To map artwork to a 3D object

When mapping 3D objects, consider the following:

- Because the Map Art feature uses symbols for mapping, you can edit a symbol instance and then automatically update all surfaces that are mapped with it.

- You can interact with the symbol in the Map Art dialog box with normal bounding box controls to move, scale, or rotate the object.

- The 3D effect remembers each mapped surface on an object as a number. If you edit the 3D object or apply the same effect to a new object, there may be fewer or more sides than the original. If there are fewer surfaces than the number of surfaces defined for the original mapping, the extra artwork will be ignored.

- Because a symbol's position is relative to the center of an object surface, if the geometry of the surface changes, the symbol will be remapped relative to the new center of the object.

- You can map artwork to objects that use the Extrude & Bevel or Revolve effect, but you can't map artwork to objects that only use the Rotate effect.

—From Illustrator Help

11 With the Selection tool selected and the 3D object selected, change the Fill color to the swatch named Background in the Control panel.

Notice that the entire shape changes color, except where the symbol artwork is mapped to the surface. At this point, if necessary, you can edit the shape that you started with. If you need to rotate the 3D object, in this situation it's best done in the 3D Revolve Options dialog box.

▶ **Tip:** If you need to edit the shape, it is recommended that you first deselect the visibility column of the 3D Revolve (Mapped) effect in the Appearance panel. Then, when you are finished editing the shape, click the visibility column to show the 3D Revolve (Mapped) effect again.

12 Choose Select > Deselect.

13 Choose File > Save, and then choose File > Close.