How to Design Curves

In this tutorial you will learn how to use CorelDRAW's Draw and Shape tools to create and edit curved objects.

Step 1: Understanding Curves

What is a curve object?

A curve is a vector object made up of segments, nodes, and control handles, which you can use to precisely alter the object's shape. A curve can be any shape, including a straight or curved line segment.


Curve objects in CorelDRAW are defined by a path, which can be open (i.e., a line segment) or closed (i.e., a circle).

Step 2: Curve Tools

The following tools are used to create straight and curved line segments and can be found under the **Curve Tools** flyout menu in the toolbar.

Freehand & Polyline Tools

The **Freehand** tool allows you to easily draw a straight line segment by clicking once to set a starting point and clicking again to set an endpoint. Double-click to add another segment without ending the curve. Click and drag to draw a curved segment, and CorelDRAW will automatically create nodes when you're done.
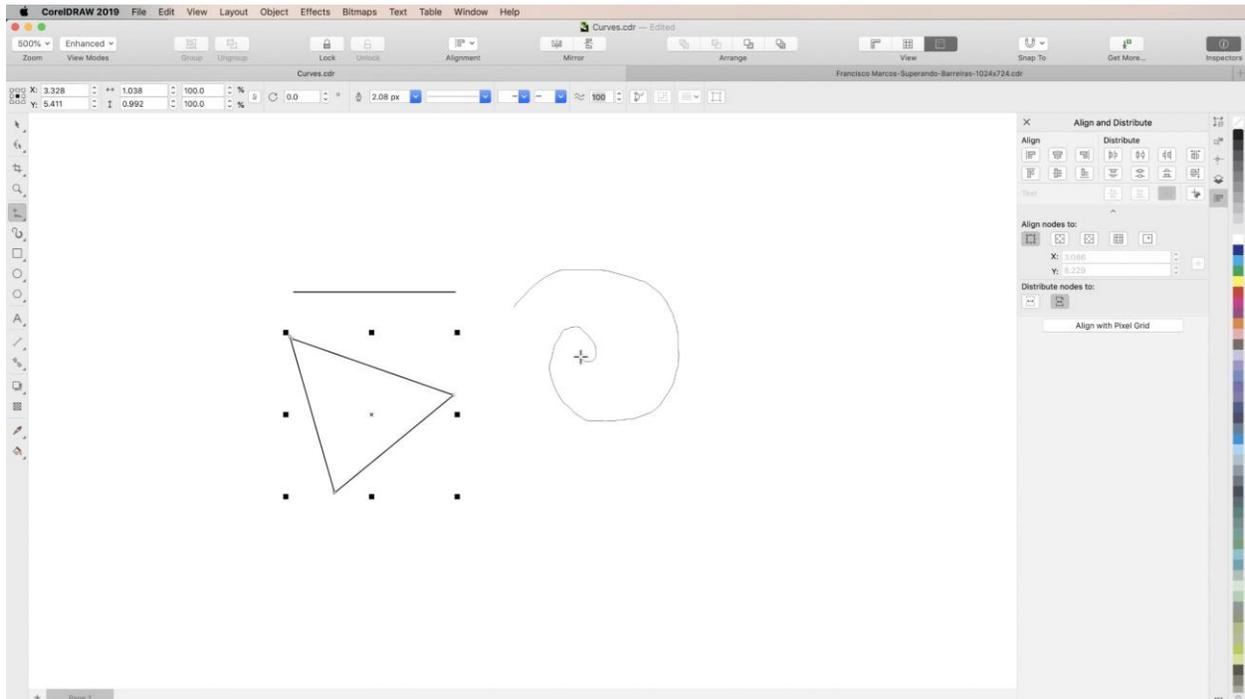
The **Polyline** tool works the same but is better for complex curves because it will continue adding segments with just a single click. Double-click or reconnect to your starting point to complete your curve.

Both of these tools allow you to adjust the amount which CorelDRAW will smooth your freehand drawing.

2-Point Line Tool

Click and drag with the **2-Point Line** tool, then let go to create a straight line segment. Hold **Shift** as you draw to snap your segment to 15 degree angles.

Bezier & Pen Tools

The **Bezier** and **Pen** tools continuously add segments to a curve with a single click, allowing you to adjust the shape of each curved segment as you draw. The **Pen** tool gives you the added ability to preview your line segments while you draw. Double-click or reconnect to your starting point to complete your curve.
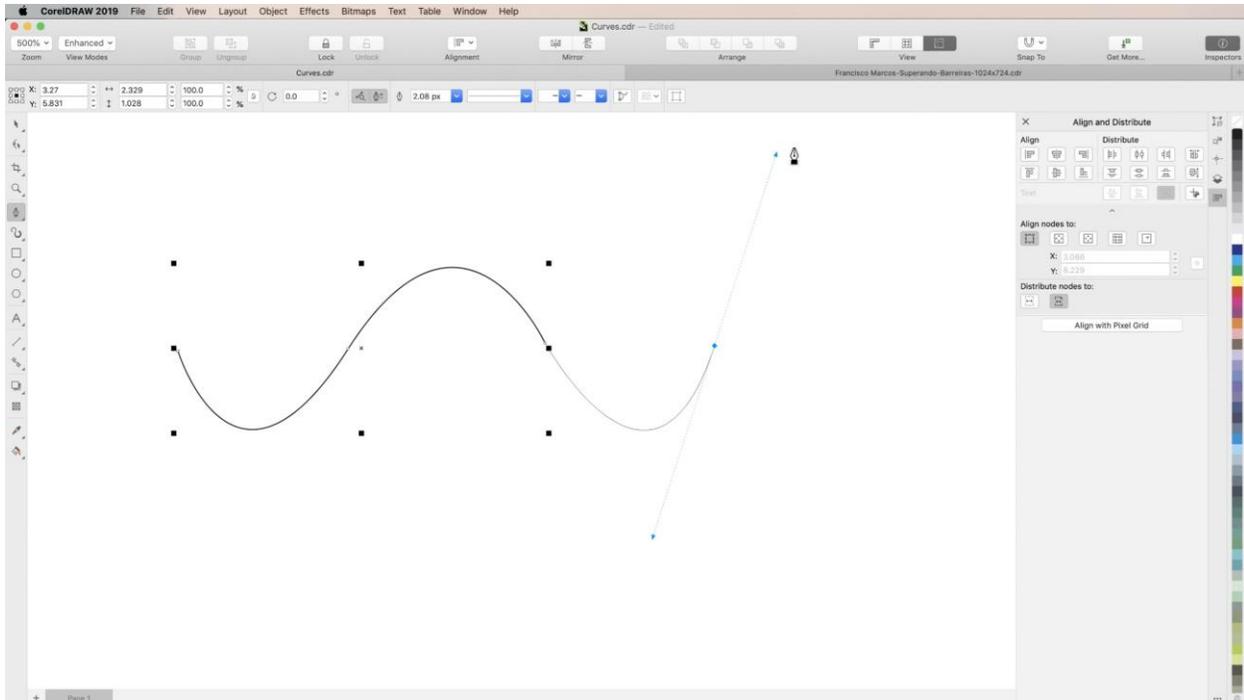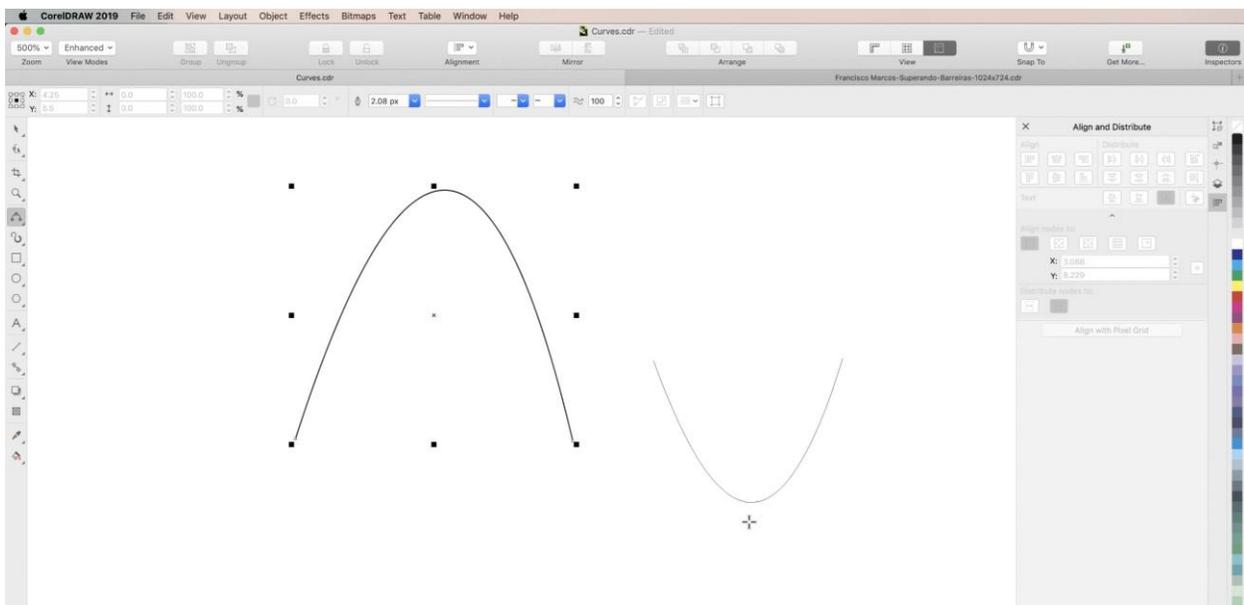
B-Spline Tool

The **B-Spline** tool allows you to draw curved lines by setting control points that shape the curve without breaking it into segments.

3-Point Curve Tool

Use the **3-Point** tool to quickly create arc-shaped curves without setting nodes. Click two points to set the arc's width. Click a third time to set the arc's height.

Hold **Shift** to create a symmetrical arc. Hold **Command** to create a circular arc.

Step 3: Nodes

Nodes are the points that connect the segments of a curve object. Select the **Shape** tool to alter your curves by manipulating node handles.

There are 3 main types of nodes in CorelDRAW: Cusp, Smooth, and Symmetrical. If you go to **CorelDRAW 2019** > **Preferences** > **CorelDRAW**, and choose **Nodes and Handles**, you have the option to customize the appearance of your nodes. For the purposes of this tutorial, change **Node Size** to **Large** for easier visibility as we learn to work with them.

Cusp nodes allow you to create sharp transitions between segments in a curve object. You can control the handles on either side of the node independently of one another, allowing you to create sharp angles.
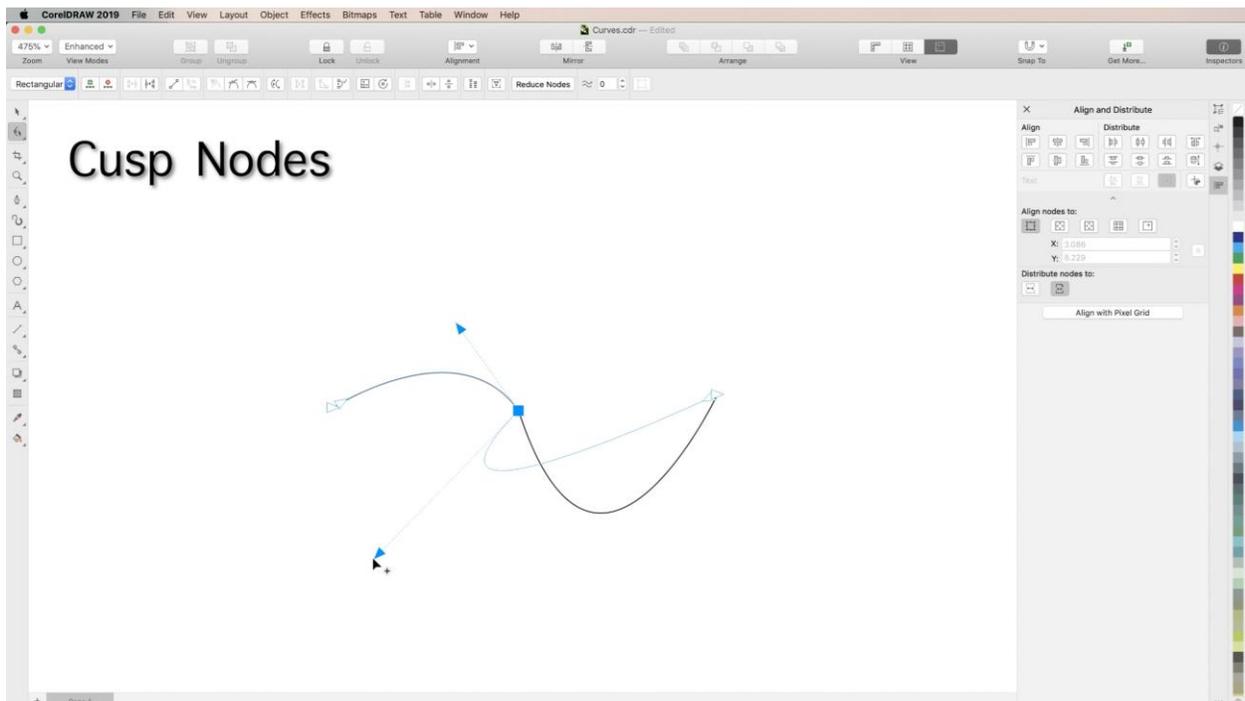

To change a node type, right-click on the node and choose a different type.

Smooth nodes create smooth transitions between the segments that they connect. These handles are fixed directly opposite one another, but you can drag them to different distances from the node to adjust the curve.
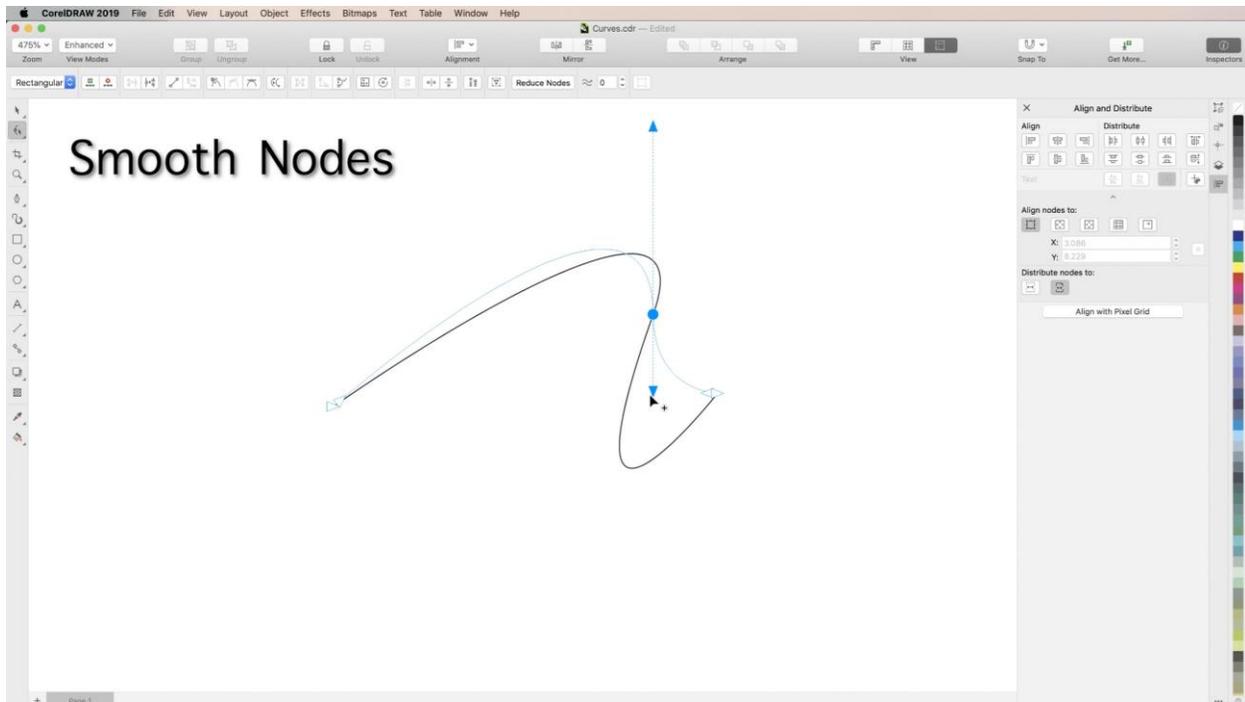
To add a node, just double-click on a curve.

Symmetrical nodes are similar to smooth nodes, but their handles will always stay equidistant from the node, ensuring that the segment on either side of the node keeps an identical curved transition.
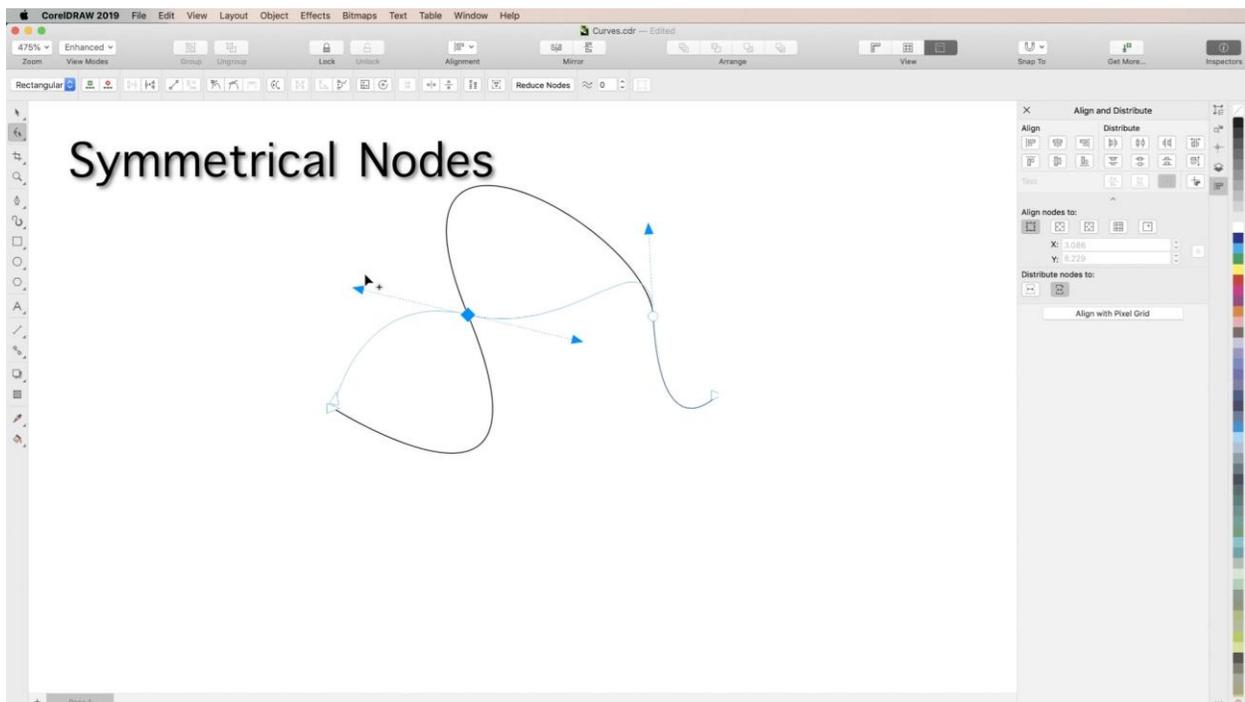
Line Nodes appear at the beginning and end of a curve path and can also be used to adjust the shape of your curves.

Step 4: Convert to Curves

Most objects created within or added to a document in CorelDRAW are not curves, with the exception of spirals, freehand lines, and Bezier lines.

If you want to customize the shape of a line or a simple object, like a rectangle, you can easily convert it to a curve by right-clicking on it and choosing **Convert to curve**.
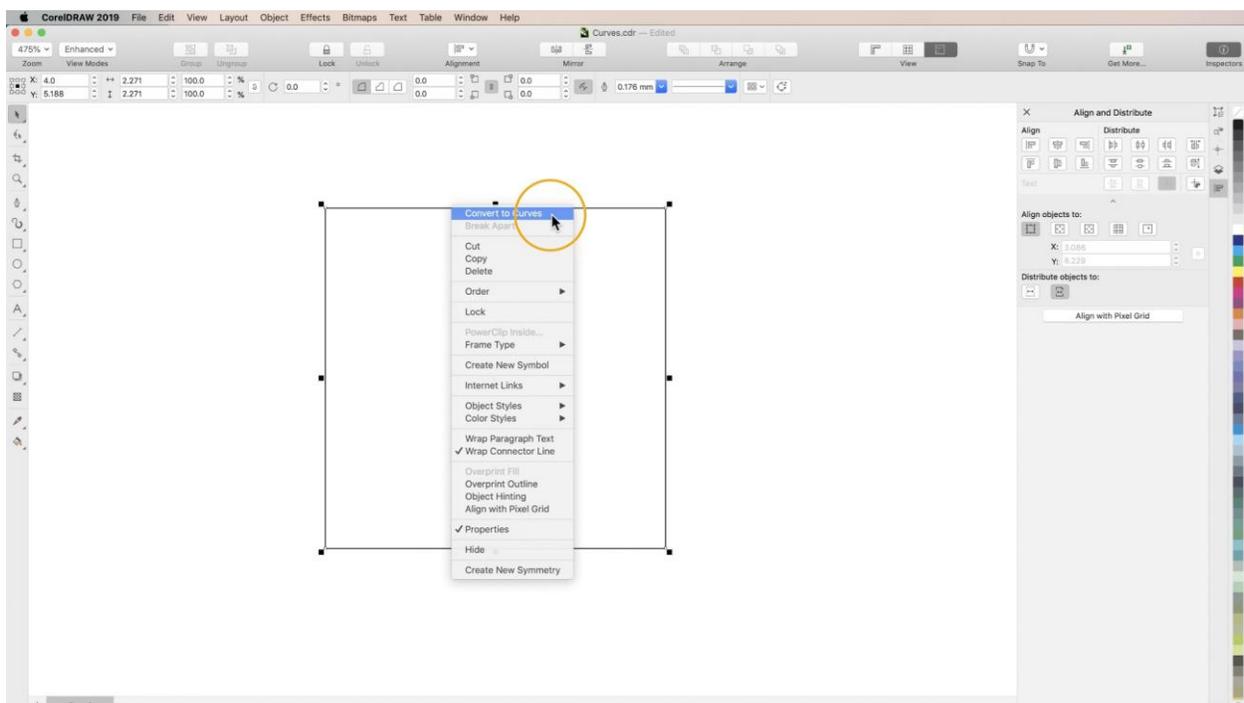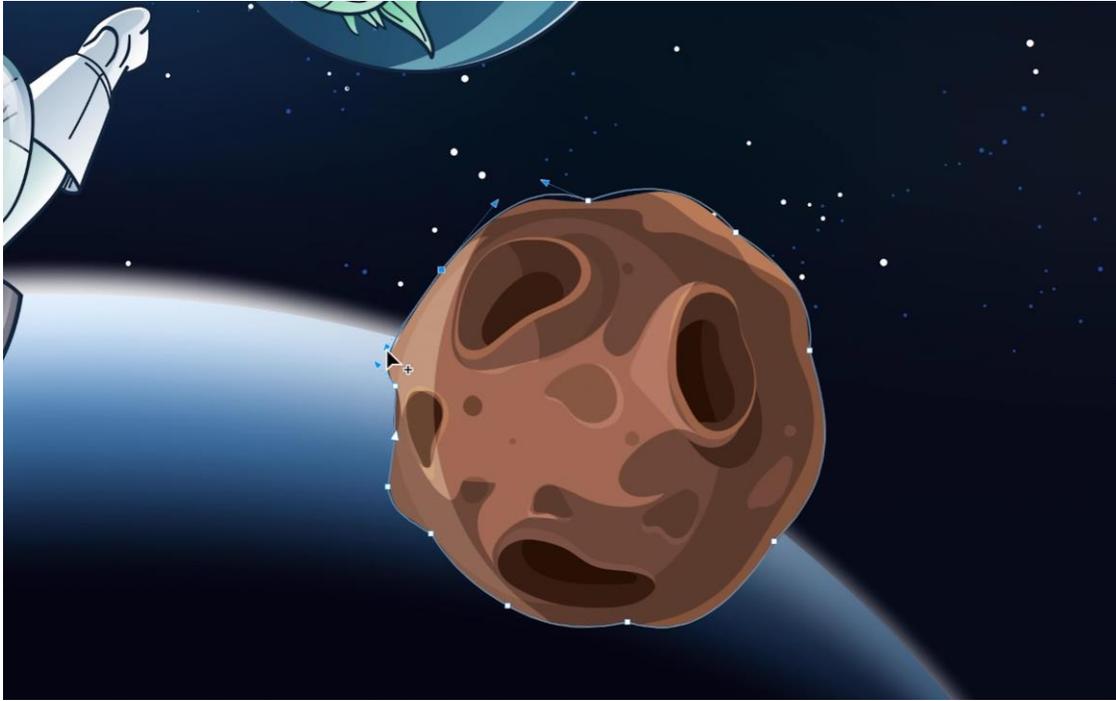

Tracing with Curves

Tracing shapes is a great way to practice using your curve tools.

To start, place a new object into your document and select the **Freehand** or **Polyline** tool. Create nodes at key points around the outline of your object.

Then use the **Shape** tool to lasso the nodes you created. Right-click and choose Convert to Curve then manipulate the handles to adjust your segments until your curve matches the outline. Now you have a curve object that you can easily customize.

You can use this method, along with the other curve tools to recreate just about any piece of artwork you want. Keep practicing by tracing more and more complex objects.