Making Spiraling Shapes Around Curves Tutorial

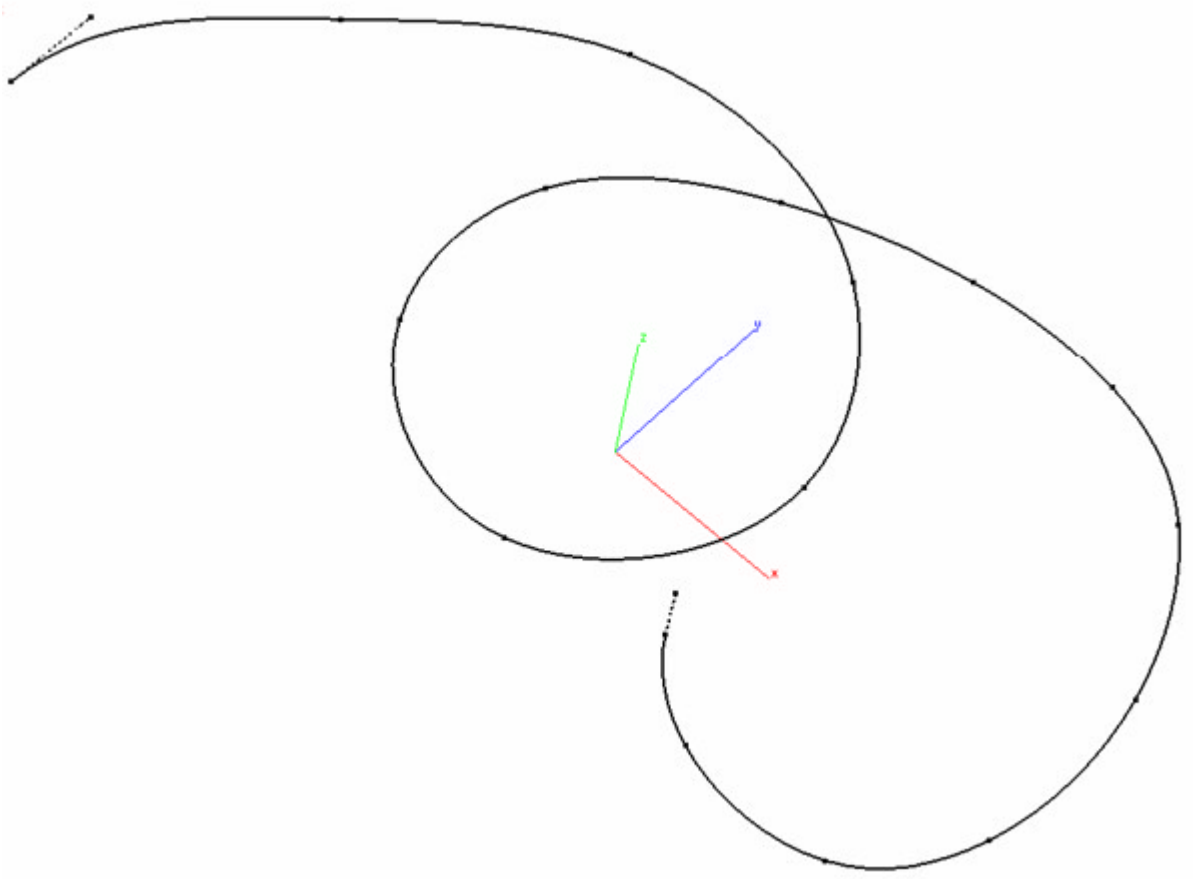
Using Cobalt™, Xenon™, Argon™

SPIR0903

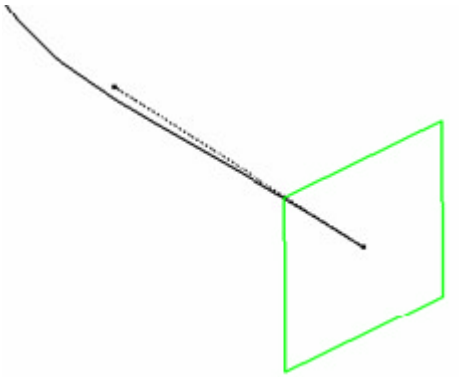
Making Spiraling Shapes Around Curves

Technique 1

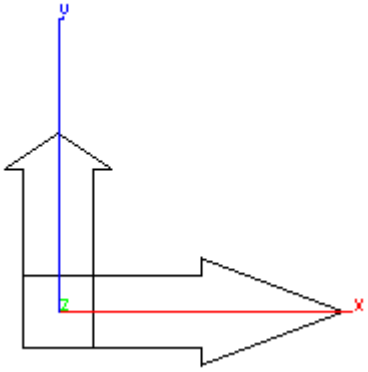
1. Start by drawing a curvy spline shape. This will be the path.



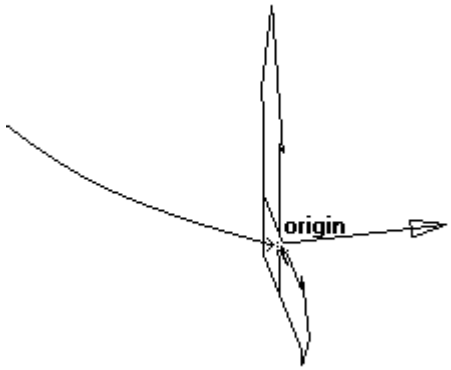
2. Next, it is necessary to draw a rectangle that is centered at the end point of the spline and oriented perpendicular to the end of the spline.

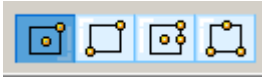


   - In order to orient the rectangle perpendicular to the end of the spline, use the work plane. Go to ***Planes>Show Work Plane.*** The work plane appears on the screen.



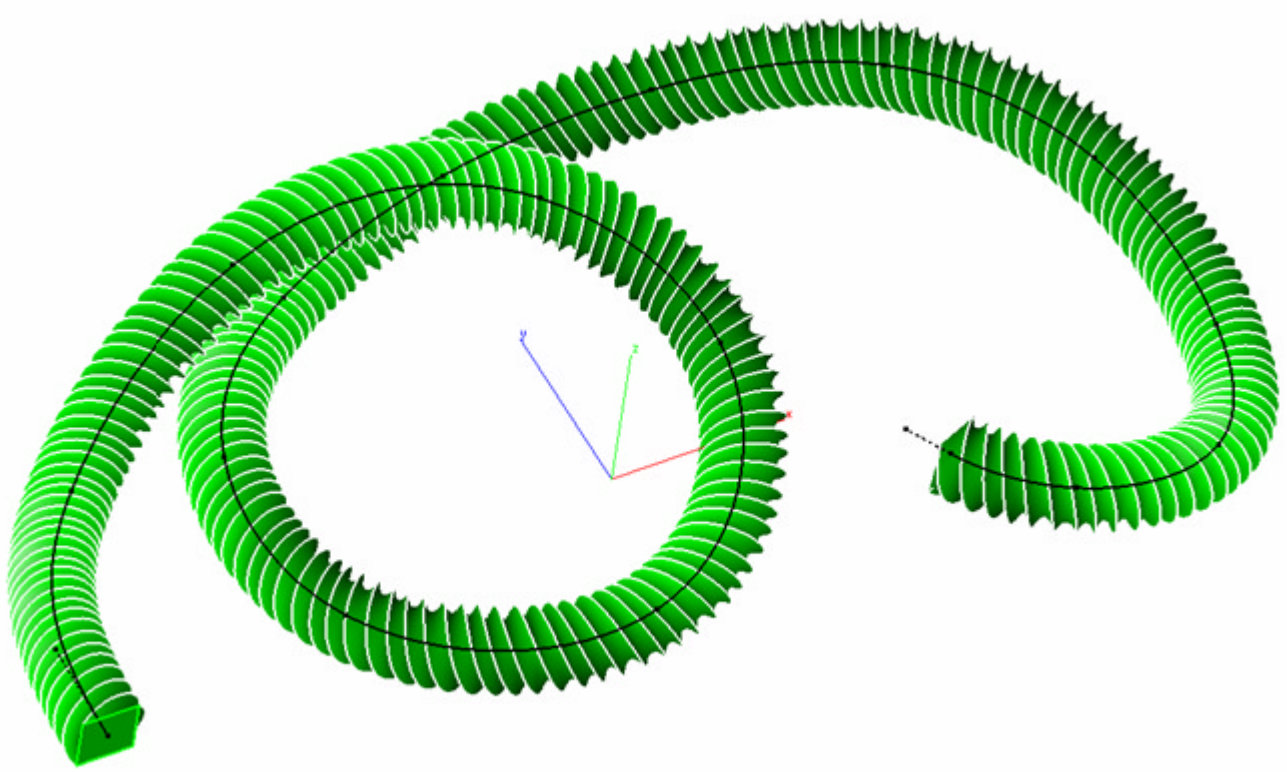
   - Then go to ***Planes>Pick Objects*** and click the endpoint of the spline. The work plane symbol moves to the endpoint clicked. Place the pointer over the edpoint of the spline so that *origin* appears in the Drafting Assistant.
   - Press the C key until the workplane orients perpendicular to the spline endpoint.



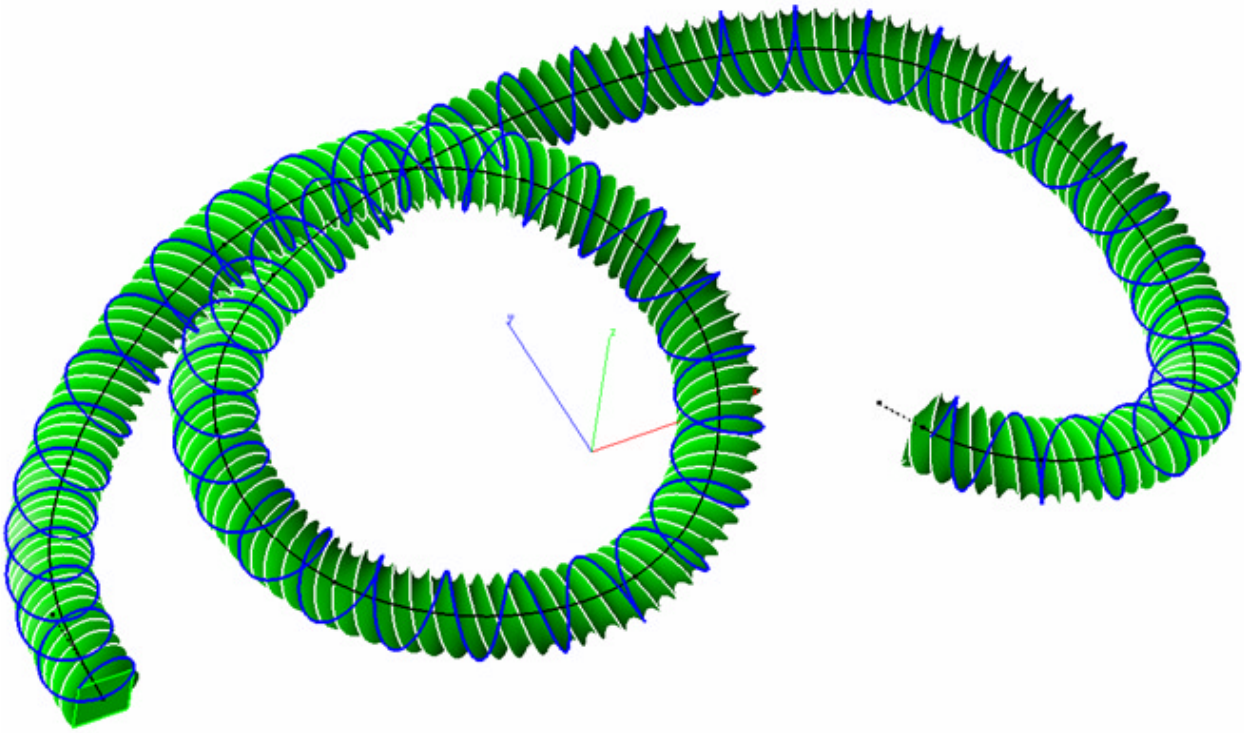
3. Choose the **Rectangular**  tool with the option to build by center and corner points. 
4. Create a rectangle with the center point placed on the endpoint of the spline.

5. Select the **Swept Solid** tool. Specify **Sweep in Place** and **Curve Extents** options.

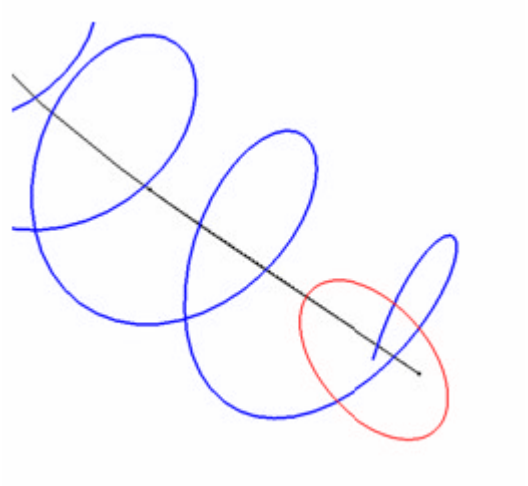
6. Sweep the rectangle along the path, and type in a large “twist” value, such as 20,000 degrees, in the Status Line.



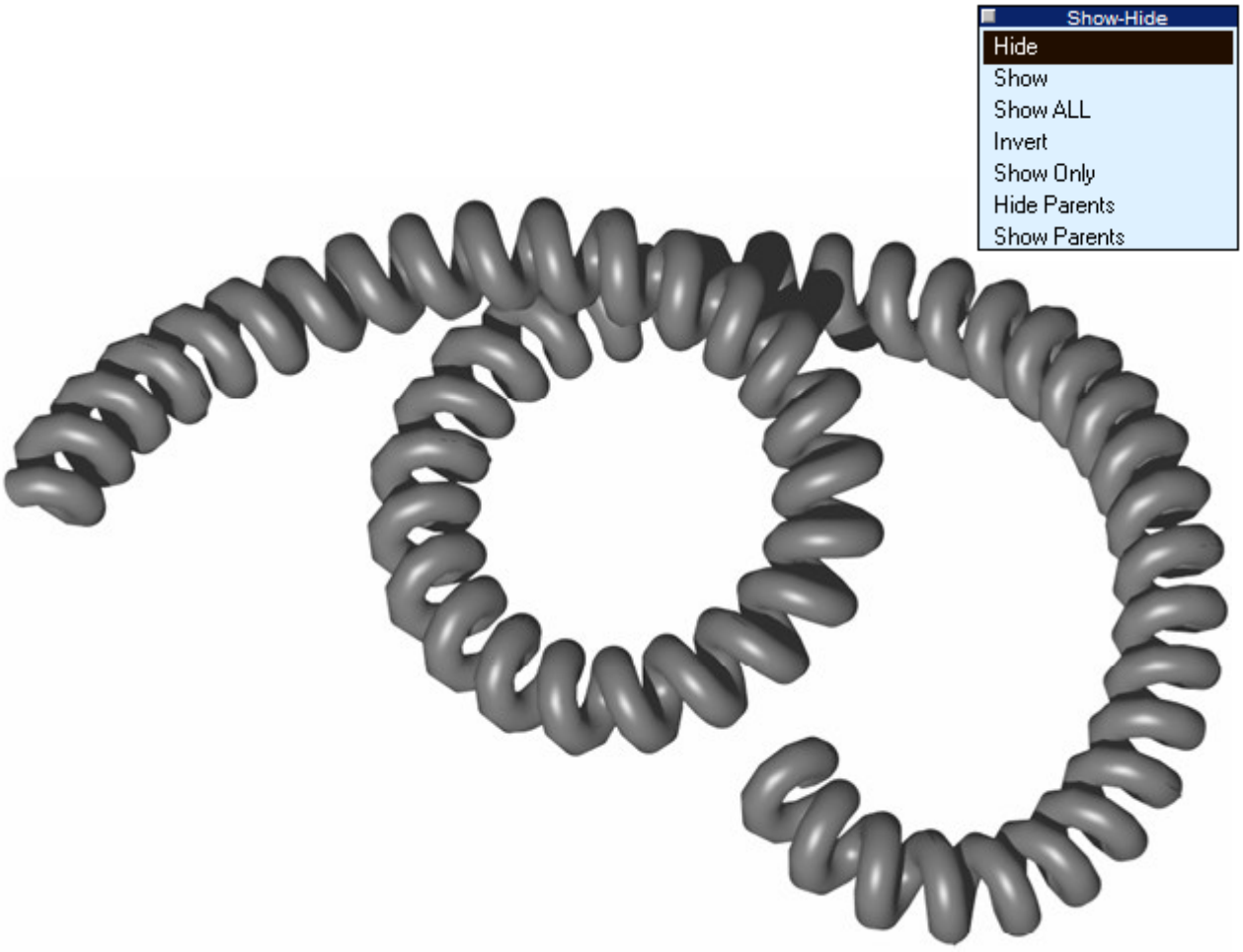
7. Next, select the **Explode Edge**  tool and click on one of the spiraling edges.



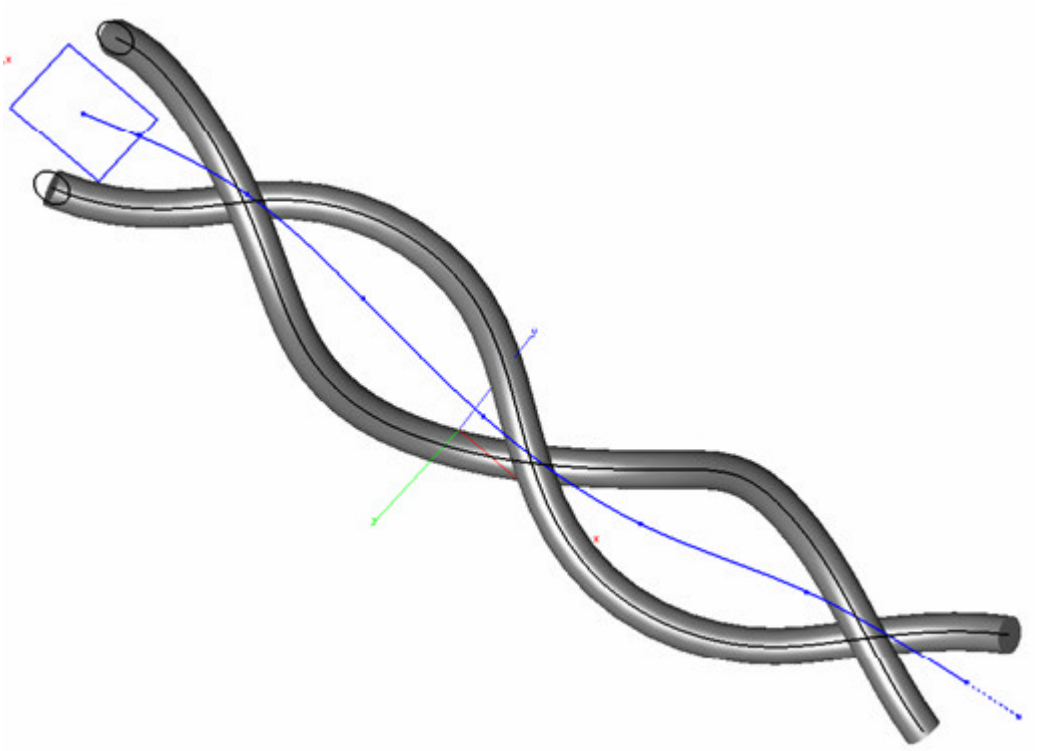
8. Draw a new profile shape, like a circle, and orient it to the end of the new curve created from the exploded edge of the twisted shape.



9. Use the **Swept Solid**  tool again but with no twist value. Sweep the circle along the path. The result should be something like the shape below.
   - Use the Show-Hide palette from the Windows menu to hide the extra details.

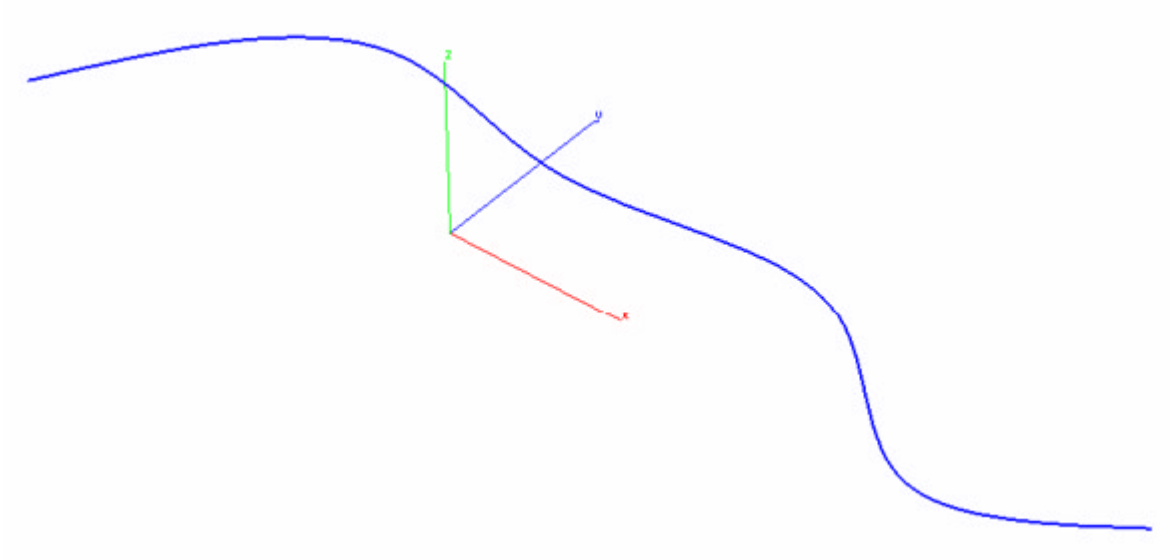


10. It is also possible to explode more than one edge of the twisted rectangle shape. These edges can be used to create double helix or braided shapes.

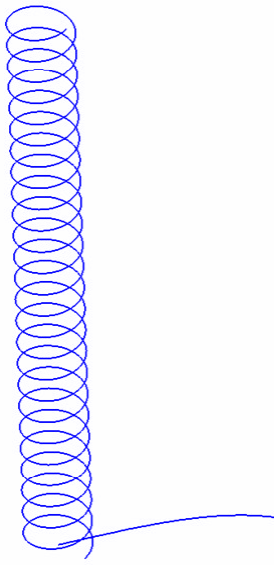


Technique 2

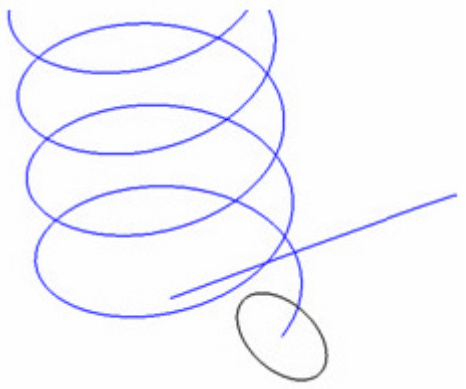
1. Draw a spline path of some sort.



2. Next, use the **Helix**  tool to draw a vertical helix, located at the start of the spline path.



3. Now draw a circle (or other shape) and position it perpendicular to the start of the helix.

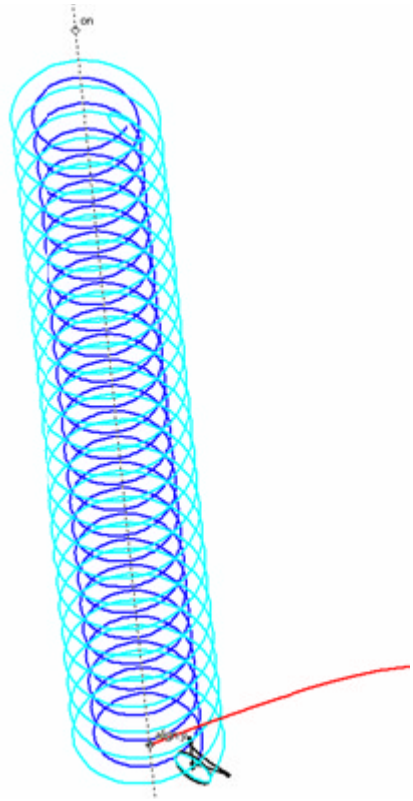


4. Use either the **Sweep 1 Rail Surface**  tool, or the **Swept Solid**  tool and sweep the shape along the helix.

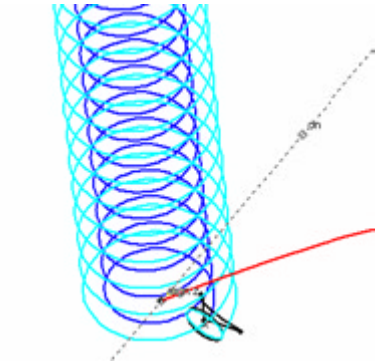
5. Next, select the **Bend**  tool using the **Along Path** option.

6. First, select the object to bend, and then select the curve along which to bend.

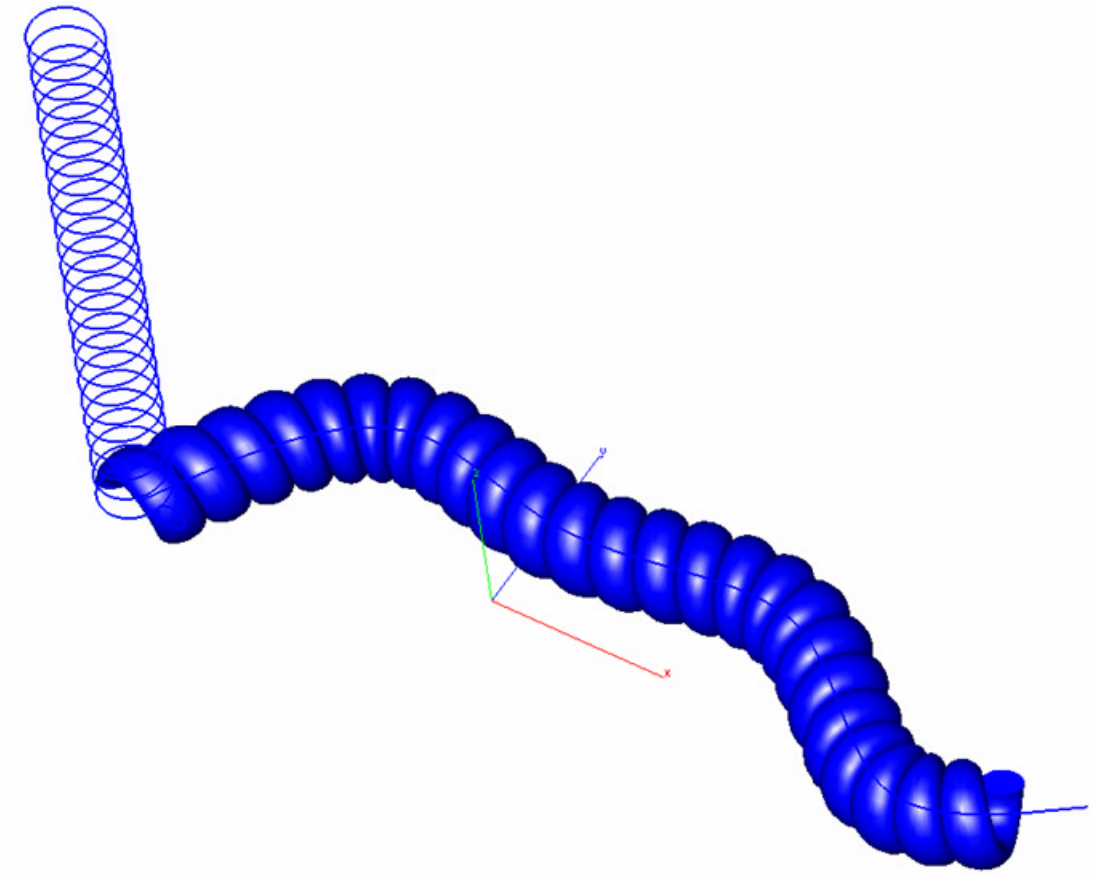
7. Define a height axis (how much of the object should stretch and bend to the curve).



8. Finally, select an alignment axis (an axis to which the object should lie relatively perpendicular).



9. The shape should then bend to the curve like this.



10. Play with different profile shapes to get all sorts of interesting spiral shapes.