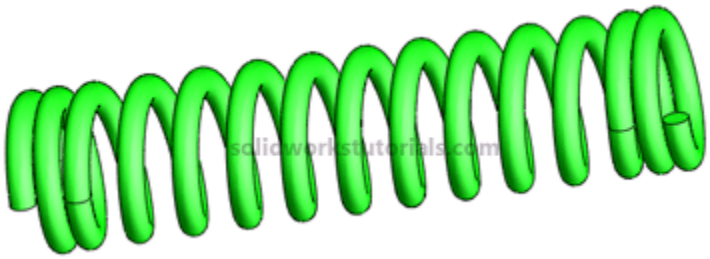
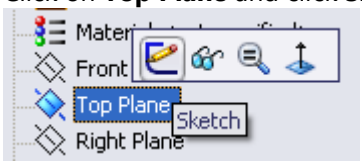
Solidworks Tutorial #4: How to create compression spring

Spring is a common mechanical parts, there is compression, extension and torsion spring. Here is the basic design springs in Solidworks…

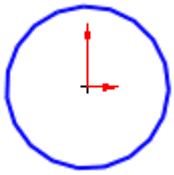


1. Click **New**,  click **Part**,  **OK**.

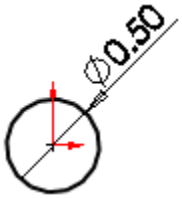
2. Click on **Top Plane** and click **Sketch**.



3. Click **Circle**  , sketch a circle center at origin.

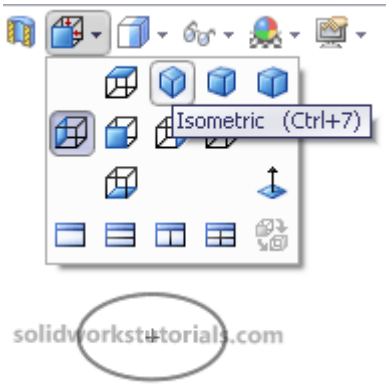


Click on **Smart Dimension**  and click on circle a dimension it to **0.5”**.

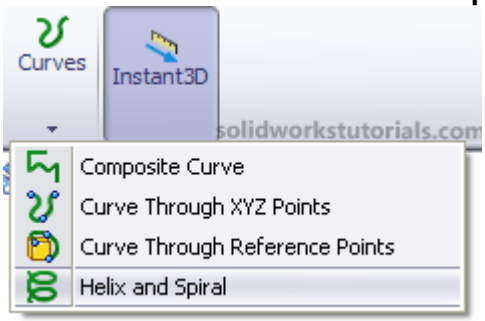


Click **Exit Sketch**. 

4. Click on **View Orientation** and click on **Isometric**.

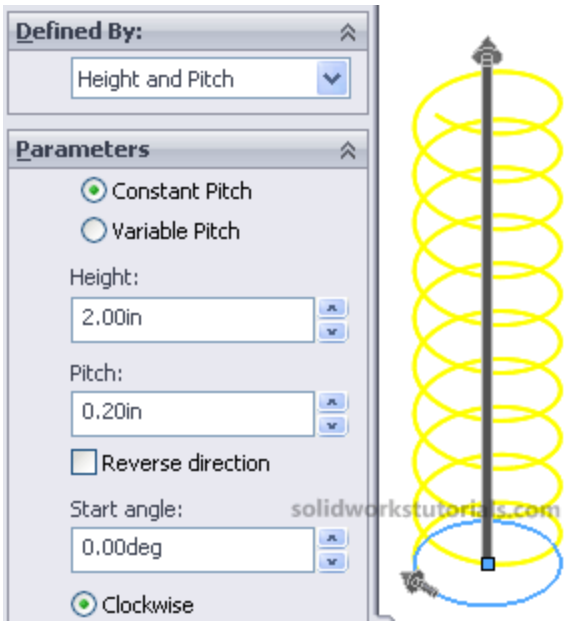


5. Click on **Features>Curves>Helix and Spiral**

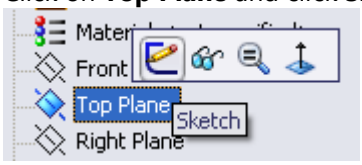


and click on sketched circle as base diameter.

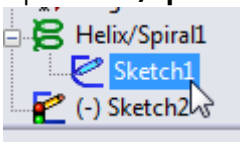
On its option set **Define By: Height and Pitch**, **Constant Pitch**, **Height: 2.0”**, **Pitch: 0.2”**, **Start Angle: 0**, **Clockwise** and  .



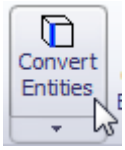
6. Click on **Top Plane** and click **Sketch**,

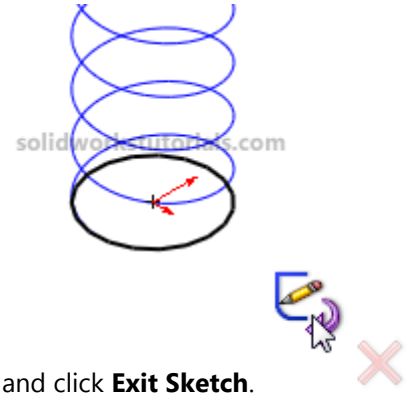


Open **Helix/Spiral tree [+]** and click **Sketch1**

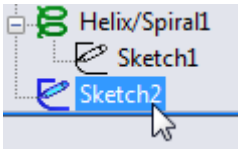


Click **Sketch>Convert Entities**

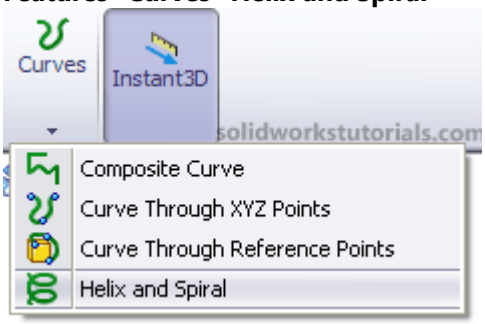




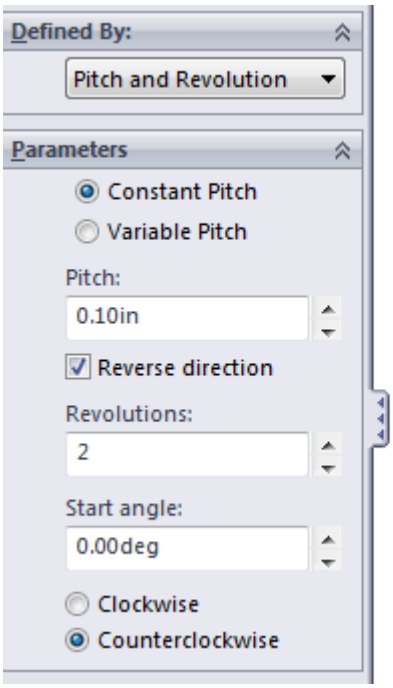
and click **Exit Sketch**.

7. Click on Sketch2, 

and click on **Features>Curves>Helix and Spiral**

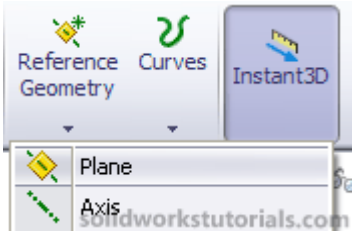


on its option set **Define By: Pitch and Revolution**, **Pitch: 0.1", Reverse direction, Revolution: 2**, **Start Angle: 0**, **Counterclockwise** and  .

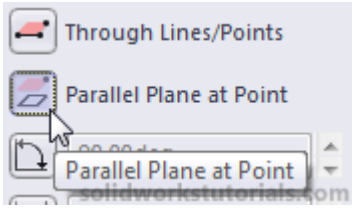


8. Click the endpoint of top curve 

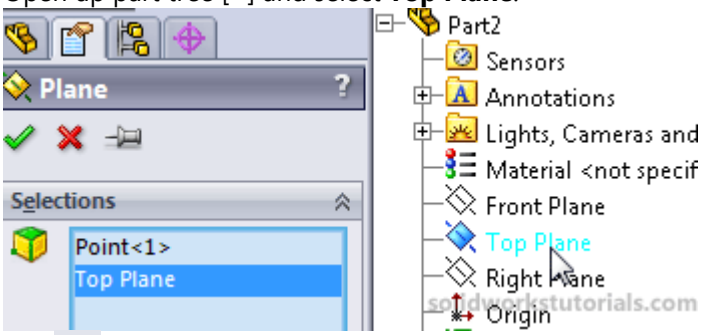
and click **Features>Reference Geometry>Plane**.



On **Selection** select **Parallel Plane at Point**.

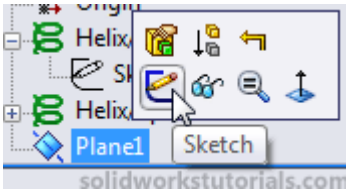


Open up part tree [+] and select **Top Plane**.

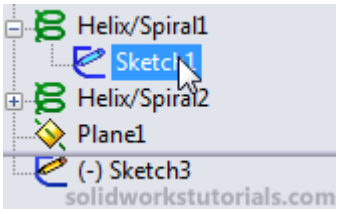


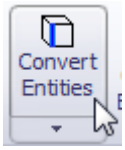
and .

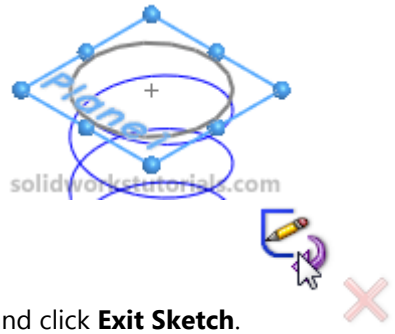
9. Click on **Plane1** and click **Sketch**,



now click **Sketch1**

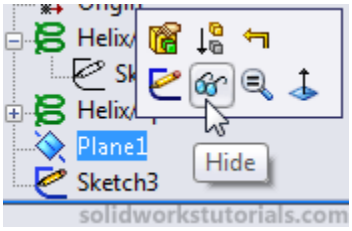


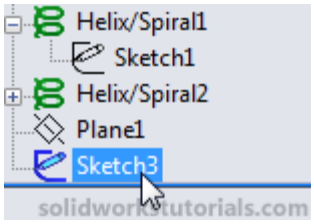
Click **Sketch>Convert Entities** 



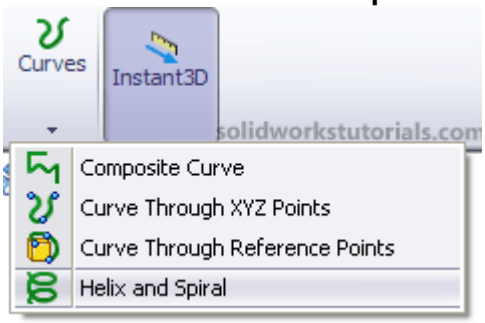
and click **Exit Sketch**.

10. Click on **Plane1** and click **Hide**.

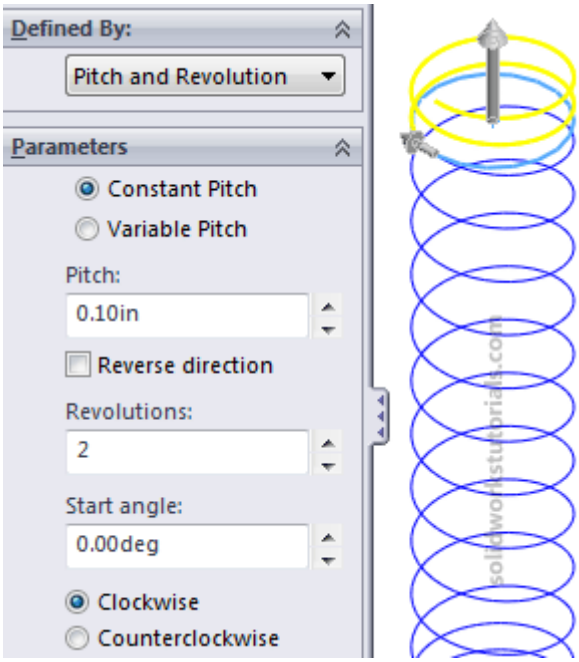




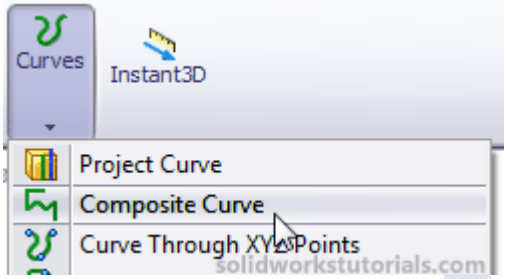
11. Click on **Sketch3**, and click on **Features>Curves>Helix and Spiral**



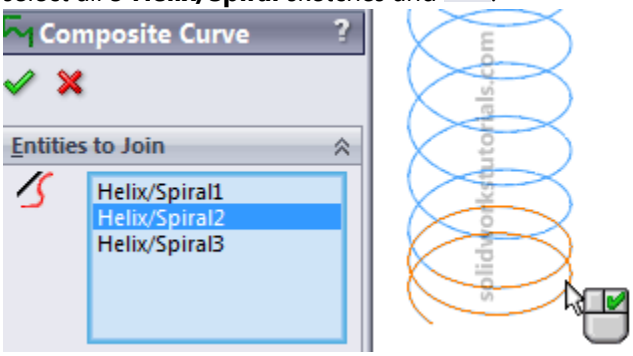
on its option set **Define By: Pitch and Revolution**, **Pitch: 0.1", uncheck Reverse direction, Revolution: 2**, **Start Angle: 0**, **Clockwise** and  .



12. Click **Features>Curves>Composite Curve,**

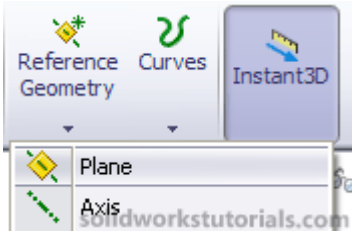


select all 3 **Helix/Spiral** sketches and  .

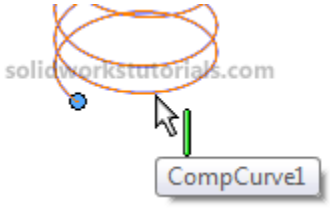


13. Click on spring bottom endpoint

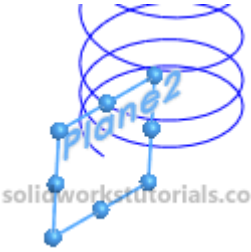
and click **Features>Reference Geometry>Plane**.



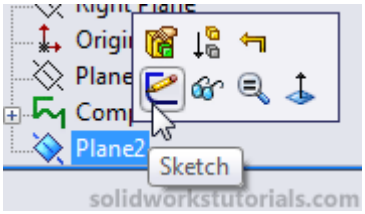
14. The following steps are to show you how to create a plane Normal To spring endpoint. Click on **Composite Curve** as a reference curve.



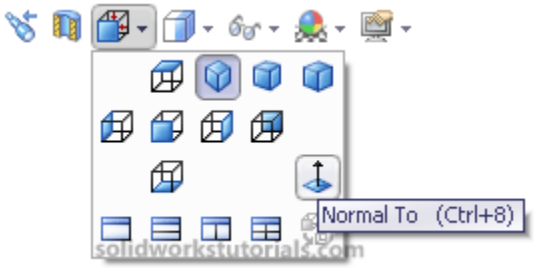
and  . **Plane2** created.



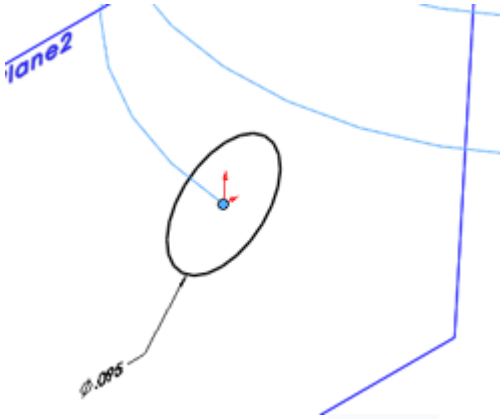
15. Click on **Plane2** and click **Sketch**.



Click **Normal To**.



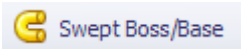
Click **Circle**  and sketch a circle center at **endpoint of Composite Curve**,



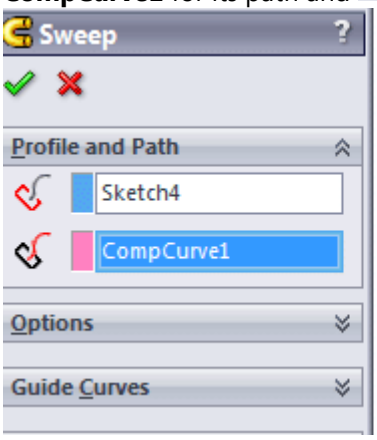
Click on **Smart Dimension** 

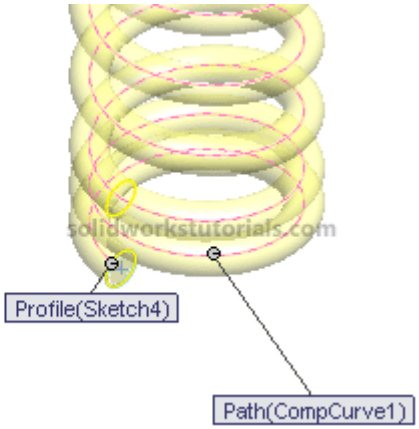
and click on circle a

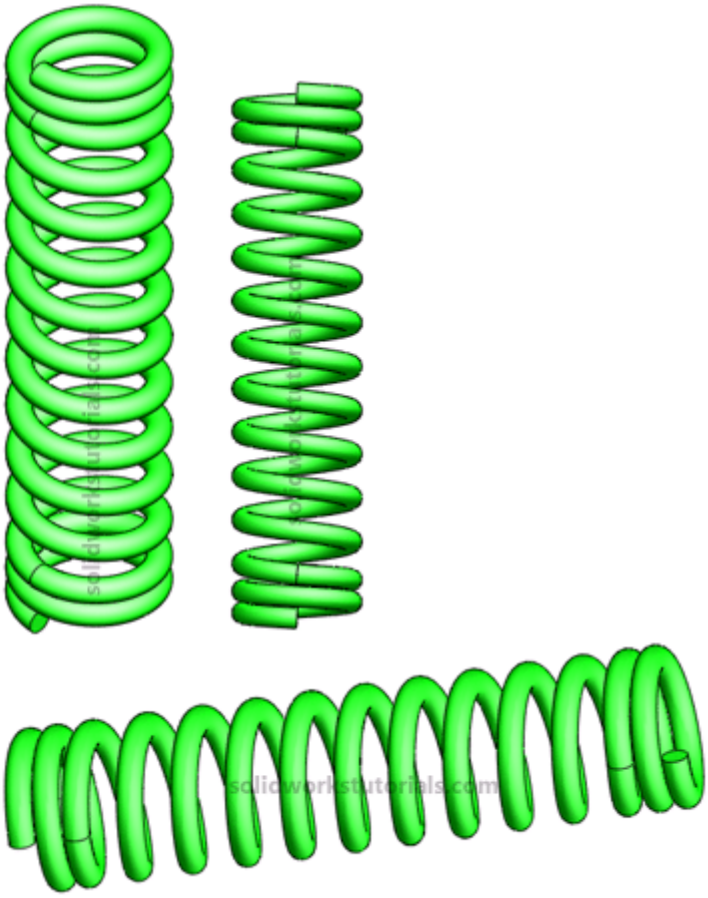
dimension it to **0.095”**. Click **Exit Sketch**.

16. Click **Features>Swept Boss/Base**, 

for Profile and Path, click **circle Sketch4** for its profile and click **CompCurve1** for its path and  .







17. Save the part as **Compression Spring** and you're done! and . Simple isn't it?

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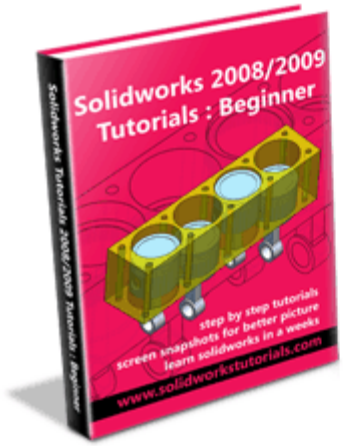

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