Solid Edge Fidget Spinner Steps - 04

* From Sheet 1, double click on the drawing view of the Fidget Spinner Assembly to re-open it.
* Select the Spinner part and edit in place
  + CTRL+Q to hide the background parts
* Using the [Project to sketch](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:incld1c) command, Lock to the top face of the spinner, and choose the option to offset.
  + Set the offset distance to 2.00 mm
  + Select the outer edge of the round of each hole and offset to the outside.
  + Using the Tangent Wireframe option select the edge of the outside round of the entire part and offset to the inside.
* Select the region created by the offsets and drag down 1.00 mm to create a cut.
* Select the Cut feature from the PathFinder and [Mirror](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:feat10h) the feature about the Top Reference plane.
* Run the Project to sketch command again and lock to the face of the recessed area.
  + Set the option to offset and the distance to 3.00 mm
  + Offset the edges of the center hole and **one** of the 3 outer holes to the outside of the embossed area.
  + Offset the outer edge of the recessed area to the inside of the part as well.
* Select the interior region created by the offset geometry and drag a cutout through the part.
  + Delete the sketch
* Hide the PMI dimensions
* Select the last cutout feature and create a 3 count [circular pattern](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:patterncirc1d) about the center hole to replicate the cutout in each arm of the spinner.
* Use the [round command](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:feat20c) to break all sharp edges in the Spinner part with a .25 mm radius.
  + Use All Fillets and All Rounds selection options.
* From the PathFinder hide the Base coordinate system and the PMI dimensions.
* Hover over a face of the part and wait to get access to [QuickPick](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:xid708083) (Right click)
  + Select the “Design body” from QuickPick
* Drag the [Steering wheel](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:steering_wheel) to the center line of the center hole.
* Set the option to Move-Copy on the QuickBar.
  + Select the Torus of the steering wheel to initiate a rotation and copy the geometry at an angle of 60°.
* Access the [File Properties](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:prop7d_v1) from the info tab of the Application button menu.
  + On the Project Tab change the Revision Number field to “B”
  + Click OK to dismiss the properties dialog.
* Save the part file
* From the Application button menu select [3D Print](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:print6h)
  + Click Preview to see the part located on a print bed with overall dimensions.
  + Note the STL export options
  + Export the part as an STL or if online you can see the option to order online
* Close and return to the assembly.
  + Note there will not be fastener in the 3 new arms that were created.
* Select a Screw and nut pair from the PathFinder.
  + Drag the steering wheel to the centerline of the screw
  + Select the option to Move-Copy from the QuickBar
* By selecting the plane in the steering wheel initiate a free form Move-Copy to drag a copy of the screw and nut set to one of the empty holes.
  + Select the Spinner part to re-establish an axial alignment relationship to the new hole and accept.
  + Repeat this process twice more to fill all three empty holes.
* You can now “Simulate” the motor again to see the assembly spin on the bearing.
* Access the File Properties from the info tab of the Application button menu.
  + On the Project Tab change the Revision Number field to “B”
  + Click OK to dismiss the properties dialog and Save the Assembly
* Return to the drawing and note the indication that the assembly/parts have changed.
  + Update the views
  + Note the [drawing view tracker](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:dvtrac1c)
    - Select Clear All and dismiss the tracker.
* Adjust the balloons on the Assembly drawing view.
  + Drag along the alignment shape
  + Use the ALT key to select the arrow point and move to different parts of the geometry.
* Note the updates to the Parts list
  + Revision Number and quantities
* On sheet 2 notice the drawing views for the spinner part have updated.
  + Edit the cutting plane if necessary to go through the entire part.
  + Add another Center line for the new hole.
* Add the [Bolt Circle](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:bolthc1h) center marks.
* Create a [detail view](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:detailview1a) from the section view.
* Add a few [SMART dimensions](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:dimsd1c) as shown.
* Save the drawing.

THIS CONCLUDES THE EXERCISE

**After Tutorial**

Improve 3D Spatial Thinking and Creativity with more examples on the [GearupU website](http://www.gearupu.com/).  Developed by a Utah State design and engineering teacher focusing on STEM to STEAM, GearupU exposes students to a world of amazing patterns, shapes and artistic designs and gets them excited about STEM.  Students with no background in 2D or 3D design should start with Class 1.