Solid Edge Fidget Spinner Steps - 01

**Before Tutorial**

Select the following link to install the free Siemens [Solid Edge 3D CAD software](http://www.siemens.com/plm/solid-edge-highschool) for your classroom ([www.siemens.com/plm/solid-edge-highschool](http://www.siemens.com/plm/solid-edge-highschool)).   Students can download and install their own free copy of [Siemens Solid Edge](http://www.siemens.com/plm/solid-edge-student). ([www.siemens.com/plm/solid-edge-student](http://www.siemens.com/plm/solid-edge-student)).

* Start by [creating](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:index_user_interface:xid457998:xid458001:crdoc1h) a NEW part file using a Metric Part template.
	+ Before we start, navigate to the Sketching Tab and locate
	the IntelliSketch options.
	+ Open the dialog and set auto-dimensioning as shown.
	+ Click OK to dismiss the dialog.
* Draw a [Ø 40 mm circle](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:index_working_with_2d_geometry:xid279988:xid280034:draw5h) on the Top plane (x,y plane) with its center at the origin point of the base coordinate system.
* Draw a second [circle Ø 30 mm](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:index_working_with_2d_geometry:xid279988:xid280034:draw5h) above the first and be sure their centers are aligned vertically.
* Draw a [Tangent Arc](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:index_working_with_2d_geometry:xid279988:xid280032:draw4h) starting at about the 5 o’clock position on the upper circle, Set the radius to **20 mm**, and conclude tangent and connected to the bottom circle.
* [Mirror the arc](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:index_working_with_2d_geometry:xid280056:xid280060:mirror1h) to the other side about the Y vector.
* Use the 3 regions to symmetrically [extrude](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help/#uid:procut1c) 7.50 mm.
Hint: Tap the shift key to toggle symmetry.
* Draw a [Ø 25 mm circle](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:index_working_with_2d_geometry:xid279988:xid280034:draw5h) on the top face of the model that is centered on the larger lower cylinder.
	+ Extrdue the region to subtract a hole.
* Use the [Hole](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:index_feature_modeling:xid377576:xid723774:xid377508) command to create a General Screw Clearance for an M8 screw on center with the smaller top cylinder.

Add a [Smart dimension](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:dimsd1c) between the holes.
	+ With your mouse hovering over the value dimension, scroll the middle mouse wheel and watch the geometry dynamically adjust.
	+ Make the value 40.00 mm
* Fence select the upper cylinder, clearance hole, and tangent arc
faces and select the [Circular Pattern](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:index_feature_modeling:xid280075:xid280127:xid599064:patterncirc1c) option.
	+ Locate the pattern origin at the center of the
	larger bottom cylinder and set the count to 3.
* Select the hole in the original upper cylinder and [synchronously drag](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:index_modify_a_model:xid280141:featedit2a)
toward the center of the part.
	+ Ultimately adjust the 40 mm dimension to 34 mm.
* Add [1.00 mm rounds](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:index_feature_modeling:xid280078:xid280119:feat20c) (Face select option) to the top and bottom faces.
* [Assign material](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:material1h) by double clicking on the Material entry in the PathFinder and setting it to Non-metal, Plastics, and pick ABS Plastic high impact.
* There is no current Lime green face style, so select Styles from the View tab
	+ Pick [Face Styles](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:index_styles:xid280932:stylfc1h) from the Style type
	+ Select Green from the Styles
	+ Click the New button to create a new “Lime Green” style based on the default Green.
		- On the Faces tab
			* Click on the Diffuse color drag the H: value to .26 and the I: value to about .83.
			* Click on the Ambient color and set H: to .26 and the I: value to .57
			* Click on the Specular color and simply set H: to .26
		- Click on the Edges tab and select the option to “Copy from Faces Diffuse Color”
			* Drag the I: slider to about .35
* From the View tab, select [Part Painter](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:partpainter1c)
	+ Set the Style to the new Lime Green
	+ Set the selection option to Body
	+ Select the part to make it Lime Green.
* From the Application button, select Info and then [File Properties](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:prop1c_v1).
	+ On the Summary tab fill in the Title, Subject, Manager and Company.
	+ On the Project tab, fill in the Document Number, Revision Number and Project Name
* [Save as](http://docs.plm.automation.siemens.com/tdoc/se/latest/se_help#uid:index_user_interface:xid457998:xid458002:save1h) “Spinner.par” to the **Fidget Spinner** folder.