

DESIGN A CUSTOM CHARM WITH SNAP RING FOR USE ON BEER BOTTLES AND/OR WINE STEMWARE

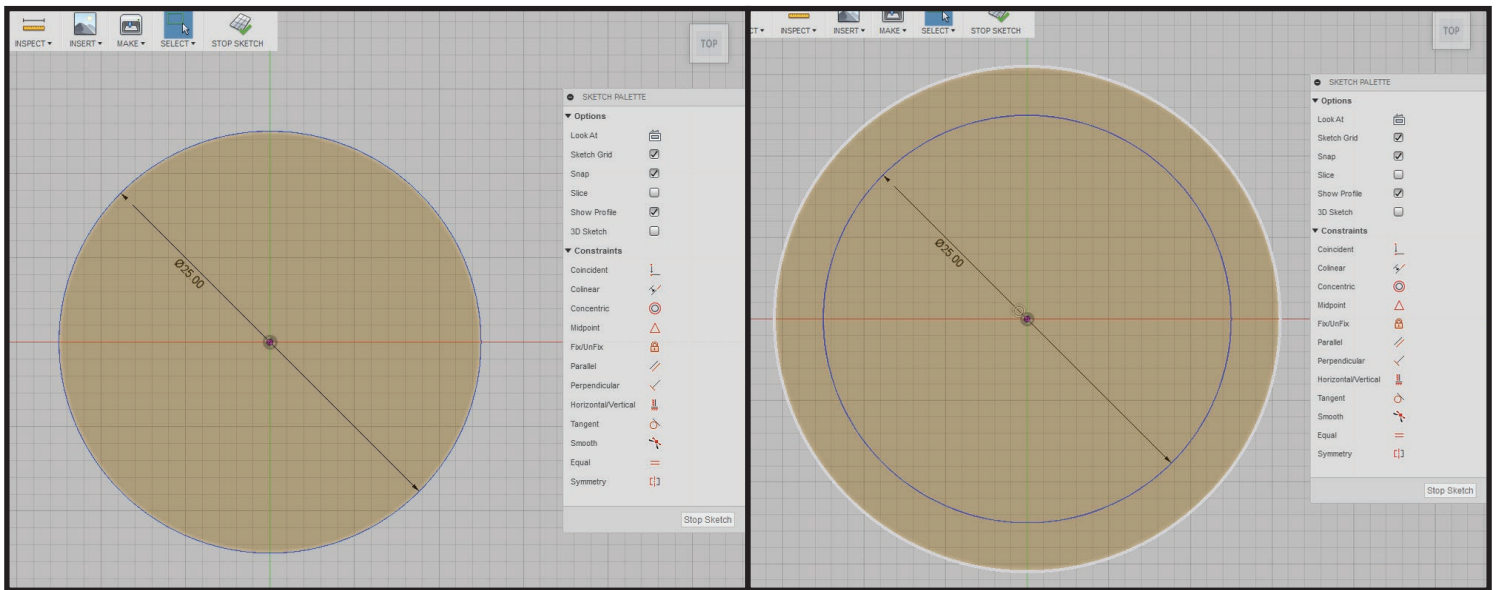
(Autodesk Fusion 360 Tutorial - Beginner Level - Written by Maz a.k.a. Rose M.)



CREATE THE SNAP RING

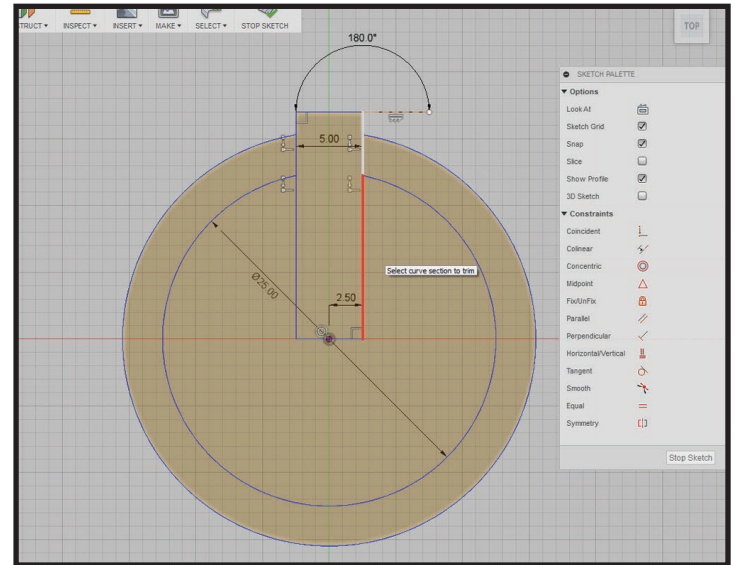
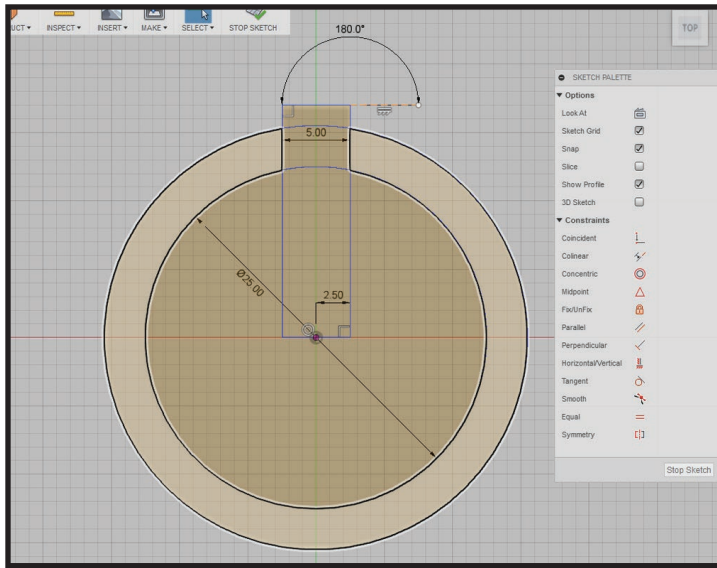
Create the sketch to make the ring that will snap onto the bottle neck/stemware.

1. Click "Sketch" in the toolbar at the top, select the X Y plane. In the Sketch menu click on the drop down and select the Circle > "Center Diameter Circle". Click anywhere on the grid to start the circle center point. Pull out the diameter of the circle sketch to **25mm**. Click "Okay" to accept.

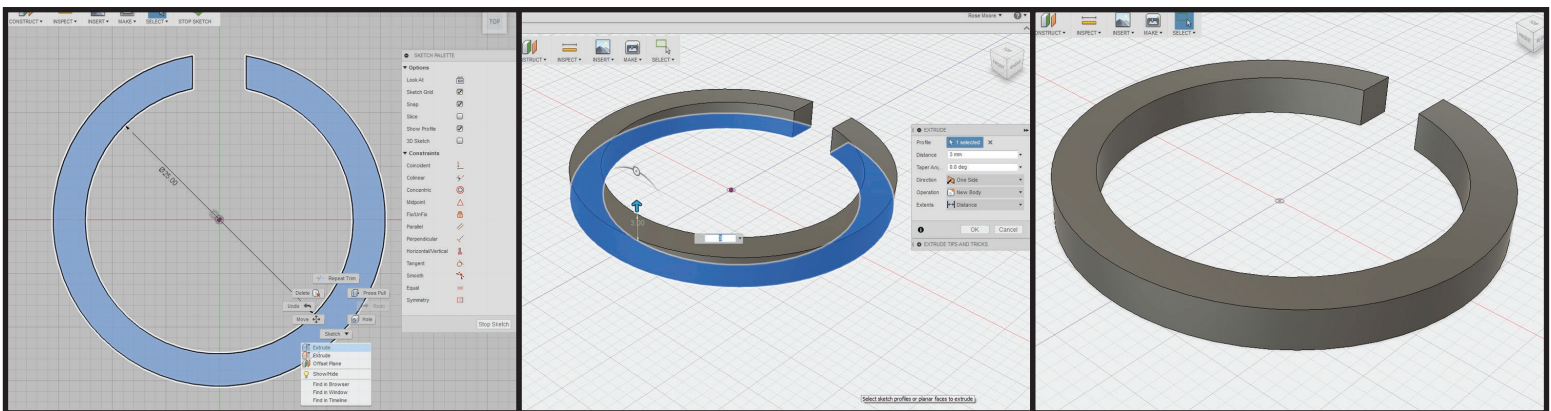


2. In the Sketch drop down menu, click "Offset" and click the edge of the circle sketch. Pull out the sketch "**3mm**" and hit "Enter/Return".

3. Make the cut in the ring to be able to snap it onto beer bottle or wine glass. Click "Sketch", make the first point centered with the circle sketch, set the next point **2.5mm** to the left, the next point far enough in to go through both rings, the next point **5mm** to the right, the next point back up to match the first point, and then close the sketch.

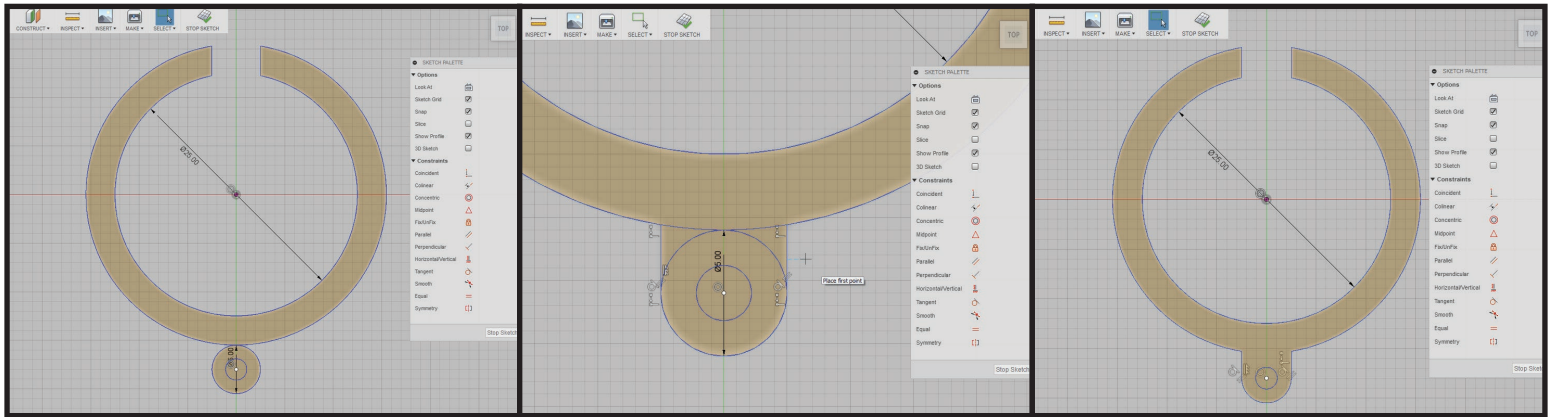


4. In the Sketch drop down menu click "Trim". Select the section of the circle sketch that intersects the square. Do the same for the other circle and trimming the unnecessary parts of the square. When finished cleaning your sketch hit "Enter/Return" to exit trim tool. Right click/option + click inside the orange area of your sketch. In the option menu select the blue version of "Extrude" and set the value to "**3mm**". Click "Okay" to accept.

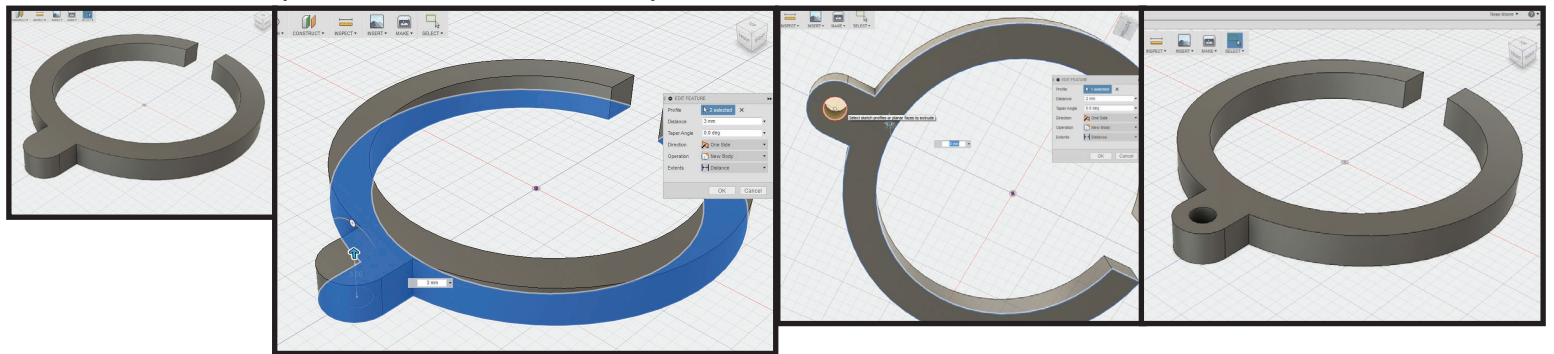


5. Add a place for the charm to attach. Utilizing the timeline feature, find and double click the sketch action in your timeline. Once in the previous sketch, go to Sketch > Circle > "2-Point Circle", make the first point of the 2-Point circle opposite side of the opening and on the outside circle sketch edge. Pull the circle diameter out to "**5mm**". Offset the circle sketch "**1.4mm**" toward the inside. Click "Sketch", click and drag from the small circle to sketch a line straight(vertical) toward the larger circle sketch edge

. This created a "Tangent Point" on the little circle. Do the same for the opposite side on the outside edge of small circle. Use the Sketch > Trim to cleanup the sketch. Near the top of the screen click "Stop Sketch" to accept changes.

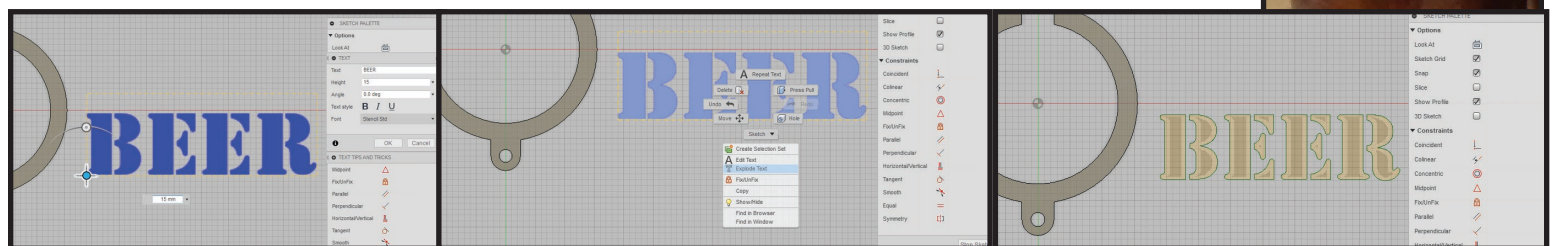


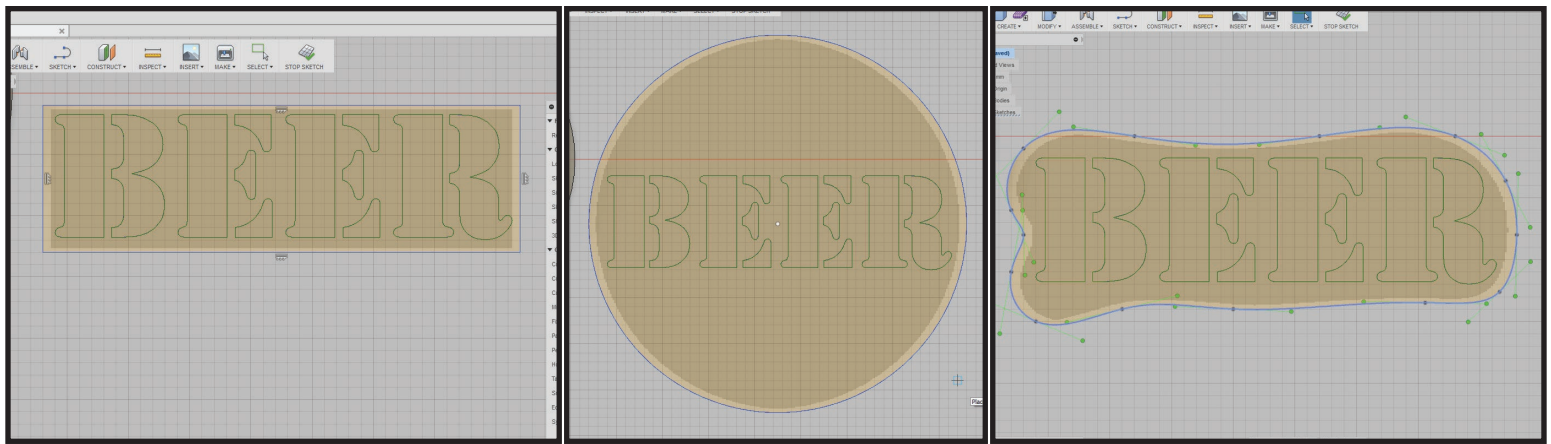
6. The hole sketched isn't showing on the geometry, we'll need to edit the "Extrude" action in the timeline. Double click the "Extrude" action in the timeline to activate. Hold "shift" and click inside the hole sketch. Click "Okay" to accept the changes. The snap ring for the bottle/glass is now finished and printable if we exported the STL file.



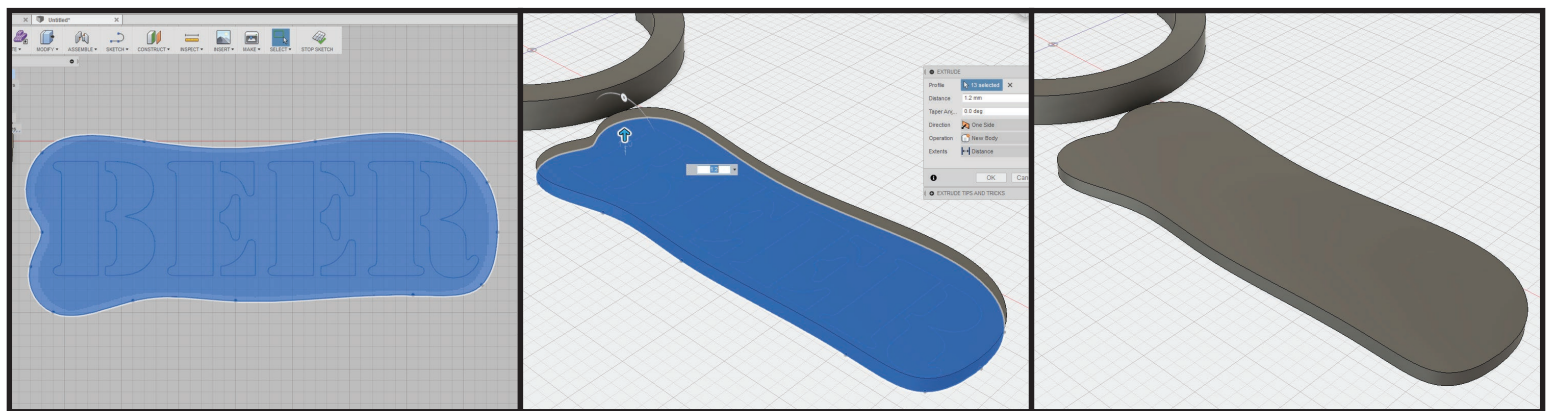
CREATE A CHARM WITH A WORD

1. Click "Sketch" select the X Y plane. In the Sketch drop down click "Text". To the right of your snap ring click to set the point for the text. In the dialog box, type your word in the "Text" field. Change the font to any of your choice. Keep in mind some fonts will not print well without editing. Blocky Sans-Serif fonts work best. Click "Okay" to accept your text. Open the option menu on top of the text sketch(right click / option + click), click "Explode Text".

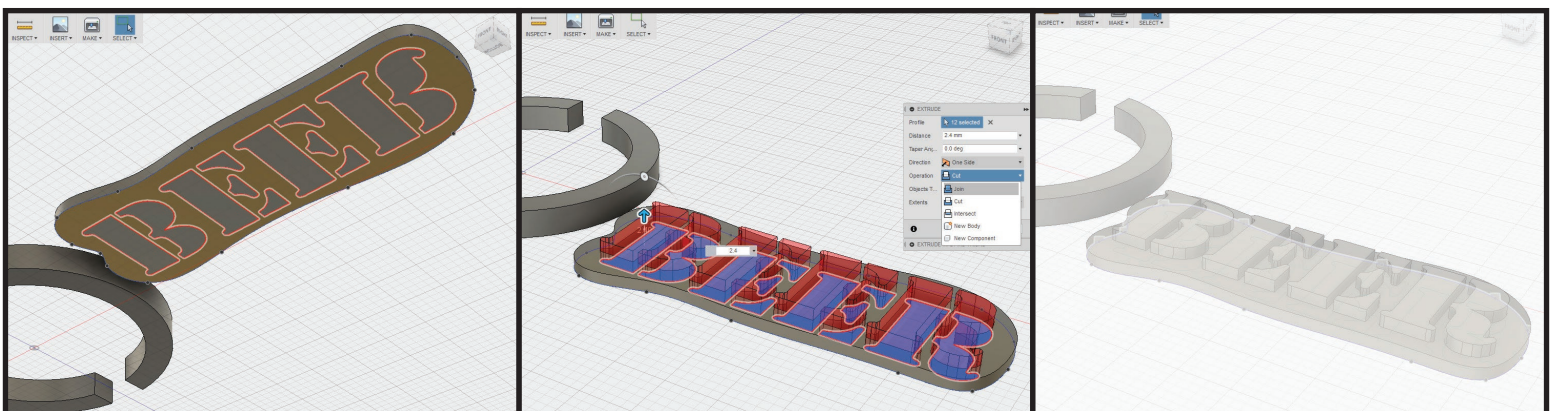




2. Make something for the text to lay on. Either create circle, rectangle, ellipse, or draw your own shape. The letters need to be connected as one piece.

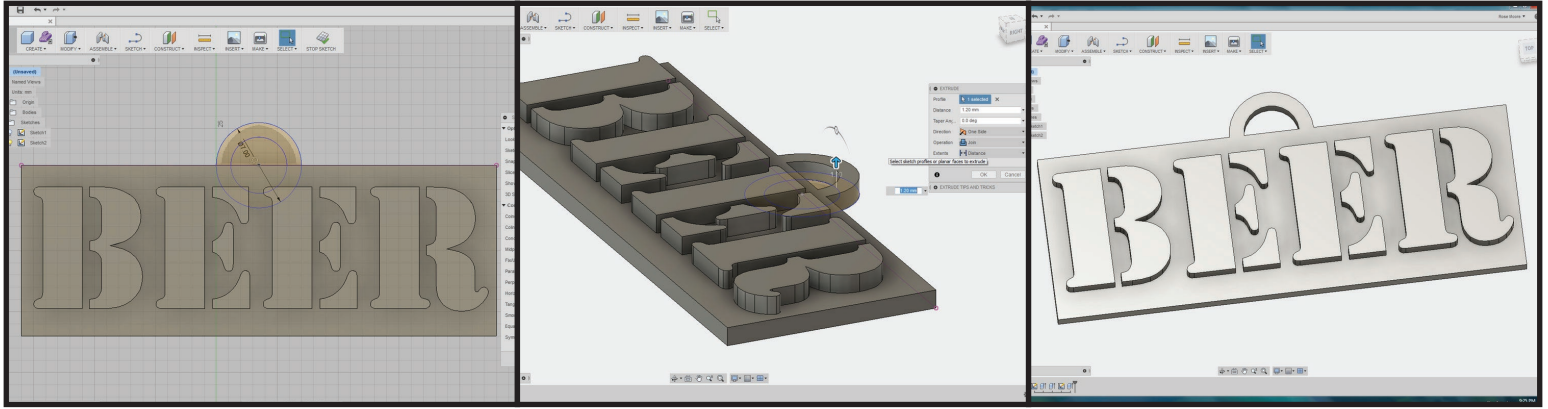


3. While holding shift, select all of the sketch you created by clicking inside the orange highlighted area. Once you have everything selected, right click / option +click to open the pop-up menu and select "Extrude". Extrude the sketch "**1.2mm**". Click "Okay" to accept.



4. Turn the last sketch we just created back on. You can do this by expanding to the "Sketches" tree and clicking the light bulb making it yellow. Pan to the underside of the extruded geometry we just made. Select just the parts of the sketch you want to stick out above the previously extruded geometry(the letters). Once you have everything selected, right click/option + click to open

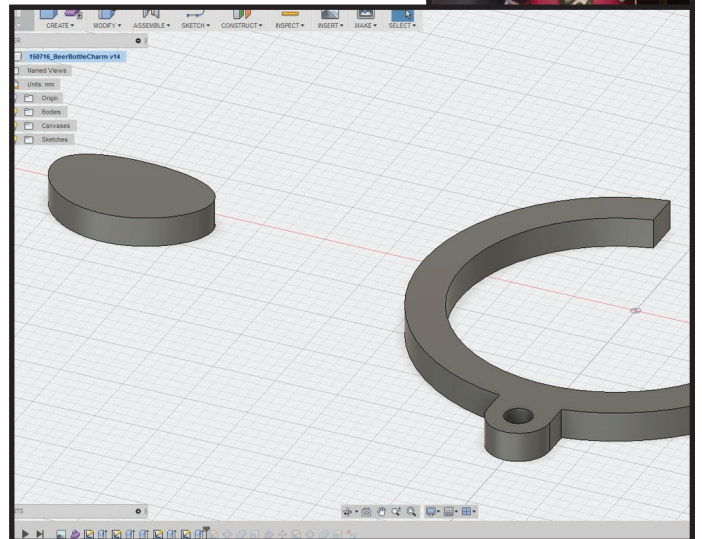
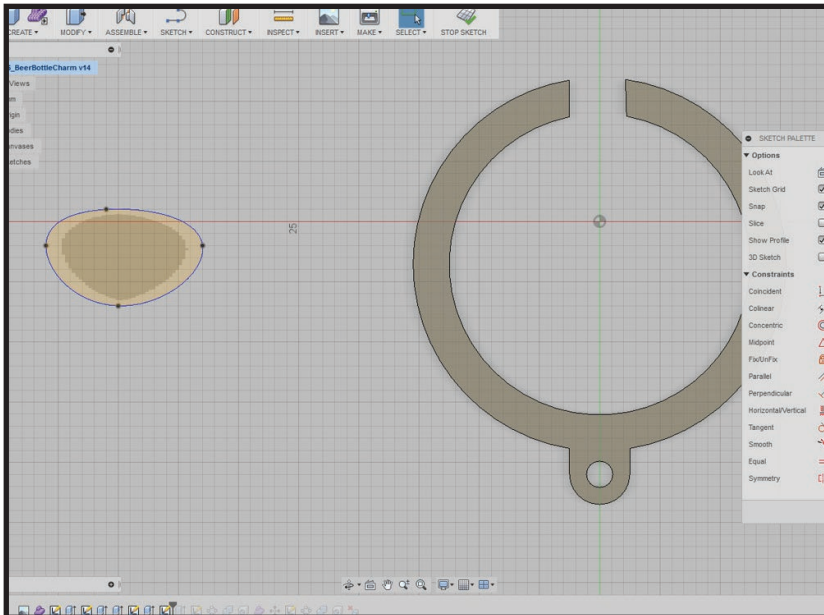
the pop-up menu and select "Extrude". Extrude the sketch "**2.4mm**". Change the "Operation" in the dialog box to "Join". Click "Okay" to accept.



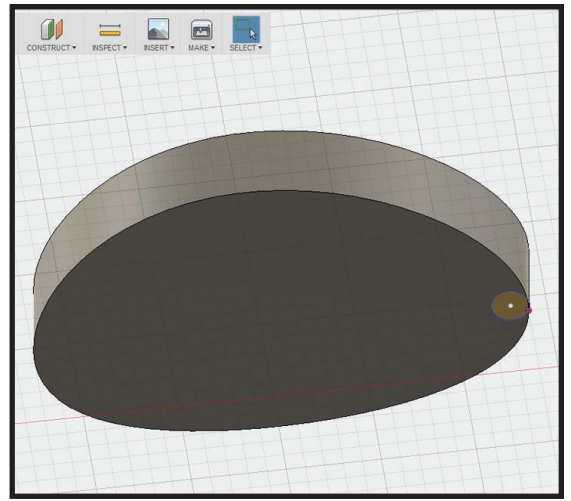
5. Sketch a loop for the charm to connect to the snap ring. Create a circle sketch on the top center of the charm. Diameter for the circle is "**7mm**". Offset the circle "**1.2mm**" inside. Select the donut portion of the sketch and click to extrude "**1.2mm**" (or you can click the closest face to snap the extrude height). Change the "Operation" to "Join". Click "Okay" to accept. Now you have a word charm ready to export for printing.

CREATE A SIMPLE FLOWER CHARM

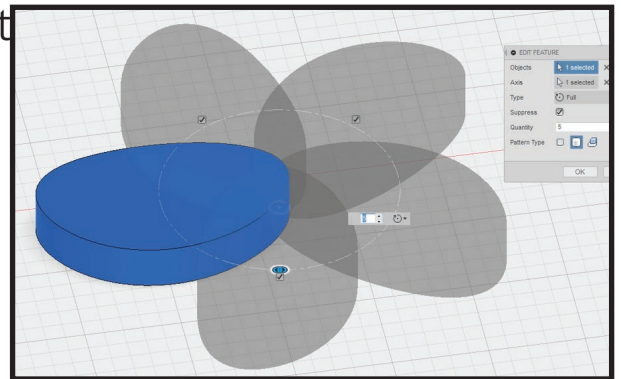
1. Create a new sketch, to start click "Sketch" in the toolbar and select the X Y plane. In the sketch drop down menu select "Spline". Start drawing a petal shape near the snap ring. Use the snap ring as reference for size. Keep the petal 1/5th size of the snap ring. Hit "Enter/Return" to exit the spline tool. Once you close your sketch of the petal, click inside the sketch and using the blue version "Extrude" the petal "**2.4mm**".



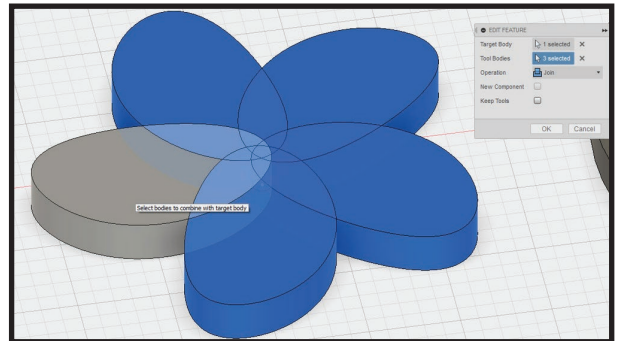
2. Create a new sketch, start as before in step 1, and select the Circle > "2-Point Circle". Click the first point of the circle on the inside tip of your petal. Pull out the diameter of the circle to "**1mm**" toward the inside of the petal. Hit "Enter/Return" to accept. Click on the "Stop Sketch" in the toolbar at the top to exit sketch mode.



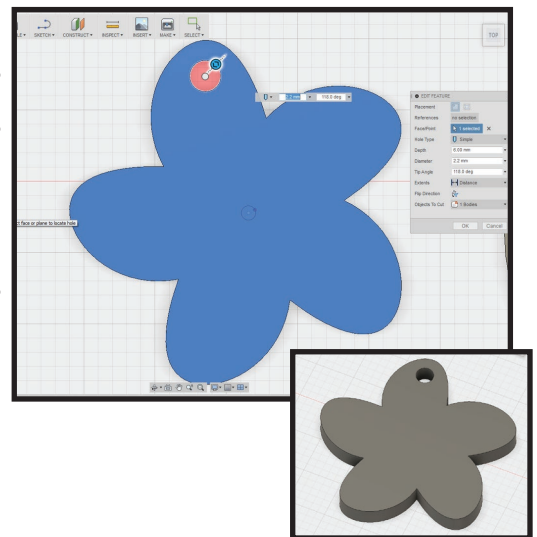
3. Create flower with pattern tool. Click the drop down on "Create" in the toolbar and select Pattern > "Circular Pattern". Change Pattern Type to "Pattern Bodies" in the dialog box on the right. Select the petal geometry. In the dialog box on the right, select the gray box "no selection" near axis, pan to the underside of the petal and select the 1mm circle sketch. Set the quantity of pattern bodies to your desire. You can change the quantity by adjusting the "<|>" slider, the quantity box near the axis, or even in the dialog box text box for "Quantity". Click "Okay" to accept. (Odd numbers of petals tend to be more appealing.)



4. On the toolbar at the top, click the drop down under Modify and select "Combine". Click each petal object, make sure operation is set to "Join", and click "Okay" to accept.

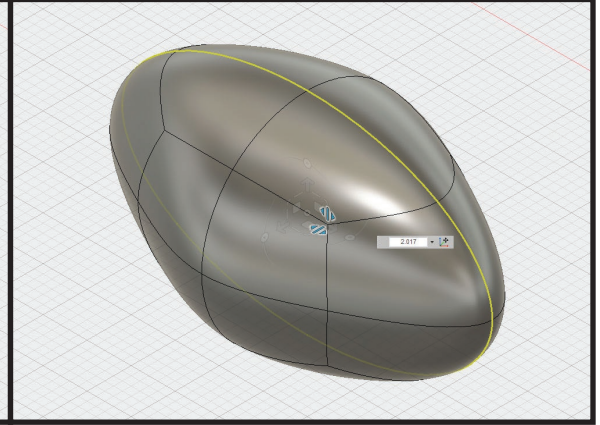
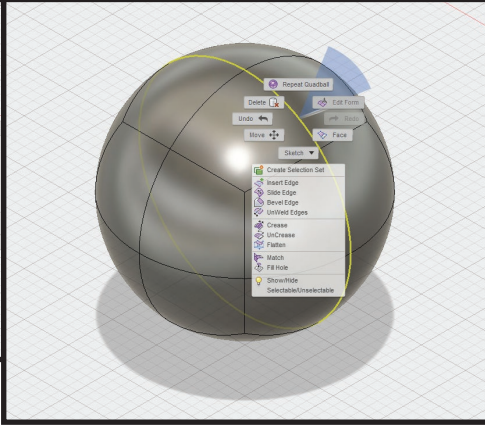
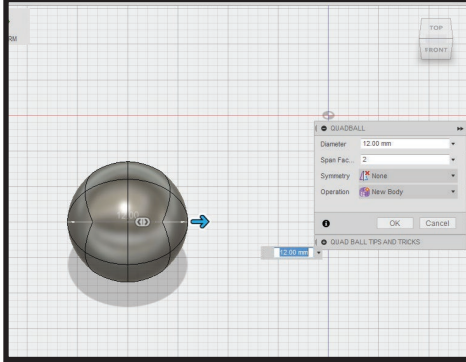


5. Make a hole for flower to attach to snap ring. Click the top face of the flower. In the pop-up wheel menu, (access by right click/option + click), select "Hole". In the dialog box on the right, change the diameter to "**2.2mm**". Using the blue circle cross-hairs, click and drag to position the hole toward the top of the flower with a margin similar to the size of the hole. In the dialog box on the right, change the extents option in the drop down to "All". Click "Okay" to accept. Now you have a simple flower charm ready to export for printing.

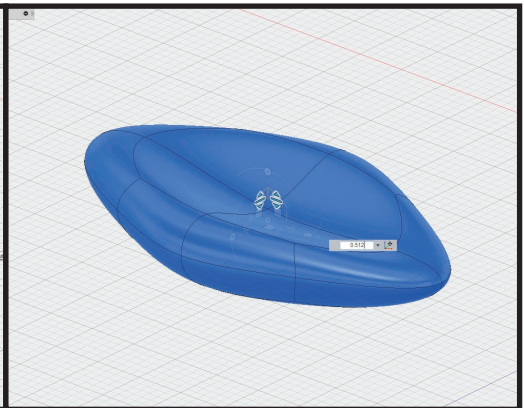
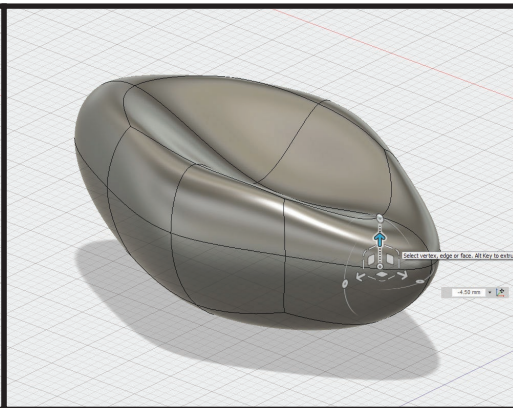
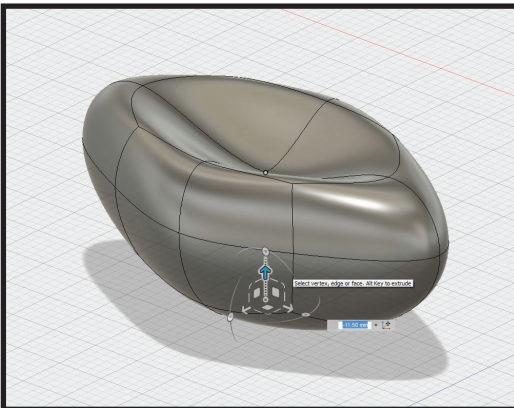


CREATE A SCULPTED FLOWER CHARM

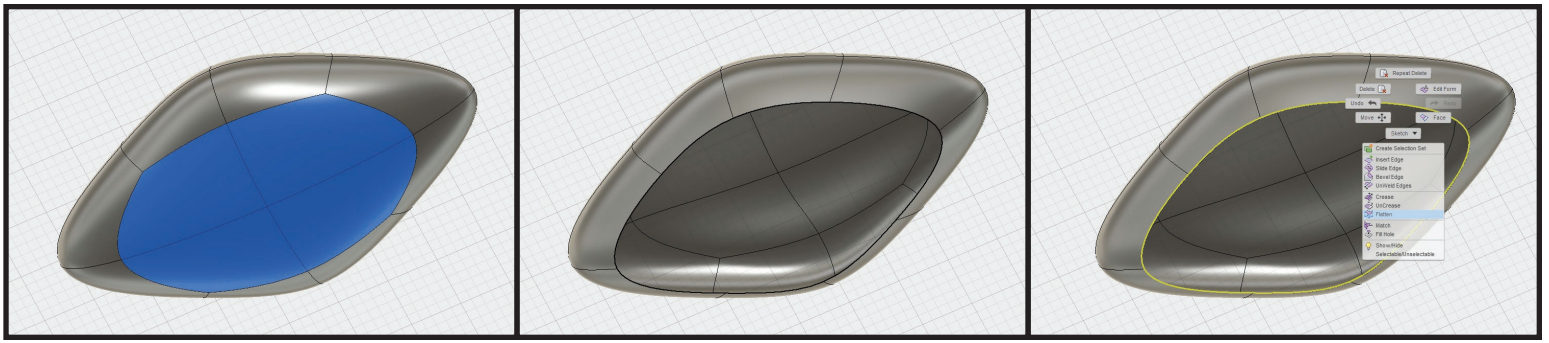
1. Click the purple icon near Create, "Create Form" to begin. In the create drop down select the "Quadball". Click the X Y plane, and place the start of the quadball. Drag the blue arrow to **"12mm"** and hit "Enter/Return" to accept.



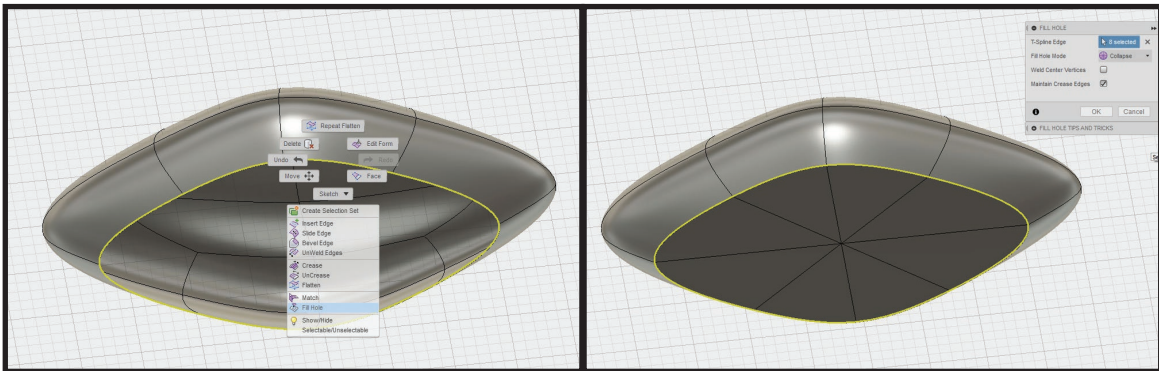
2. Click on a point, line, or face of the quadball to select. Open the pop-up wheel menu and click "Edit Form". Double click a line in the middle of the quadball(a whole ring will be selected). Click and drag on the "<|>" part of the gizmo to deform. Pull it out about **"2mm"**. Select the top point in the middle of the quadball, use the "z axis arrow" of the gizmo to drag down, creating a crater. Click the next point to the right and do the same dragging down slightly less. Double click any face to select the whole quadball. Using the "<|>" on the z axis, drag to squish the quadball about **"0.5mm"**. Click "Okay" to exit the edit form tool.



3. Make the bottom of the petal flat for printing. Select the four(4) bottom faces of the quadball and hit "Delete/Backspace". Double click an edge of the newly created hole on quadball(will select entire ring of hole). In the pop-up wheel menu, select "Flatten" in the drop down. Click "Okay" to accept.

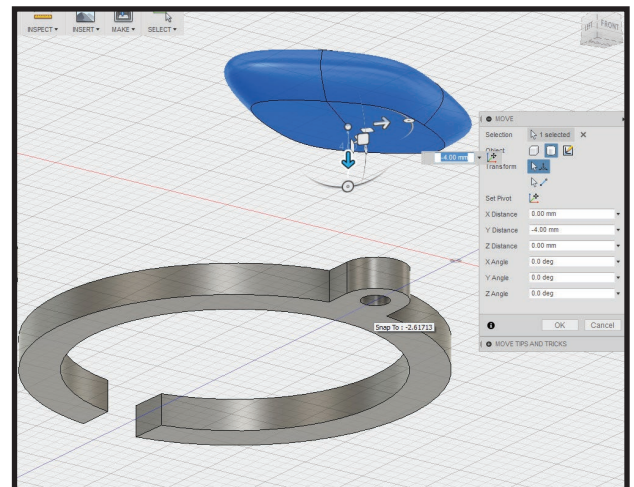


Double click an edge of the hole on quadball(will select entire ring of hole). In the pop-up wheel menu, select "Fill Hole" in the drop down. In the dialog box on the right, change the Fill Hole Mode to "Collapse". Click the check box for "Maintain Crease Edges". Click "Okay" to accept. At the top of the toolbar, click "Finish Form" to exit the sculpting environment.

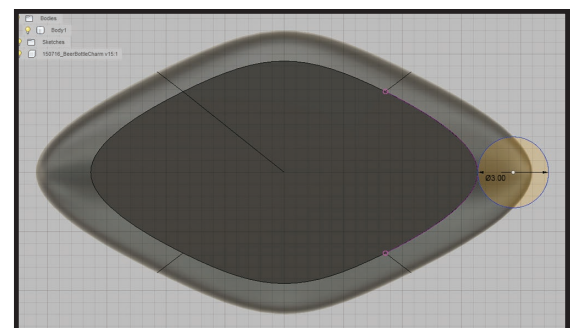


4. The petal body may be below or above the rest of the objects in our workspace, to fix this we'll use the face snapping of the move tool.

Select petal and in the pop-up wheel menu select "Move". In the dialog box on the right, click the "Set Pivot" icon near the Set Pivot text. Pan to the underside of the petal and select a point on the flat face. In the dialog box on the right, click the green check to set pivot. Click the "z axis arrow" on the move gizmo and adjust about **"5mm"**. Pan over to your snap ring or other simple flower if you made one, click the bottom face to snap. Click "Okay" to accept.

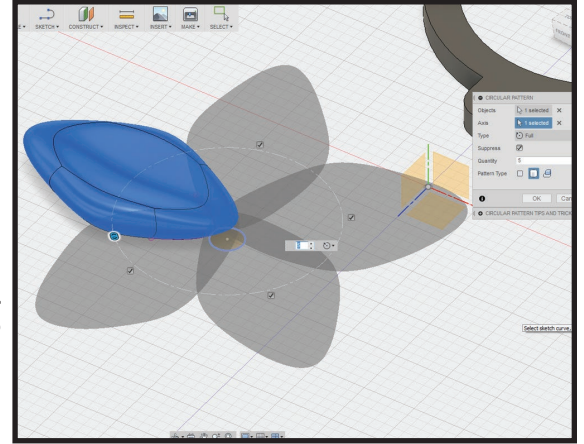


5. Under sketch drop down select the Circle > "2-Point Circle" to start a new sketch and select the X Y plane. Switch to the bottom view of the petal. Click the edge of the petal bottom at



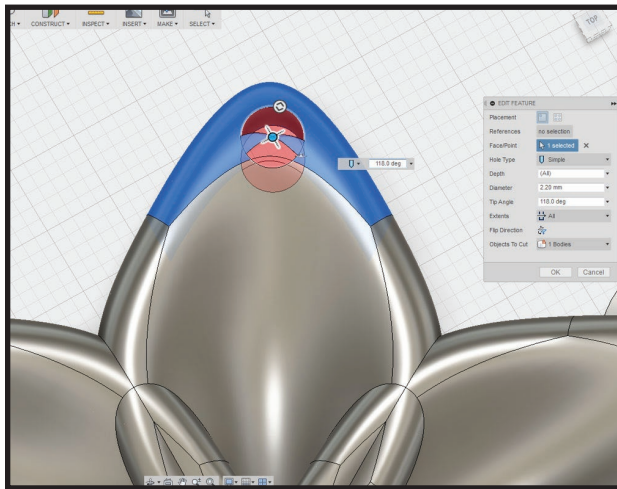
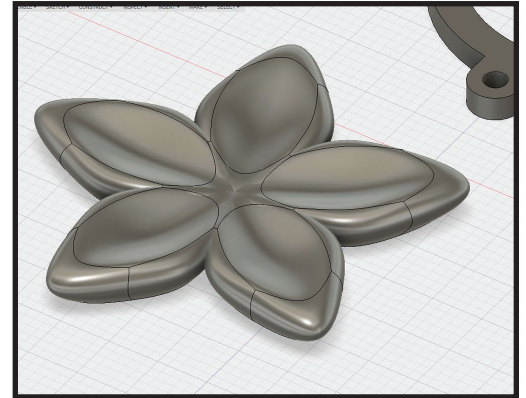
the first point, change the diameter to **"3mm"**, hit "Enter/Return" to accept value, and click the second point straight out from the petal. Click "Stop Sketch" in the top toolbar to exit sketch.

6. In the Create drop down, select Pattern > "Circular Pattern". Change Pattern Type to "Pattern Bodies" in the dialog box on the right. Click the petal geometry. In the dialog box on the right, near axis click "no selection" and select the 3mm circle.



Set the quantity of pattern bodies to your desire. You can change the quantity by adjusting the "<|>" slider, the quantity box near the axis, or even in the dialog box text box for "Quantity". Click "Okay" to accept.

7. On the toolbar at the top, click the drop down under Modify and select "Combine". Click each petal object, make sure operation is set to "Join", and click "Okay" to accept.



8. Make a hole for flower to attach to snap ring. Click to select a face on the edge of a petal of the flower. In the pop-up wheel menu, (access by right click/option + click), select "Hole". In the dialog box on the right, change the diameter to **"2.2mm"**.

Using the blue circle cross-hairs, click and drag to position the hole toward the edge of petal on the flower with a margin similar to the size of the hole. In the dialog box on the right, change the extents option in the drop down to "All". Click "Okay" to accept. (If you have strange geometry on the hole you can delete the faces by selecting them from the underside of the hole, and hit "delete/backspace" to remove.) Now you have a sculpted flower charm ready to export for printing.

