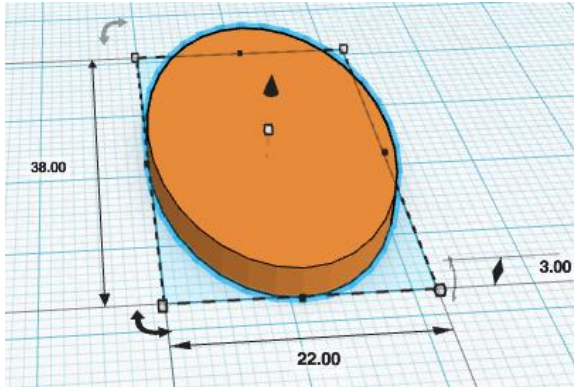


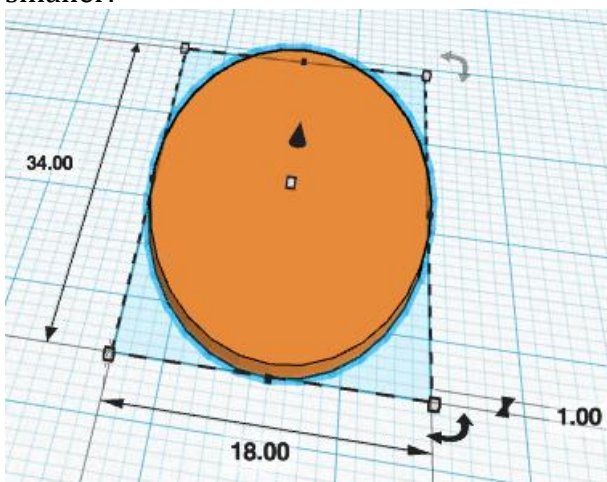
How to Create a 3D-Printable Pendant Using TinkerCAD

Goal: We will create a Pendant that could be attached to a necklace or keychain.

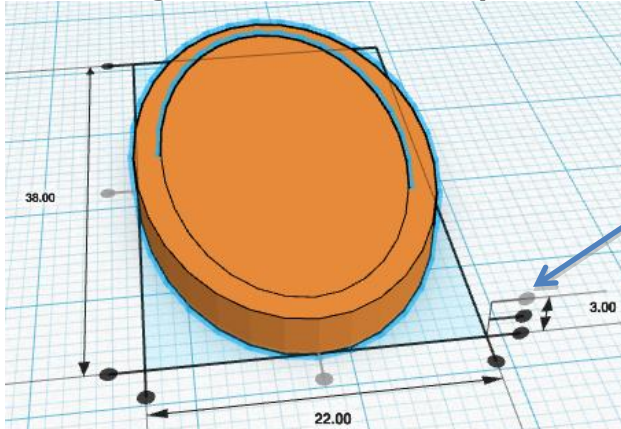
1. Start by dragging a **Cylinder** onto the workplane. **Resize** the cylinder to have the dimensions shown below.



2. **Duplicate** this cylinder (*option+drag*), and **resize** the duplicate to be slightly smaller:

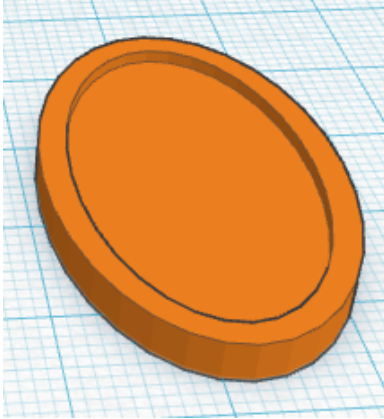


3. Use the **align tool** to *center the shapes* and align them to have the same top-level:



Notice: the alignment pins turn grey when the shapes are aligned to them.

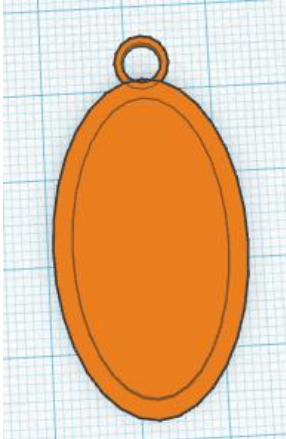
4. Turn the smaller cylinder into a hole, then group the shapes together.



5. Drag a **Thin Tube** onto the workplane, and resize it as below:



6. **Move the Tube** to the top of the pendant, then **Group** it with the other shapes.

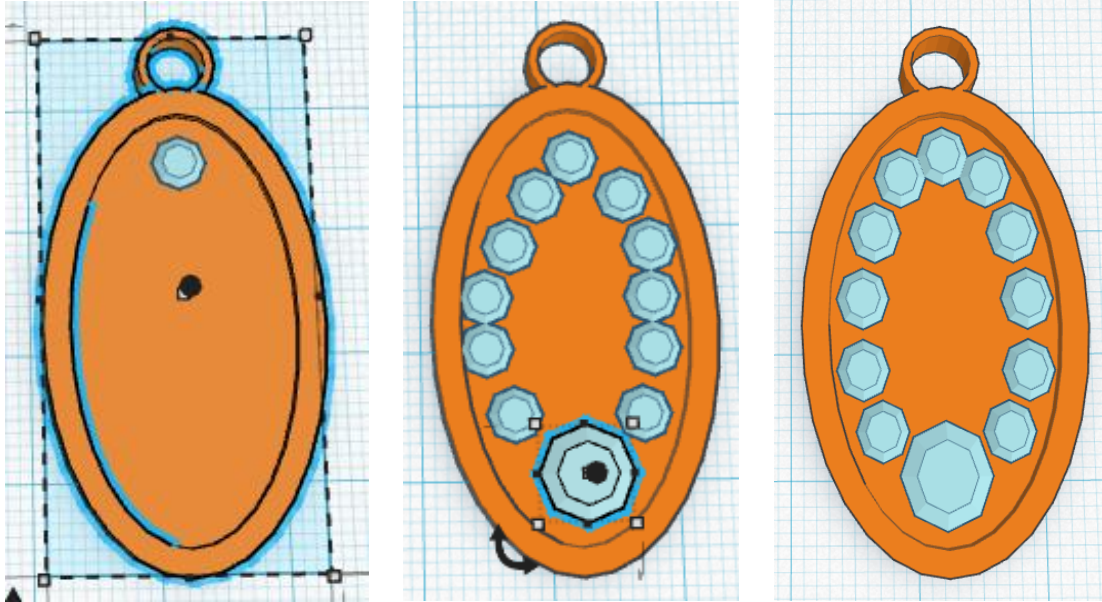


7. Now we can **decorate the pendant** however we like! Experiment with some of the shapes, try making your own **custom jewels**, add **writing**, or even **import custom .SVG files** like we did to create the leaf on the diamond ring. [Refer to: "How to create a 3D Printable Ring using TinkerCAD"]

Be warned: the printer has limited resolution. That means that if you make your design **too small and detailed**, it won't turn out how you expect. It will still look

cool, but you may lose some of the fine detail.

8. Here's some screenshots detailing how I created my pendant. In this part I used the built-in **diamond** shape, adjusting the height to fit the space I had. I changed the **snap grid** to 0.1mm (bottom right corner of workplane) and also used the **align tool** to help get each pair in line, but it is mostly a slow and patient process of making slight adjustments by eye.



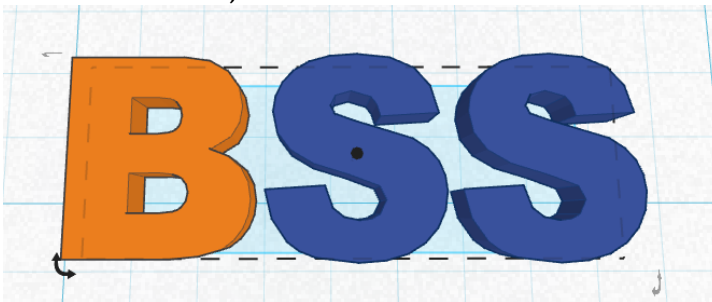
9. **Remember: it is critical that all the shapes intersect each other so that they are attached together by the printer.**



10. I **resized** and **added** a **star** in the middle of the pendant:



11. To do the lettering, I created the “BSS” **separately first** by dragging letters in from the sidebar,



Then **grouped** it and **resized** it,



Then **added** it to the pendant.



12. Finally, **group all** the shapes together.



13. Click **Design > Download for 3D Printing**, then save the design as an **.STL file**.
You're done!