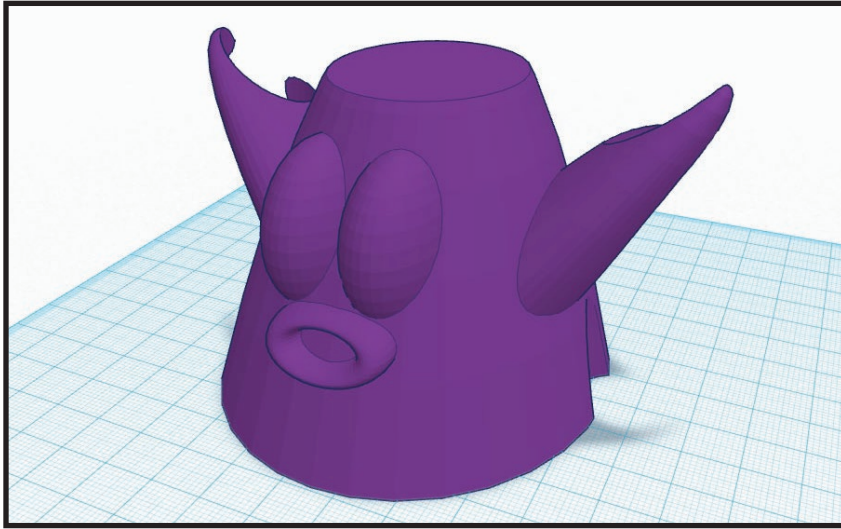


# OPEN CONTAINER IN TINKERCAD

(TinkerCAD Tutorial - Beginner Level - Written by Maz a.k.a. Rose M.)

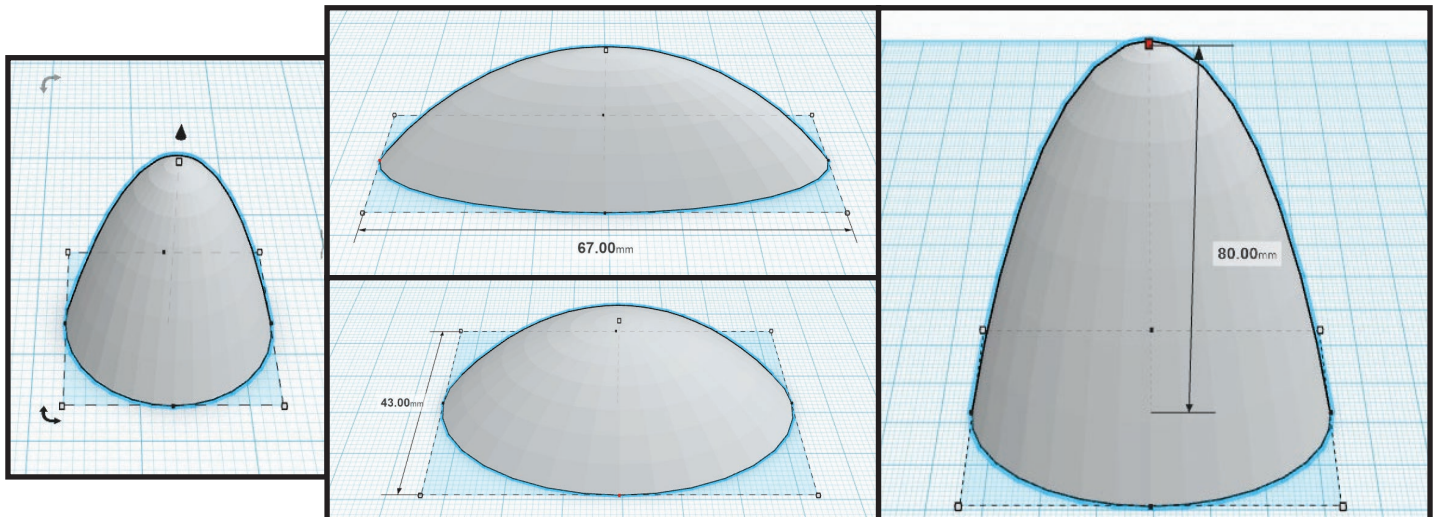
Required tools: Digital Calipers

Project needs to be finished as solid geometry. Use print profile with no infill and no top layers to make into open container.



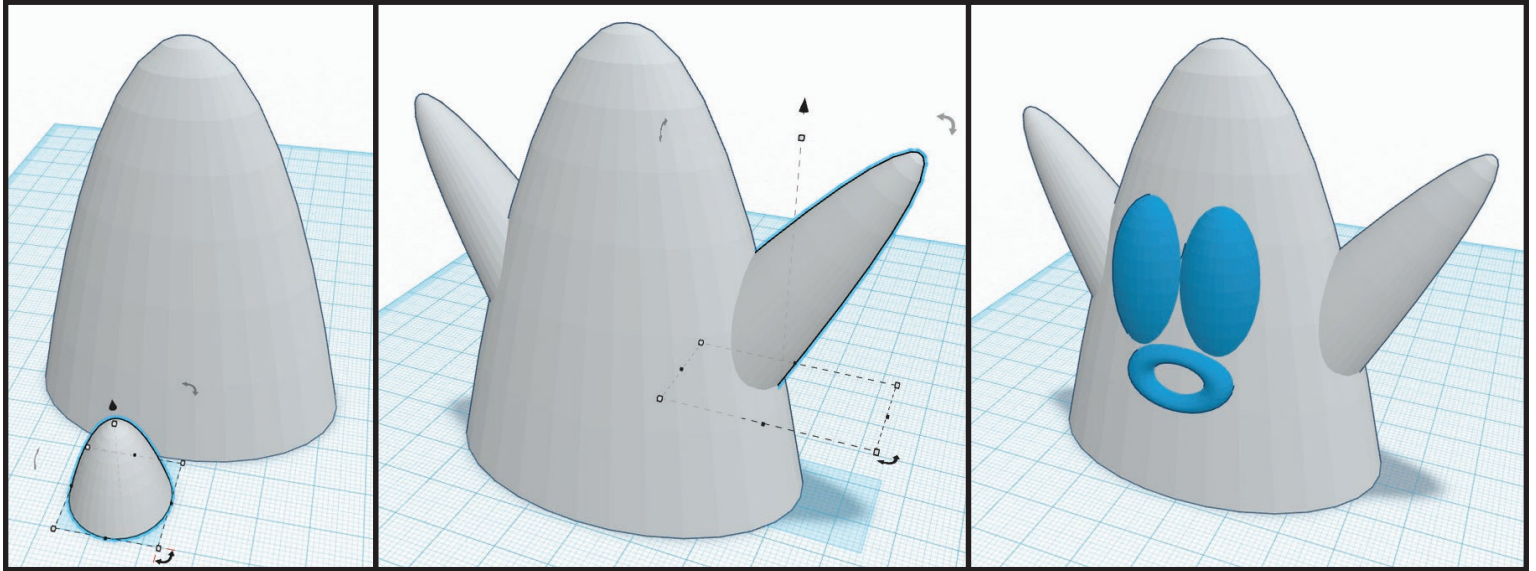
## STEP 1: CREATE BASE OF CONTAINER

- In the right side menu, in the Geometric section, click to select one of the following shapes: Box, Cylinder, Round Roof, Hexagonal Prism, Paraboloid
- Hover over the workspace and click to place the shape.
- Edit the shape using the tiny boxes at the corners.  
Keep project dimensions inside "100mm x 100mm x 100mm".



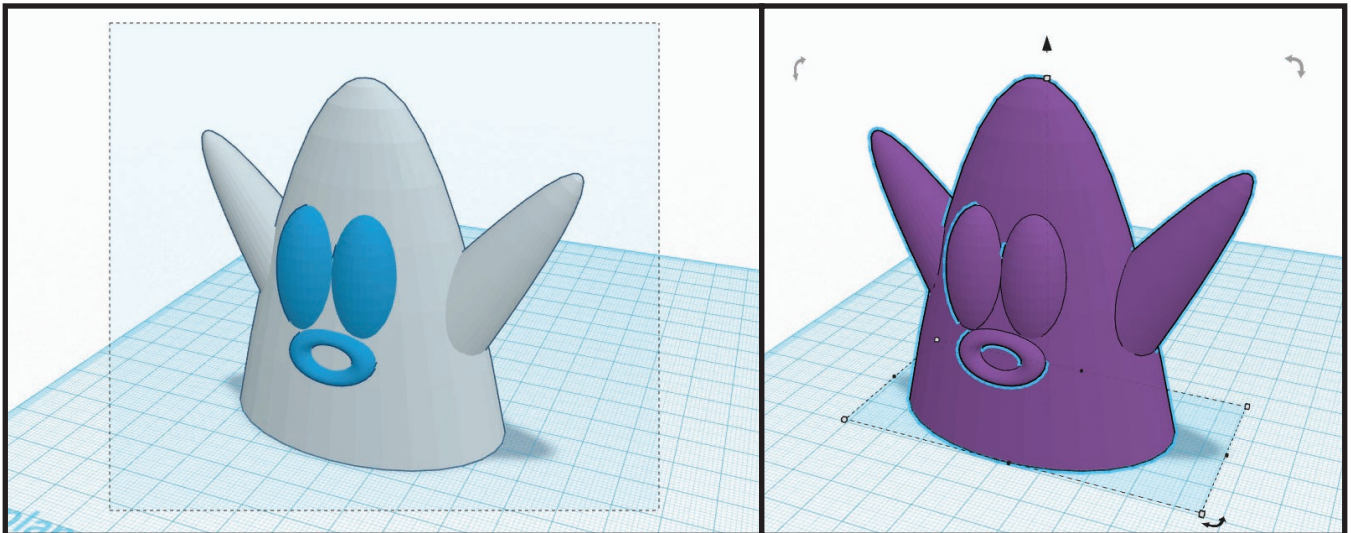
## STEP 2: ADD ADDITIONAL SHAPES TO CUSTOMIZE THE CONTAINER

- In the right side menu, in the Geometric, Letters, Numbers, or Symbols section, click to select any one of the shapes in the section.
- Hover over the workspace and click to place the shape.
- Edit the shape using the tiny boxes at the corners.
- Continue adding and editing the shapes using the tiny boxes at the corners and rotation arcs. (Make sure all the shapes are touching the base of the container.) BE CREATIVE!



## STEP 3: COMBINE THE ADDITIONAL SHAPES TO CONTAINER

- Drag a selection box over entire project to select, and in the top right click "Group" to combine all the shapes together.
- For making this container able to hold stylus/pens/pencils, now would be a good time to make the height at least "75.00mm" tall. To do this, click the combined shape to select, click + hold on the "black box" in the top middle of the combined shape, drag the black box to height of at least "75.00mm".

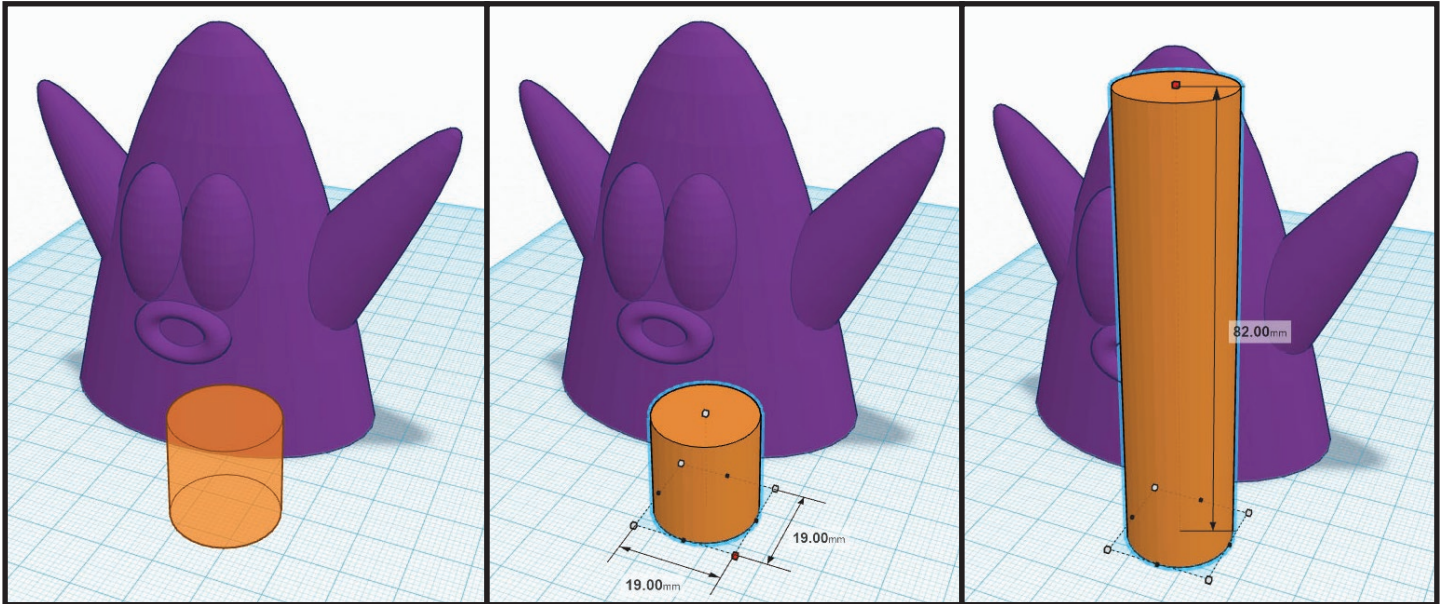




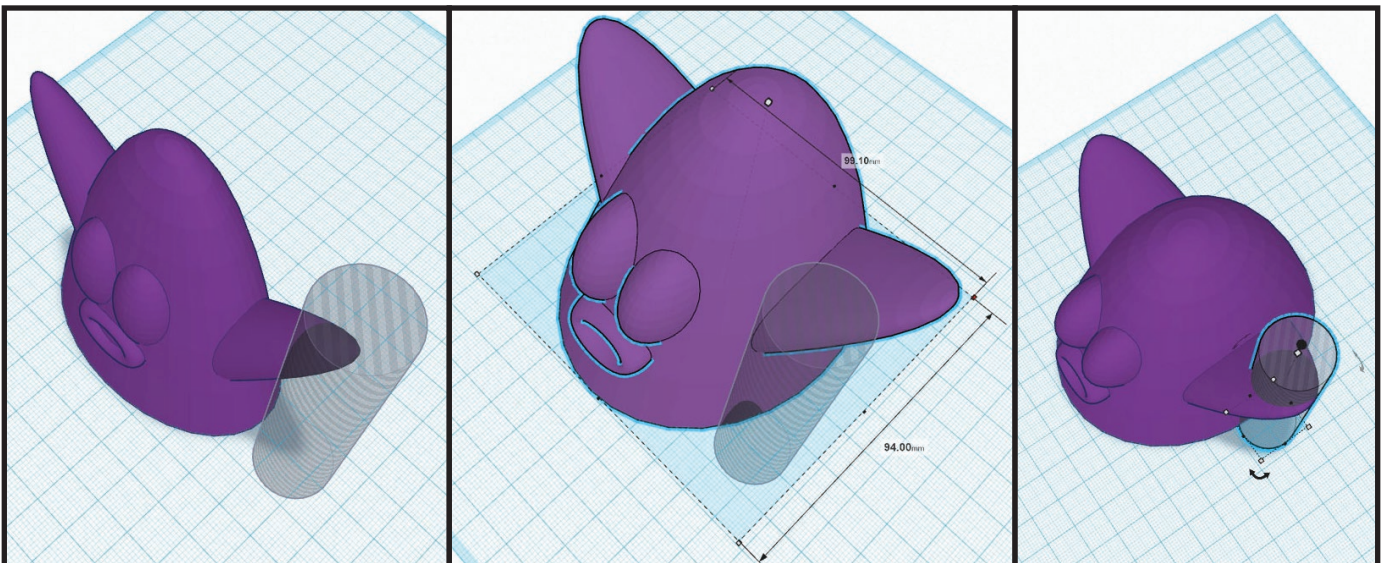
#### STEP 4: ADD ADDITIONAL SHAPES TO CUT FROM THE CONTAINER

(Such as adding a specific spot for your favorite stylus/pen/pencil to sit.)

- In the right side menu, in the Geometric section, click on "Cylinder", hover over your workspace, and click again to place the cylinder.
- Using the digital calipers, measure the widest part on the shaft of the stylus/pen/pencil, and note.
- Click the cylinder to select, using one of the white boxes in the corners, click + hold the white box and drag to the value you just calculated. (Be sure to drag the height as well, so it will go through the whole container.)

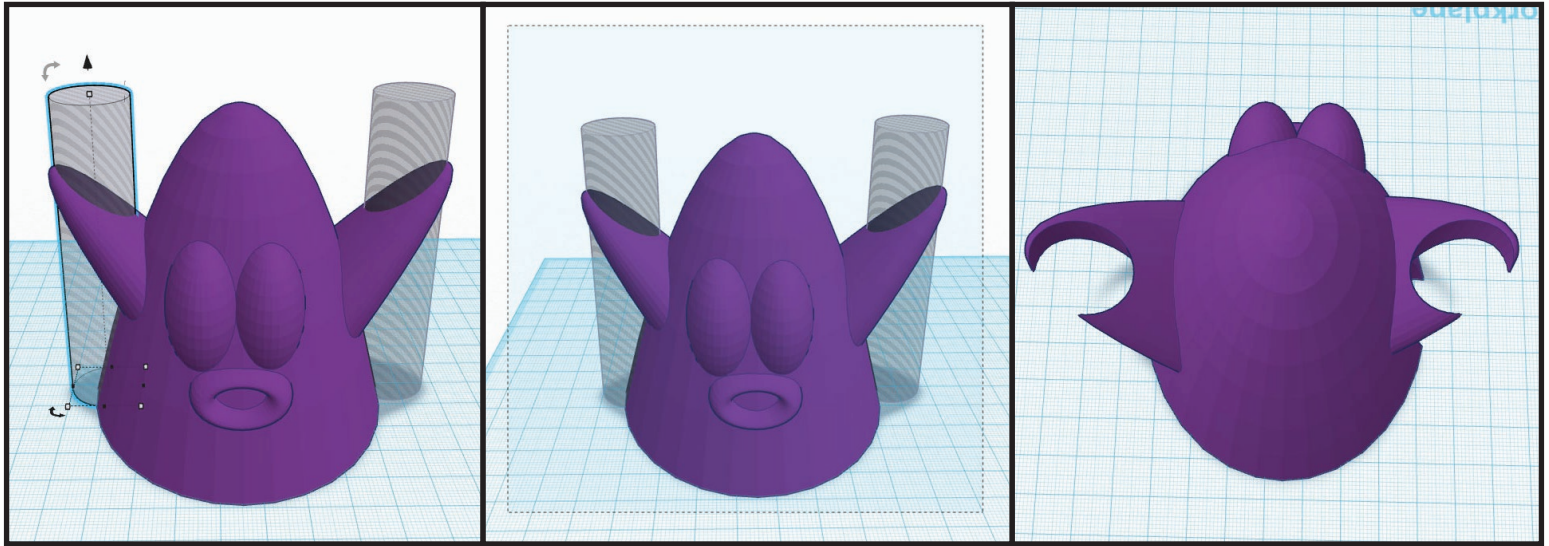


- With the cylinder still selected, change the cylinder to a Hole shape by clicking "Hole" in the inspector at the top right.
- With cylinder selected, click + hold on the cylinder and drag to position on the outside of the container base. Move cylinder to just barely punch through outside wall on container base. (If cylinder is too wide for container shape, drag the white boxes on container shape to make wide enough for cylinder "Hole".)



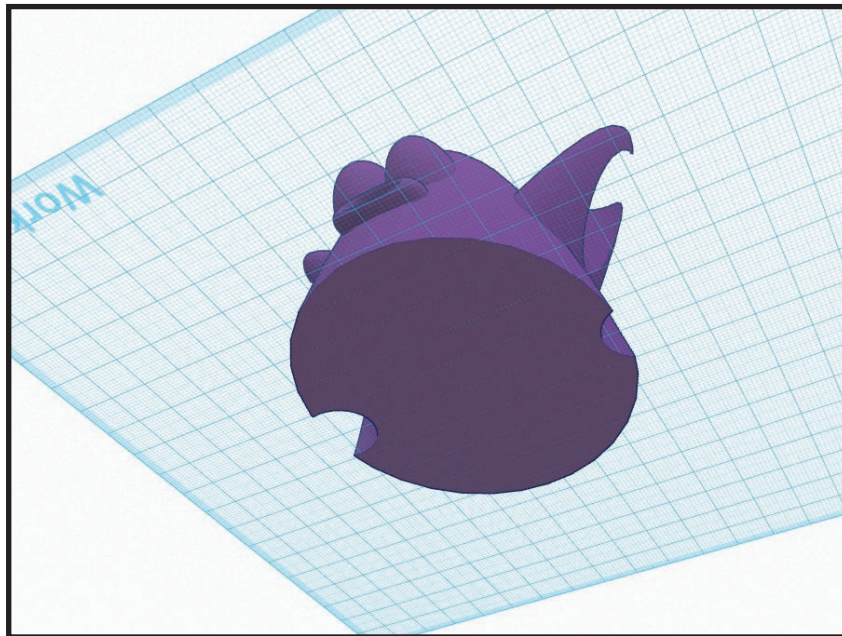


- Drag a selection box over entire project to select, and in the top right click "Group" to combine all the shapes together.



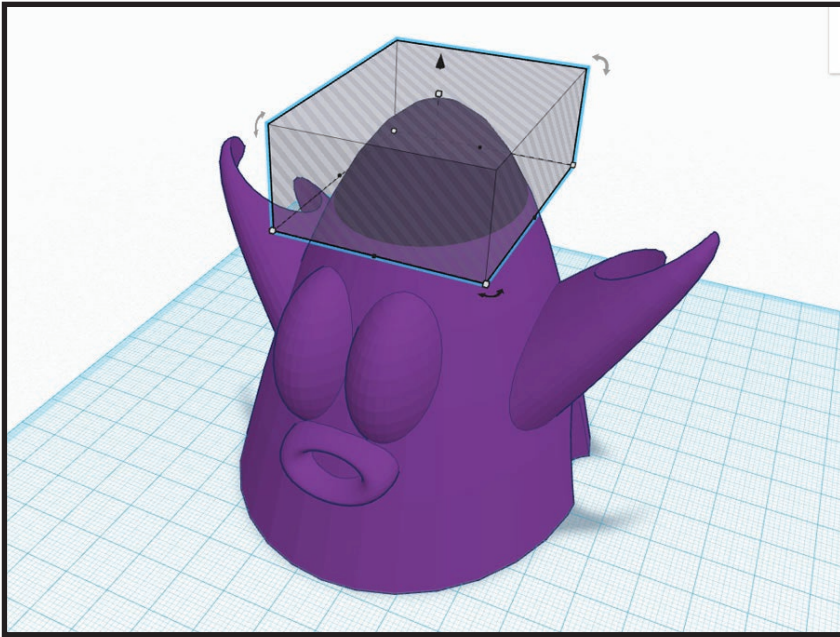
### **STEP 5: ENSURE CONTAINER HAS FLAT BOTTOM FOR PRINTING(OPTIONAL)**

- In the right side menu, in the Geometric section, click on "Box", hover over your workspace, and click again to place the box.
- Click the box to select, click + hold drag the box to be positioned over the bottom of the container shape. (Keep in mind what it covers will be deleted later.)
- Click the box to select, using one of the white boxes in the corners, click + hold the white box till the box shape covers the entire bottom area of the container shape.
- Click the box to select, change the box to "Hole" in the inspector at the top.
- Drag a selection box over entire project to select, and in the top right click "Group" to combine all the shapes together.



## STEP 6: ENSURE CONTAINER HAS A FLAT TOP FOR OPENING

- In the right side menu, in the Geometric section, click on “Box”, hover over your workspace, and click again to place the box.
- Click the box to select, click + hold drag box to be positioned over most top area of the container shape. (Keep in mind what it covers will be deleted later.)
- Click the box to select, using one of the white boxes in the corners, click + hold the white box till the box shape covers the entire top area to be the opening of the container shape.
- Click the box to select, change the box to “Hole” in the inspector at the top.
- Drag a selection box over entire project to select, and in the top right click “Group” to combine all the shapes together.



Now you're ready to export an STL from your project and give it to the Assistant Instructor for printing.

