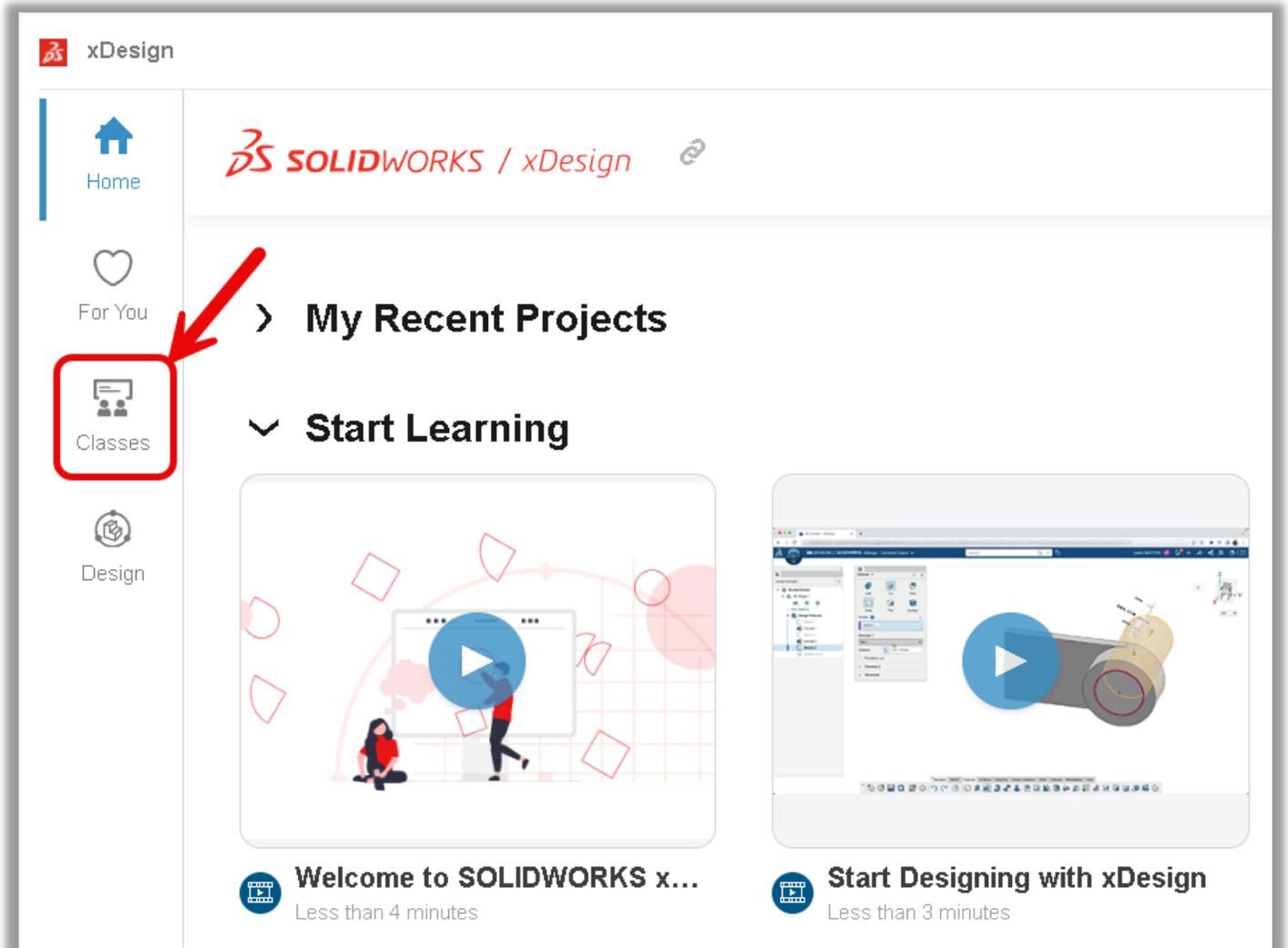


# Design and fabricate your own botanical press.

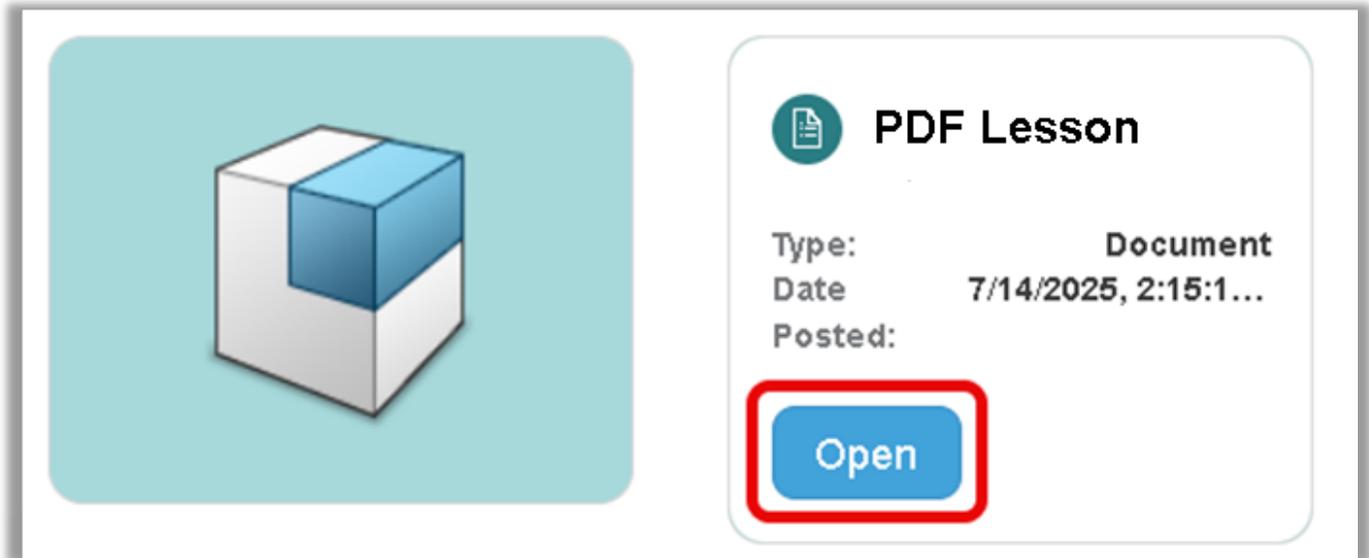
## 1. Click the **Classes** tab



## 2. Hover over the PDF tile

The screenshot displays the xDesign web interface. On the left is a vertical navigation menu with icons for Home, For You, Classes (highlighted with a blue bar), and Design. The main content area features the SolidWorks logo and 'xDesign' text, followed by the class title 'Fab in a Box Class' and the subtitle 'Design and make something amazing'. Below this, it lists 'Professor : Sal' and two tabs: 'Content' (active) and 'Assignments'. Under the 'Content' tab, there is a section titled 'Explore' containing two tiles. The first tile shows a 3D model of a cube with a blue top face. The second tile shows a PDF document icon, which is highlighted with a red rounded rectangle and a red arrow pointing down to it from above.

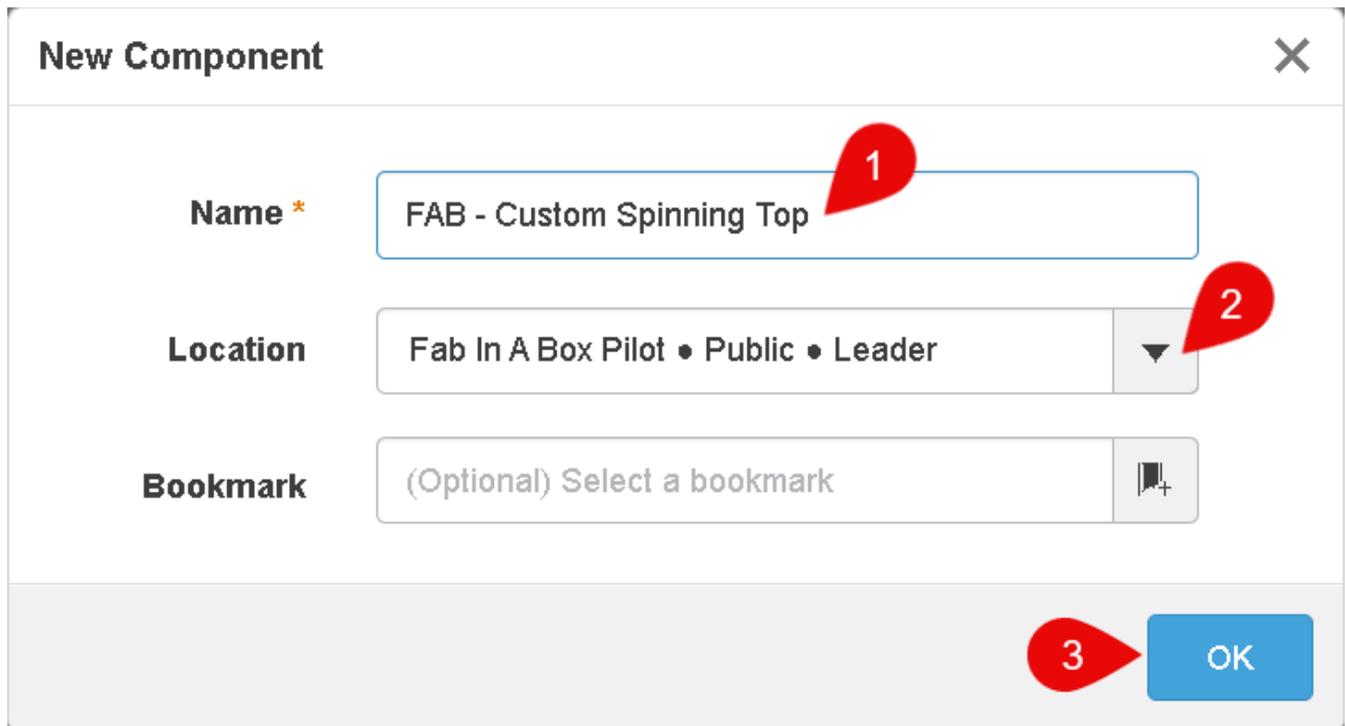
### 3. Click **OPEN**



### 4. Click the **+Create** button at the top of the xDesign “Home” screen



5. [1] Give the design a unique name, [2] select your class's name as the location, and then [3] click **OK**



The image shows a 'New Component' dialog box with three input fields and an 'OK' button. Red callout bubbles with numbers 1, 2, and 3 point to the Name field, the Location dropdown, and the OK button respectively.

**New Component** [Close]

**Name \*** FAB - Custom Spinning Top

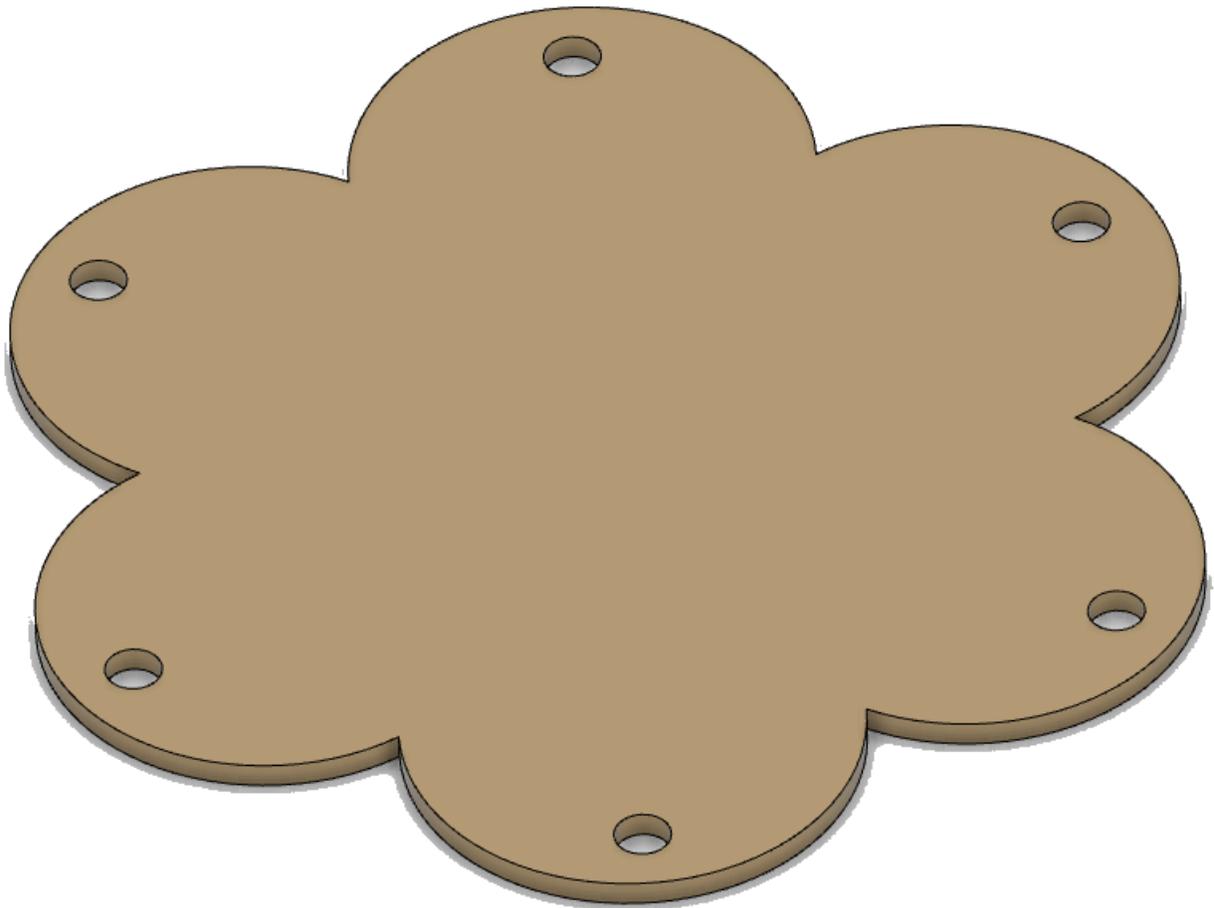
**Location** Fab In A Box Pilot • Public • Leader

**Bookmark** (Optional) Select a bookmark

OK

Use this model to design your own botanical press plates.

- They can be any shape you like, but should minimize waste when they're cut out of the stock material.
- They should include at least three, 0.375" holes in them to receive the bolt and wing nut that you'll build next.

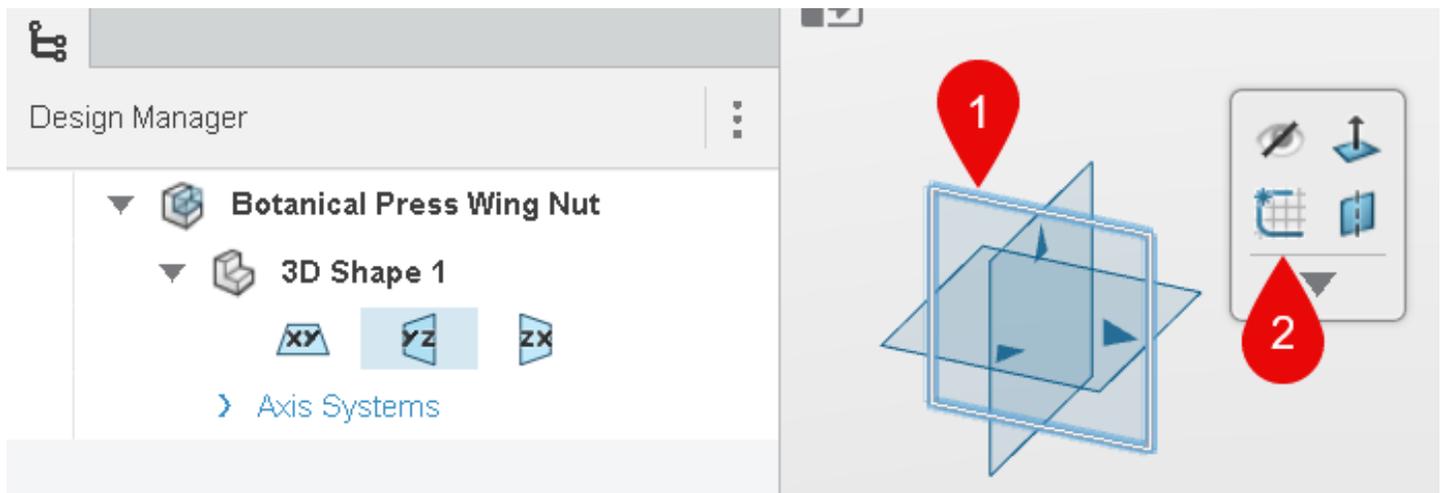


--- Sample Botanical Press Plate ---

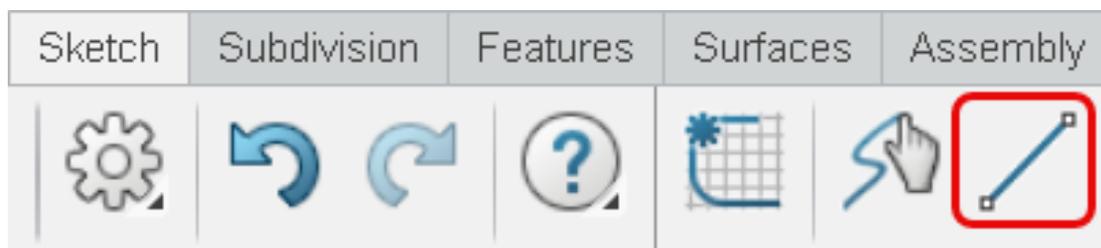
6. Save your botanical press plate design and then close it

7. Repeat steps 4 and 5 to create a new model

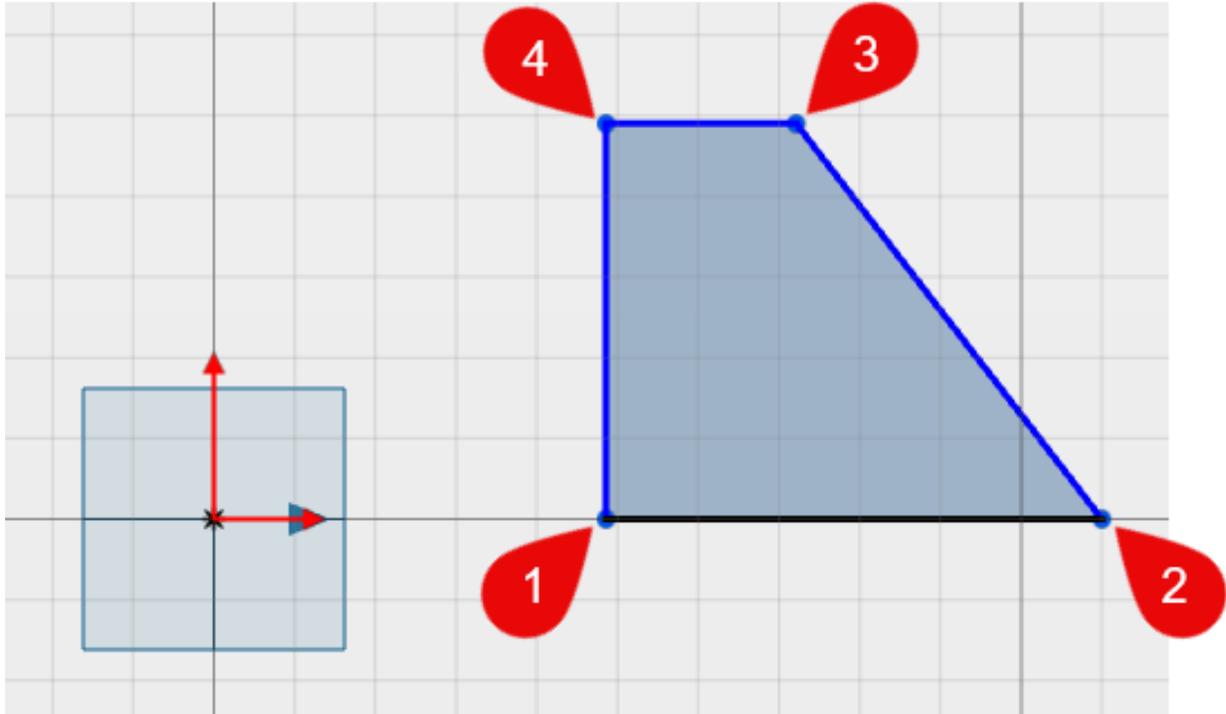
8. Start a sketch on the **YZ** Plane



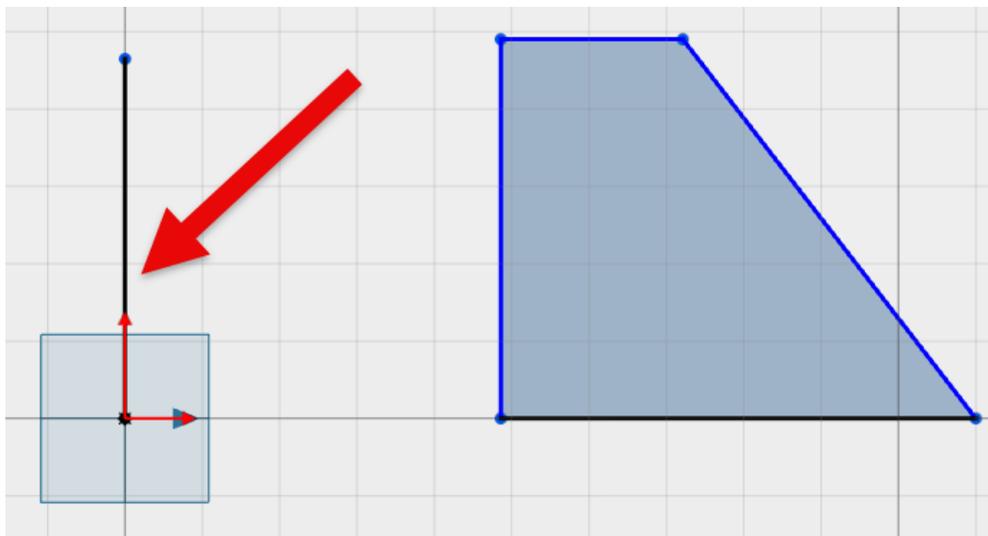
9. Turn on the **Line** tool



10. Sketch this shape, clicking at each location in the order shown. Make sure the lower line is horizontal and aligned with the origin

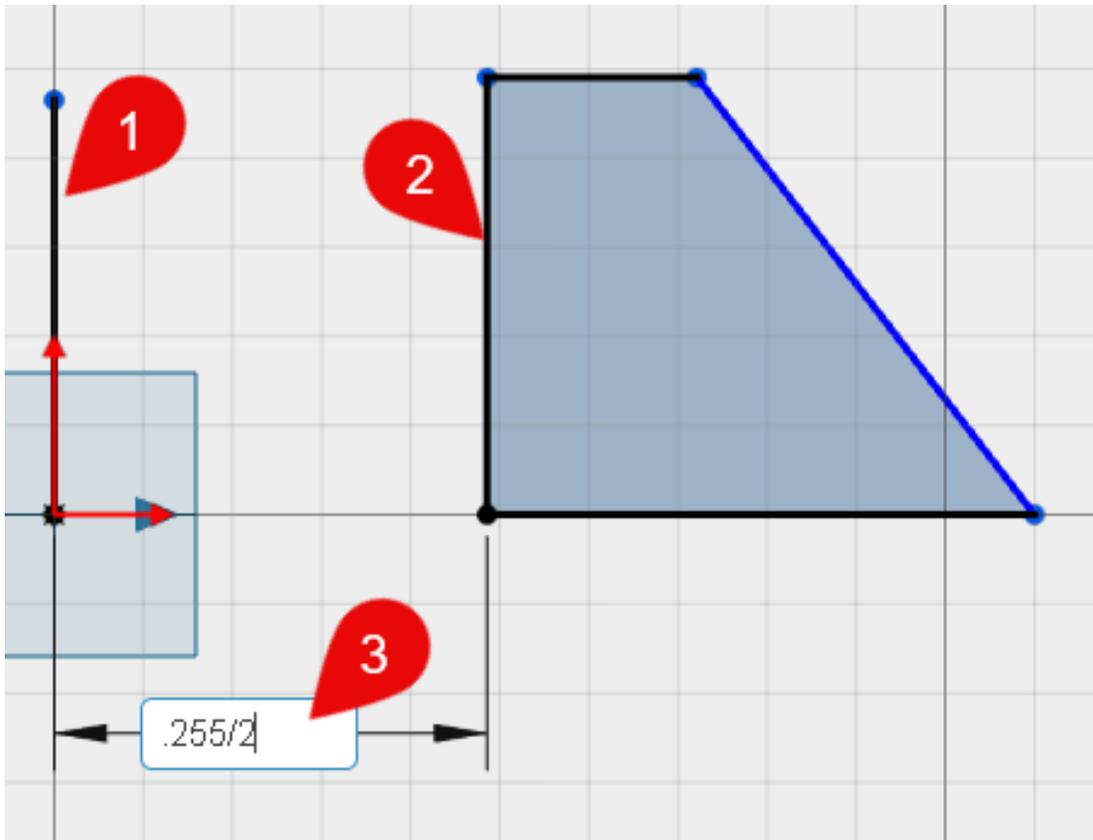


11. Sketch a single vertical line with one end coincident to the origin



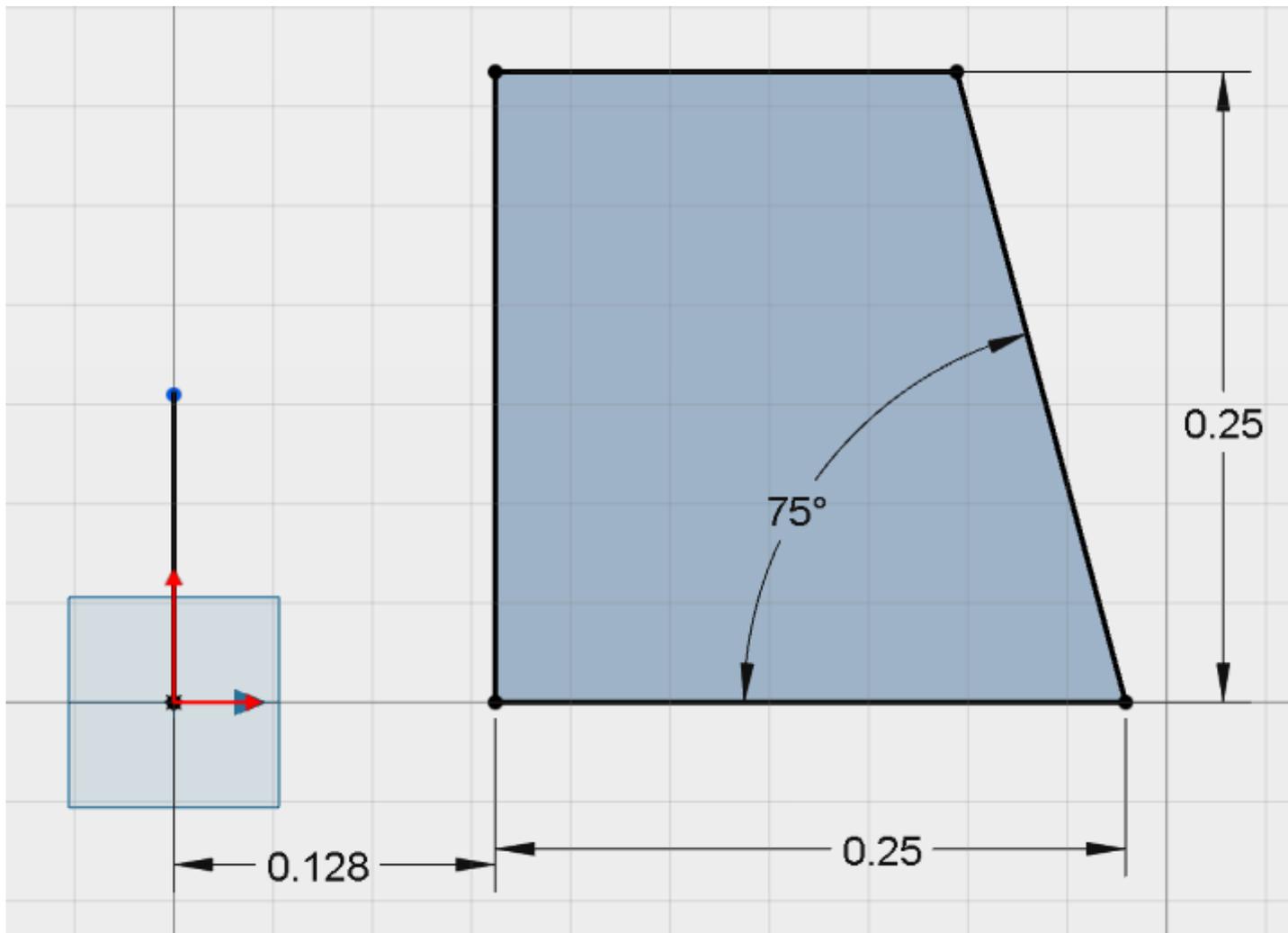
12. Press “D” on the keyboard to start the dimension command

13. Select the two vertical lines and then place the dimension below the sketch



14. Type 0.255/2 and press **Enter**

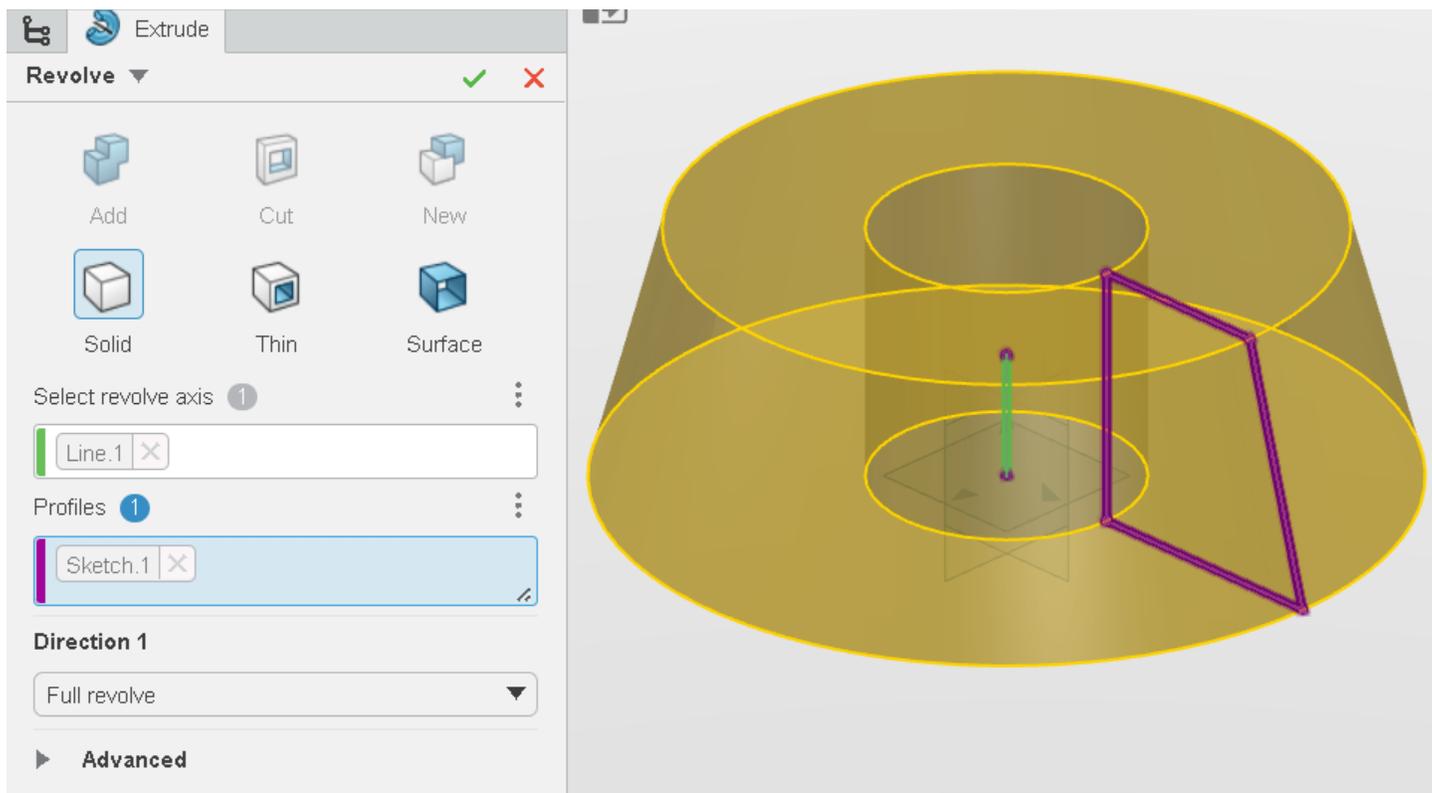
15. Add more dimensions to fully define the sketch



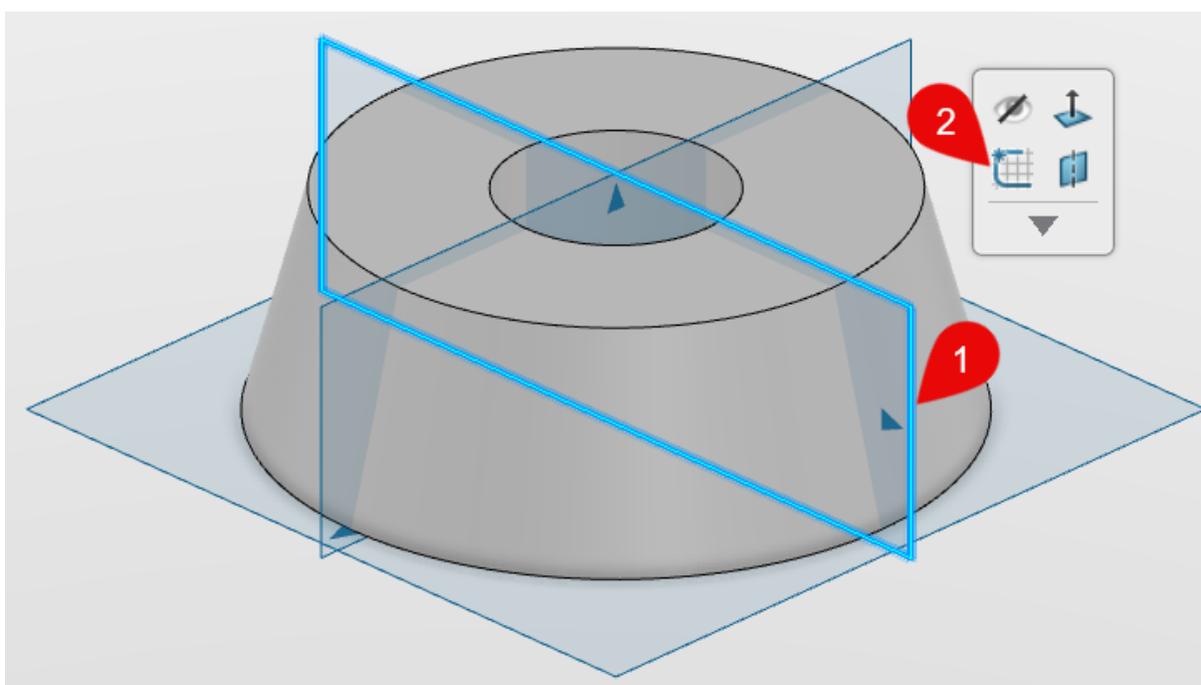
16. Click the **Revolve** command



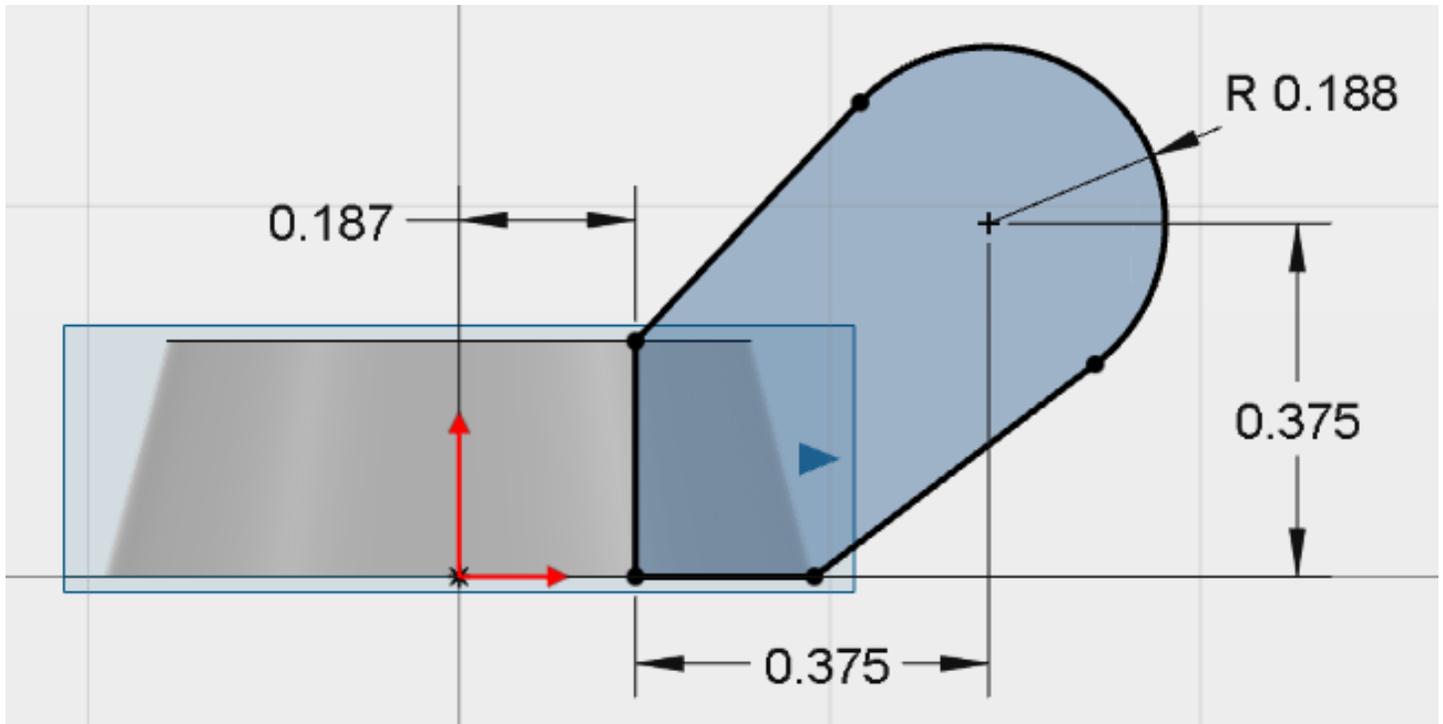
17. Revolve it 360 degrees about the vertical line you sketched at the origin, then click **OK**



18. Create another sketch on the **YZ** plane

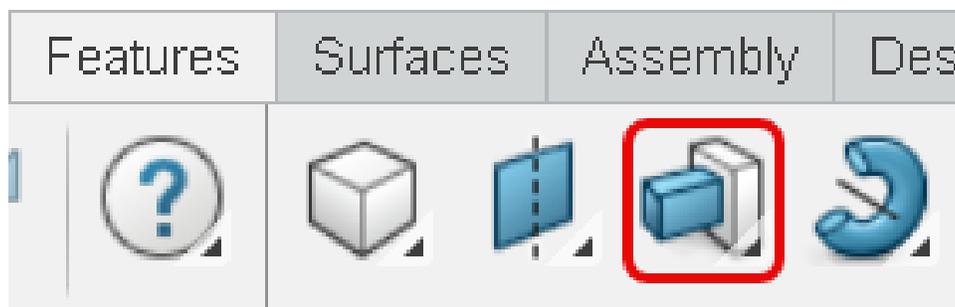


19. Sketch and dimension any shape you'd like for the wings on your wing nut. Keep in mind 3D Printing best practices

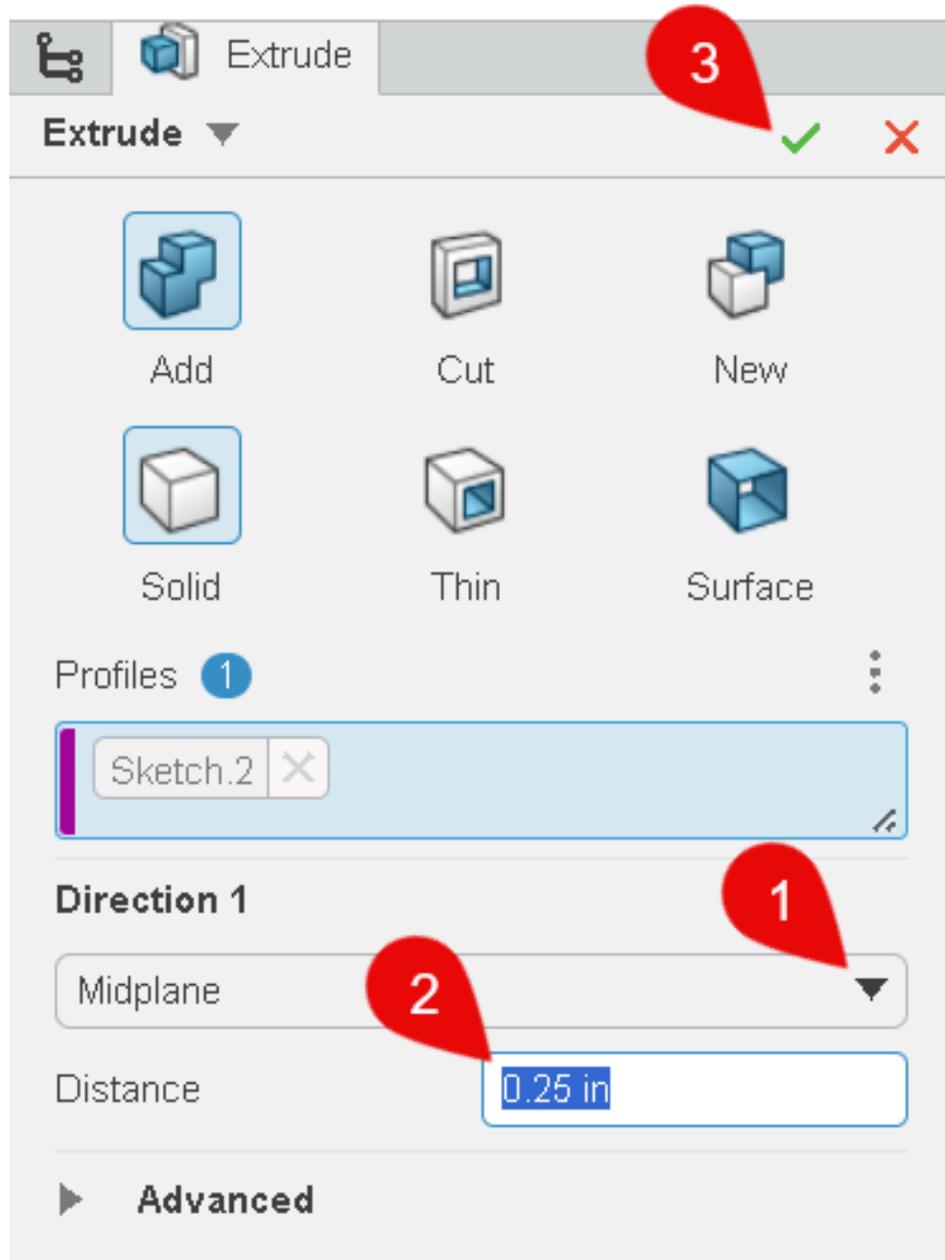


--- Sample Wing Nut Shape ---

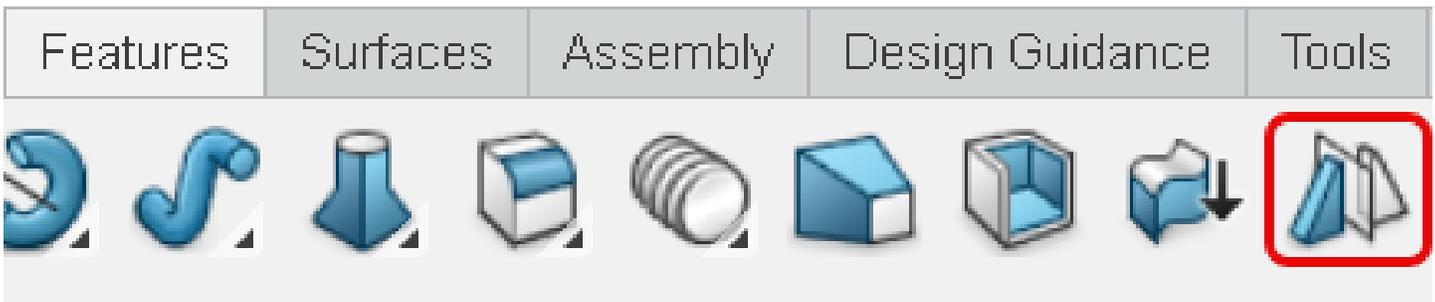
20. Click **Extrude** on the Features tab of the Action Bar



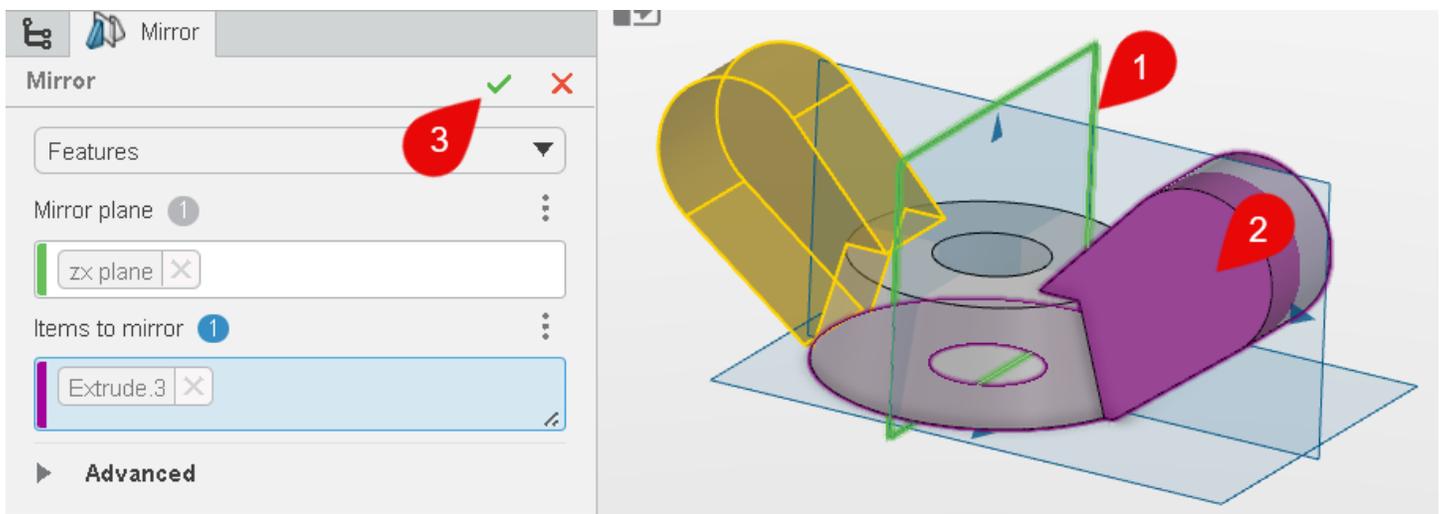
21. [1] Set the Direction 1 end condition to “**Midplane**”, [2] set the Distance to **0.25 in**, and then [3] click **OK**



22. Click **Mirror** on the Features tab of the Action Bar



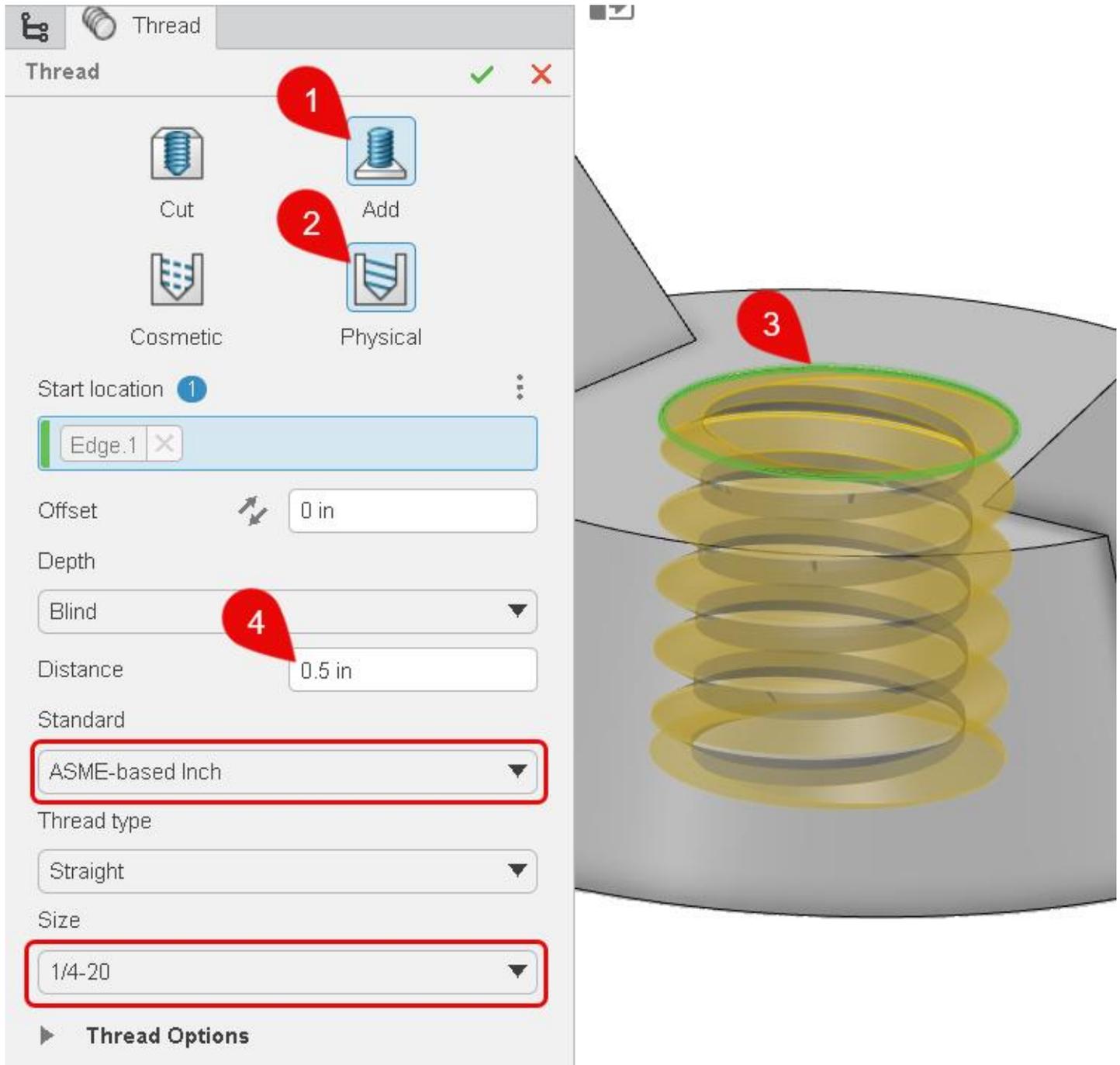
23. [1] Select the **YZ** plane, then [2] select a face on the wing you just extruded, and finally [3] click **OK**



24. [1] Click the expanding corner under the Hole command and then [2] click the **Thread** command



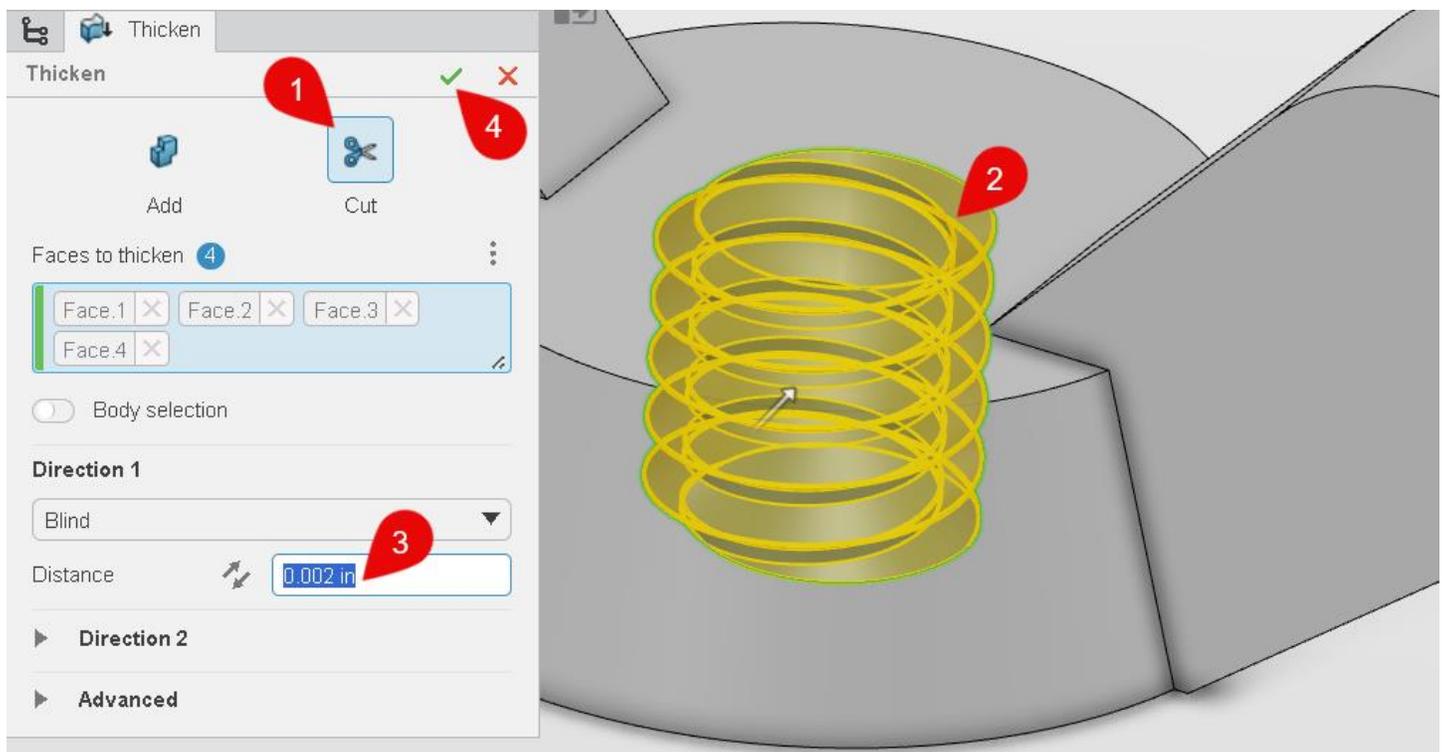
25. [1] Click **Add**, then [2] click **Physical**, [3] select the circular edge of the hole in the wing nut, [4] set the blind depth to **0.5 in**. Set the thread type to **ASME-Inch, 1/4-20**, and then click **OK**



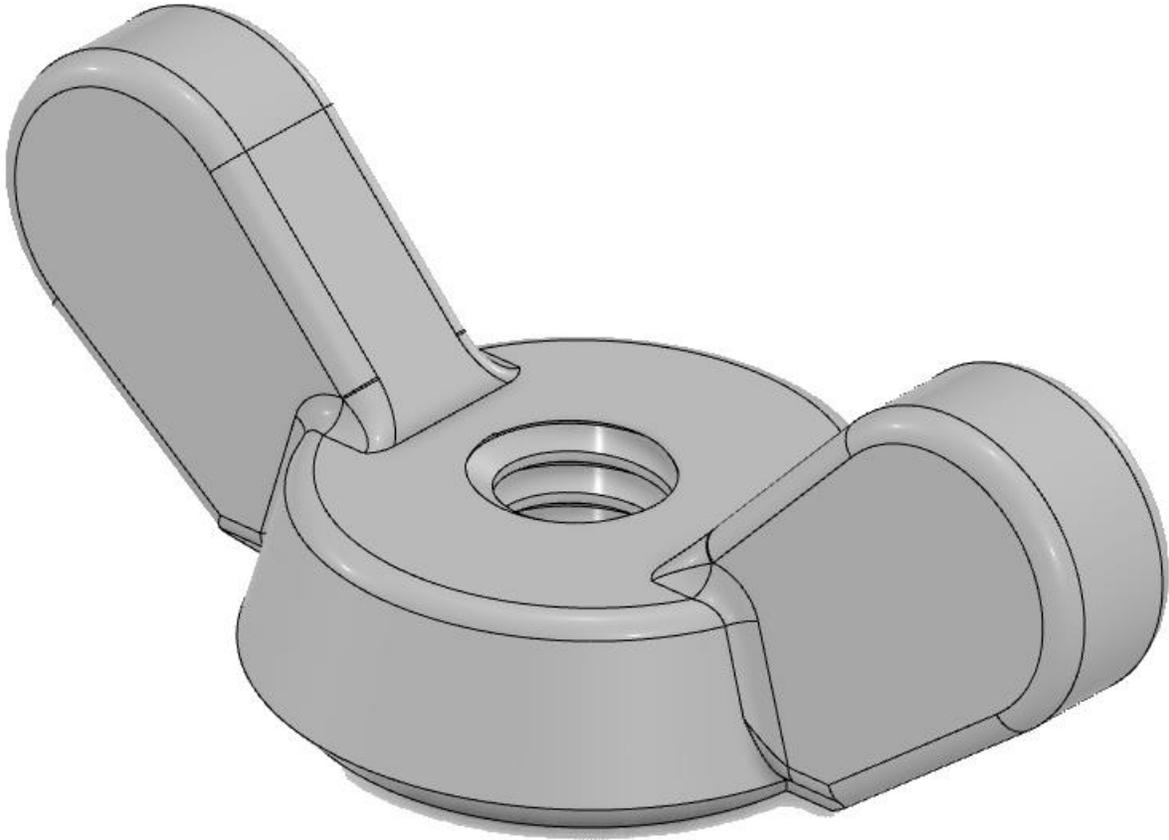
## 26. Click **Thicken** on the Features tab of the Action Bar



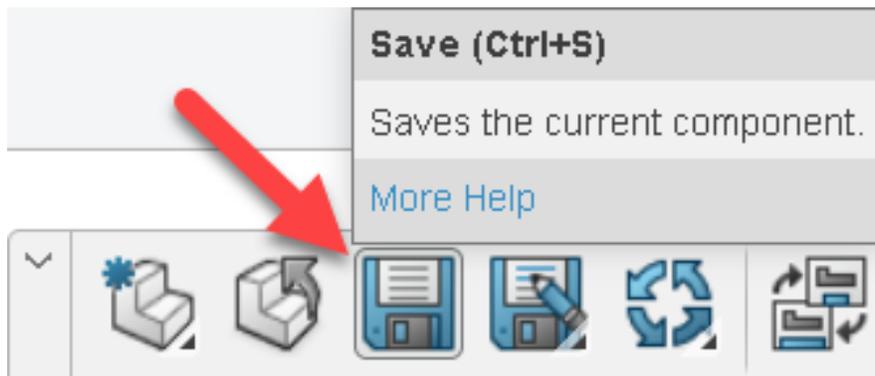
## 27. [1] Click **Cut**, [2] select the **four faces** that make up the thread, [3] set the distance to **0.002 in**, and then [4] click **OK**



28. Add fillets and/or chamfers and tweak the dimensions of the wingnut to get it to look exactly the way you want it.



29. Click “Save” on the Action Bar



## ***FABRICATE YOUR BOTANICAL PRESS***

30. Use the skills you acquired in previous lessons to save a set of **DXF** files for the laser cut parts and a set of **STEP** files for the 3D Printed parts of your botanical press

NOTE: The wing nut you just designed is sized to work with the “**Botanical Press Bolt**” that can be found in your class content. Be sure to 3D print a set of bolts too.

Save the files to the 3DDrive folder your instructor told you to use

**Congratulations!**

**You're ready to laser cut your botanical press!**

**See your teacher for further instruction!**