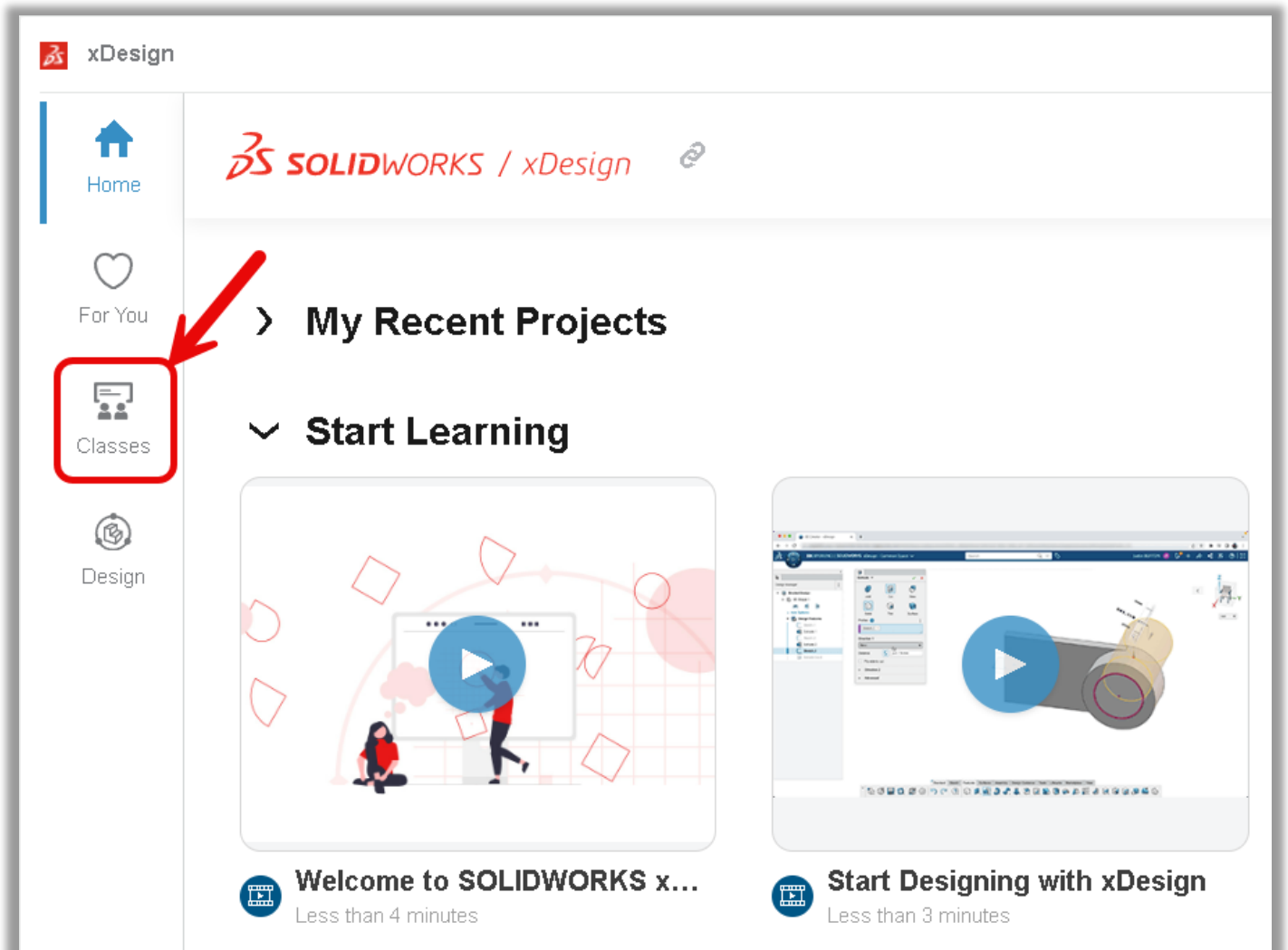
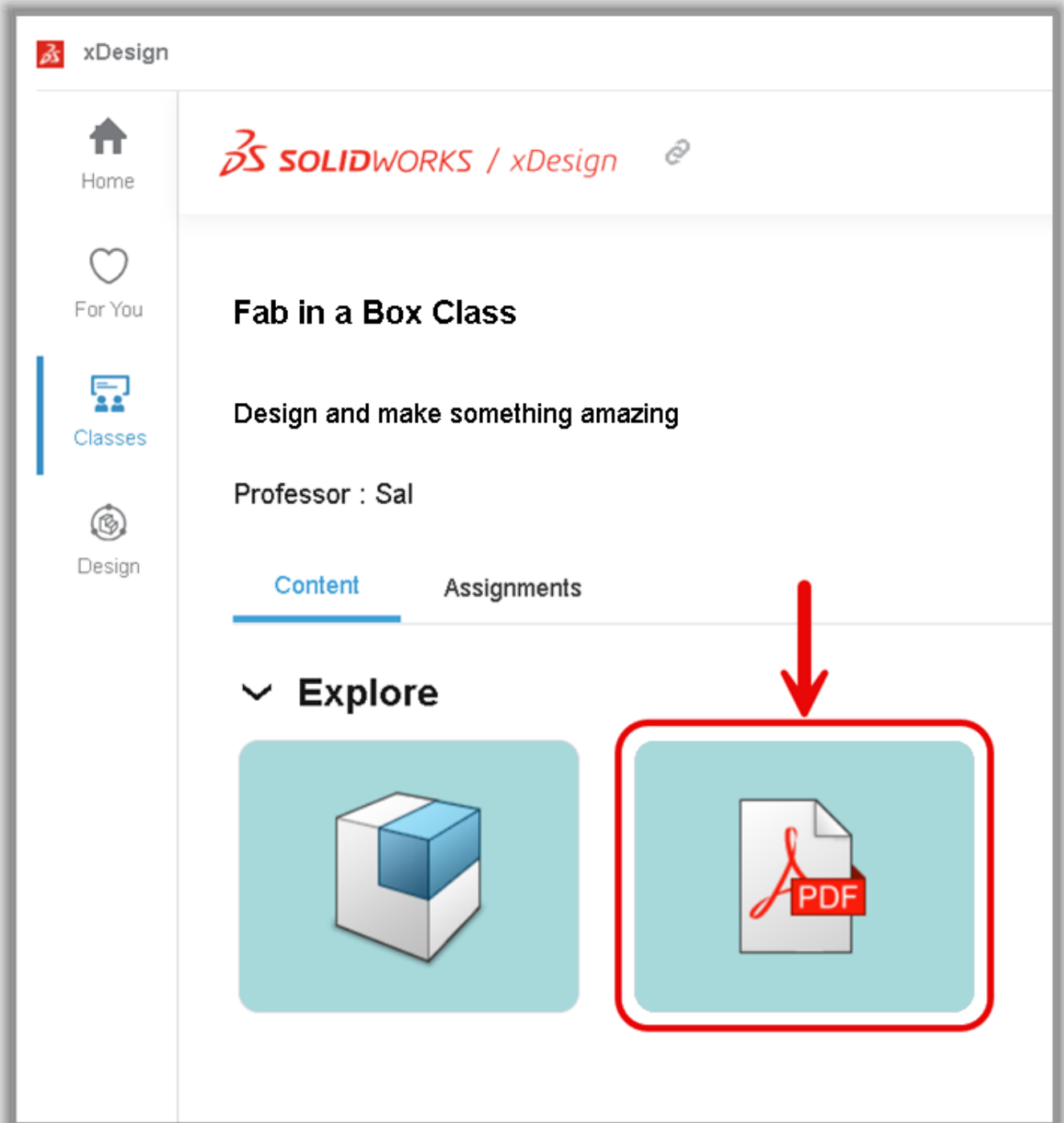


# Design and fabricate your own custom spinning top.

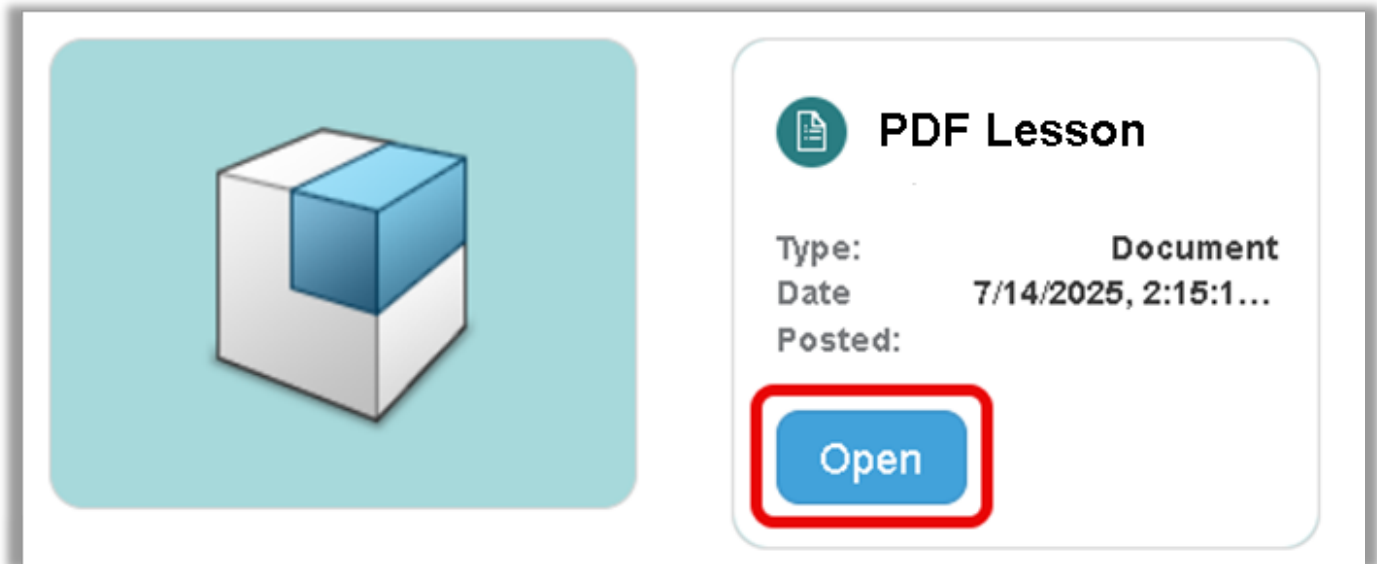
## 1. Click the **Classes** tab



## 2. Hover over the PDF tile



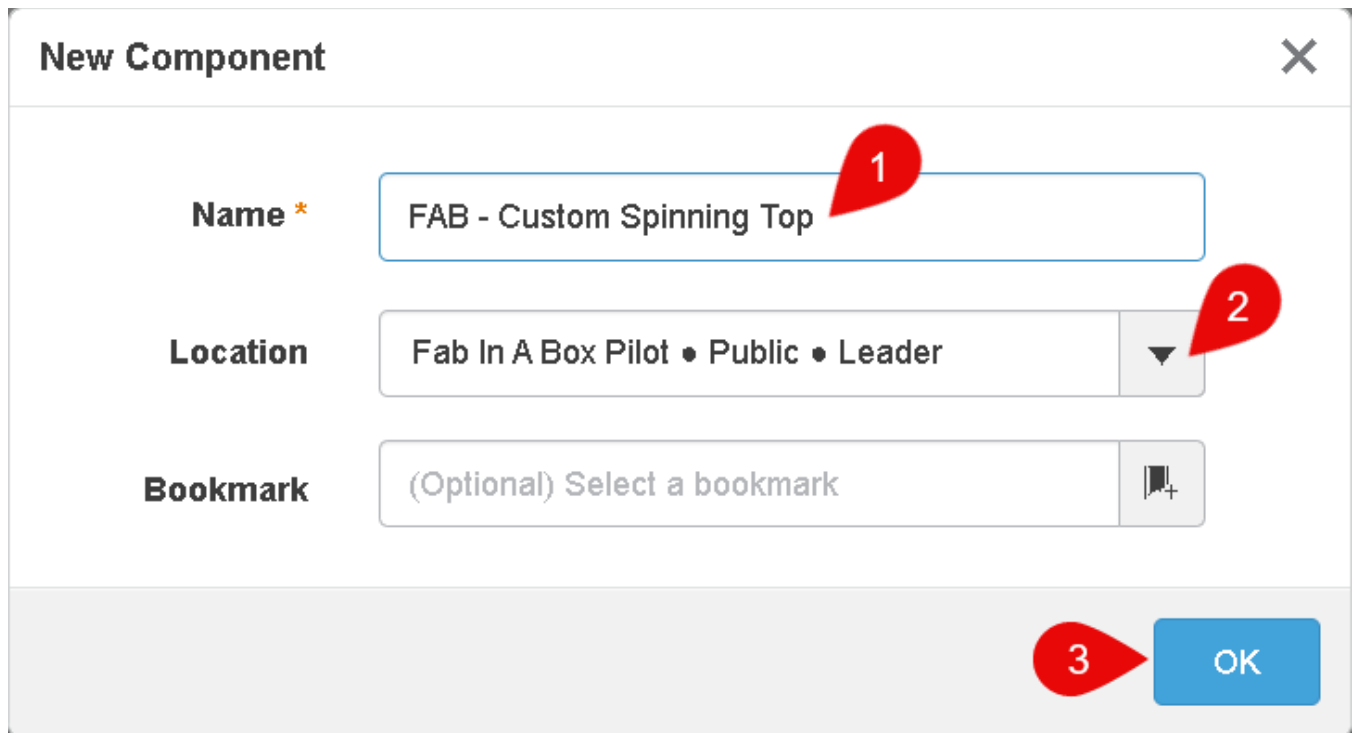
### 3. Click **OPEN**



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



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



The image shows a 'New Component' dialog box with three main 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** [X]

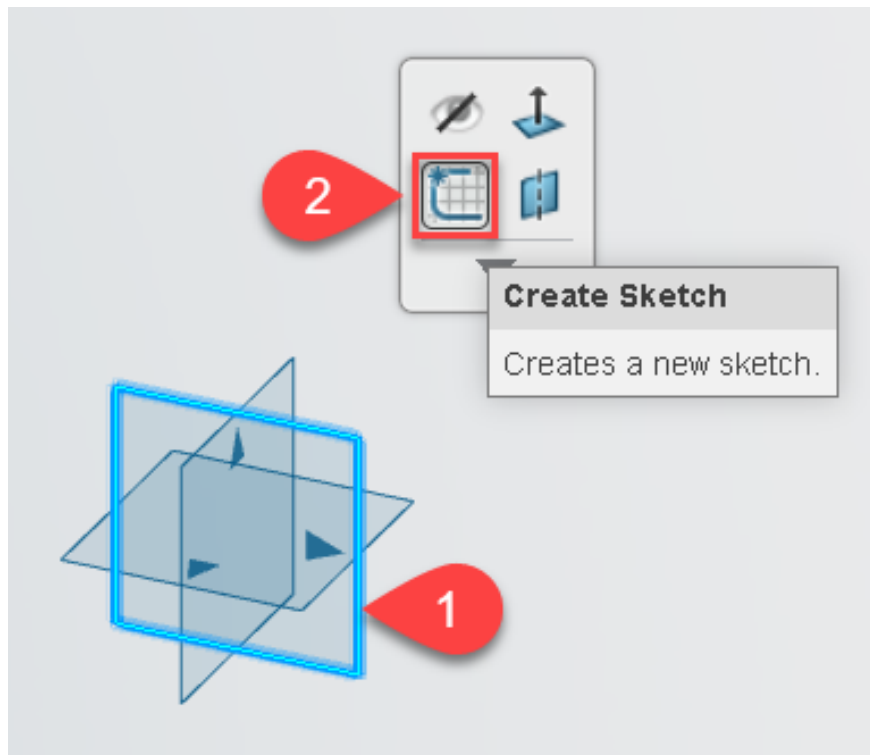
**Name \*** FAB - Custom Spinning Top

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

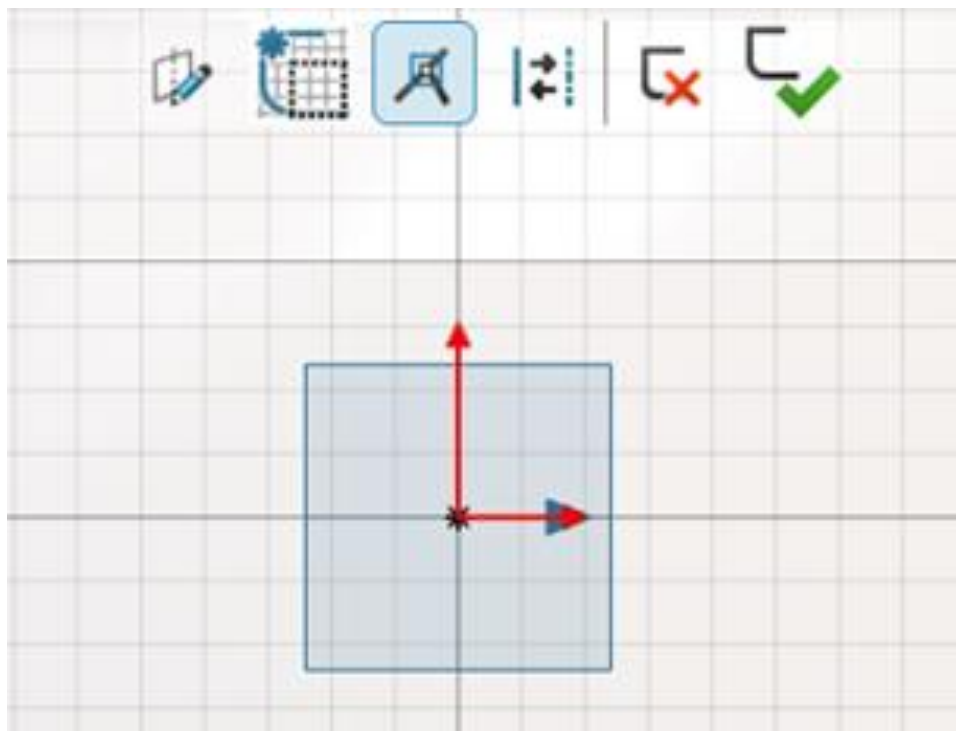
**Bookmark** (Optional) Select a bookmark

OK

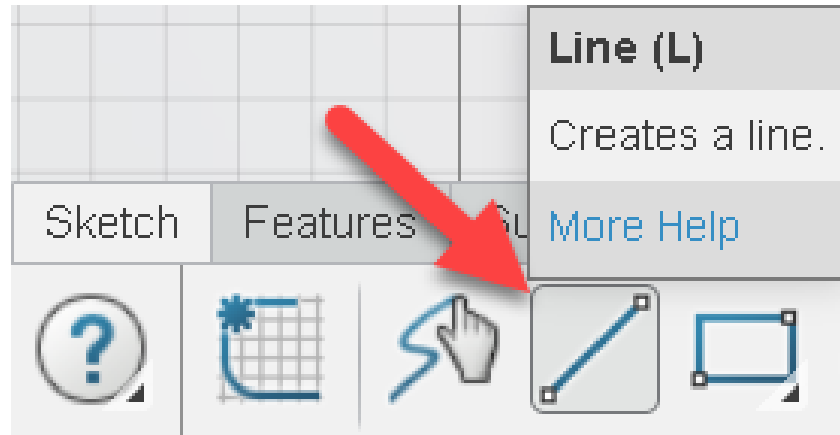
6. [1] Select the **YZ** plane from the graphics area and then [2] click the “Create Sketch” button on the context menu



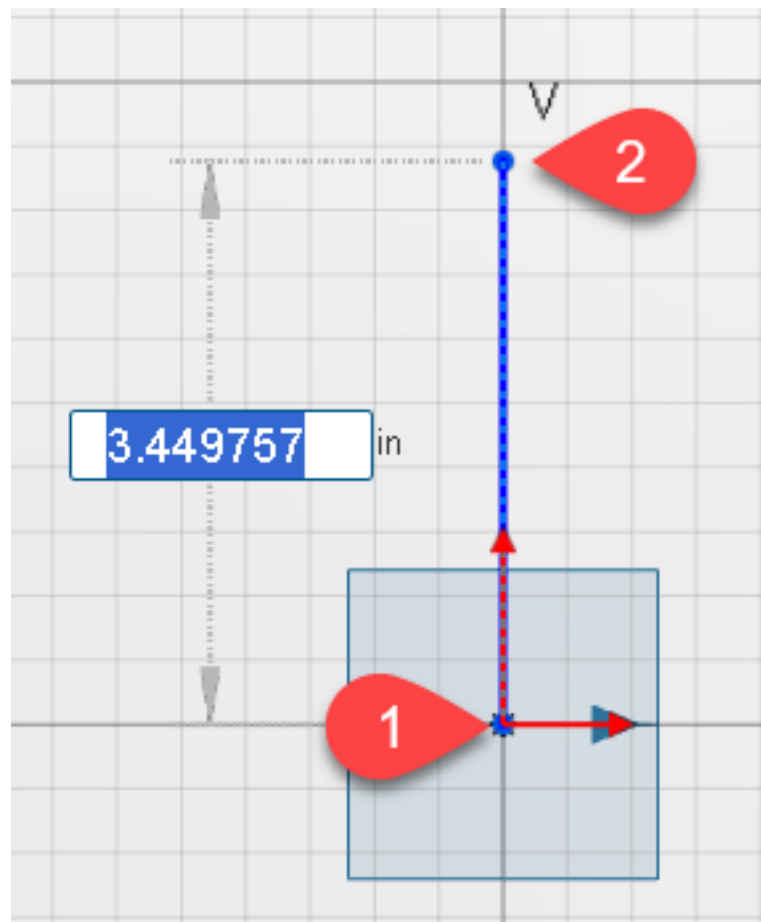
--- your model will now look like this, where you are looking straight at a 2D sketch:



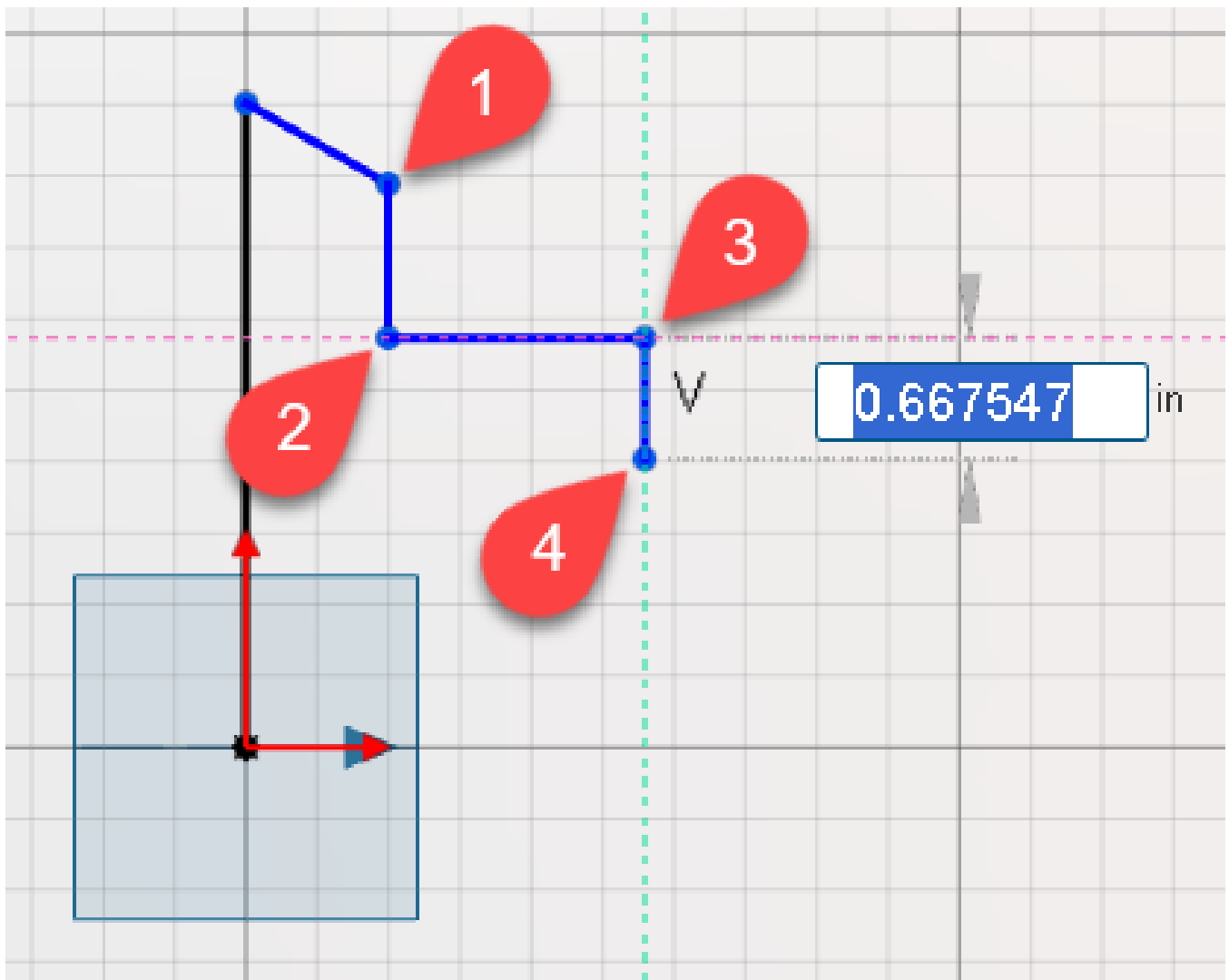
7. Click the “Line” tool on the Action Bar



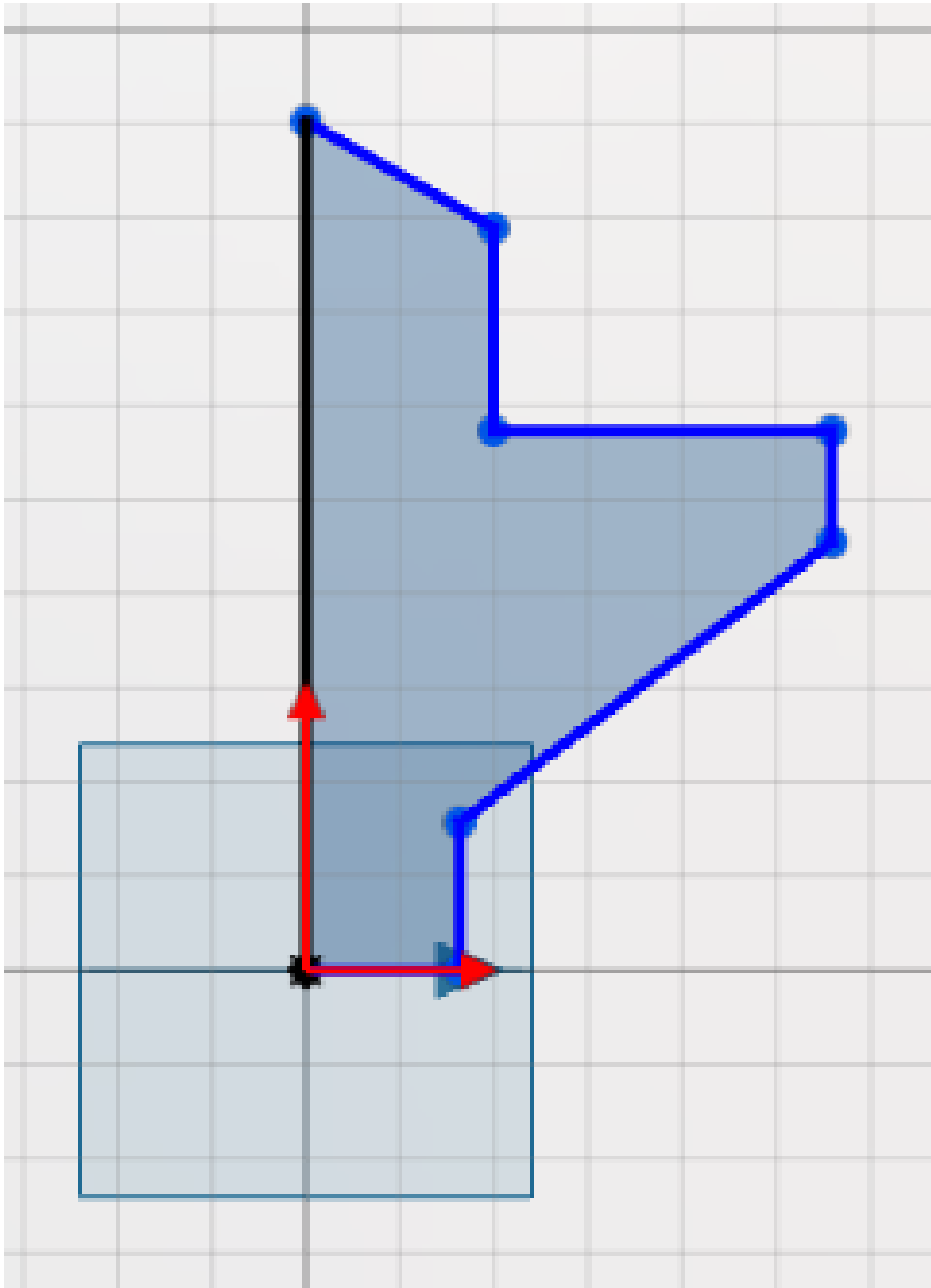
8. [1] Click on the origin to place the first point of the line, and then [2] click again to sketch a vertical line of any length



9. Move your mouse to the right and down and [1] click again to sketch another line at a slight angle down from horizontal, then continue clicking [2], [3], [4] to sketch more lines in the chain

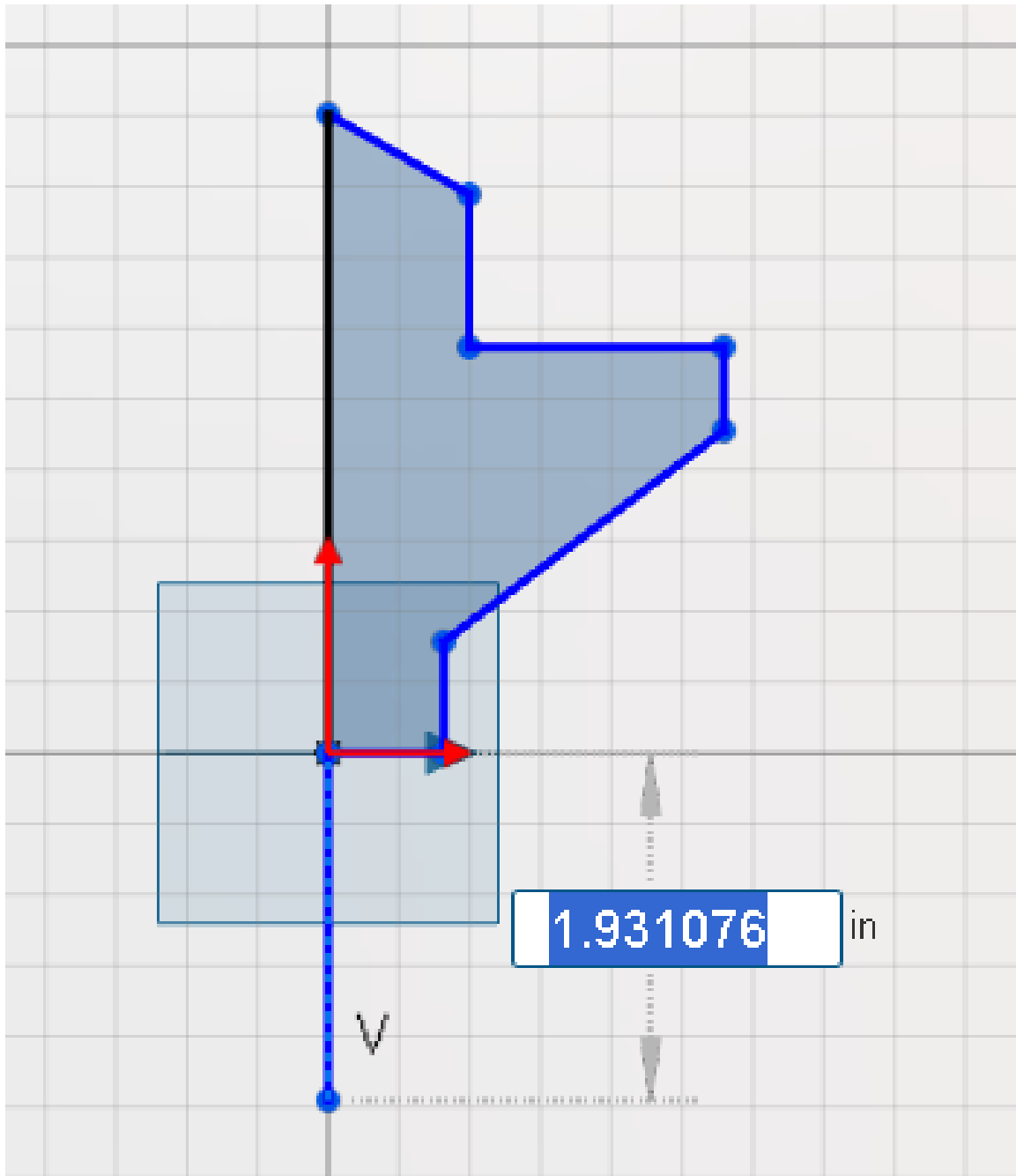


10. Sketch a shape that looks roughly like this. When your last line meets back up with the origin, the area you created will be shaded, letting you know the perimeter is closed

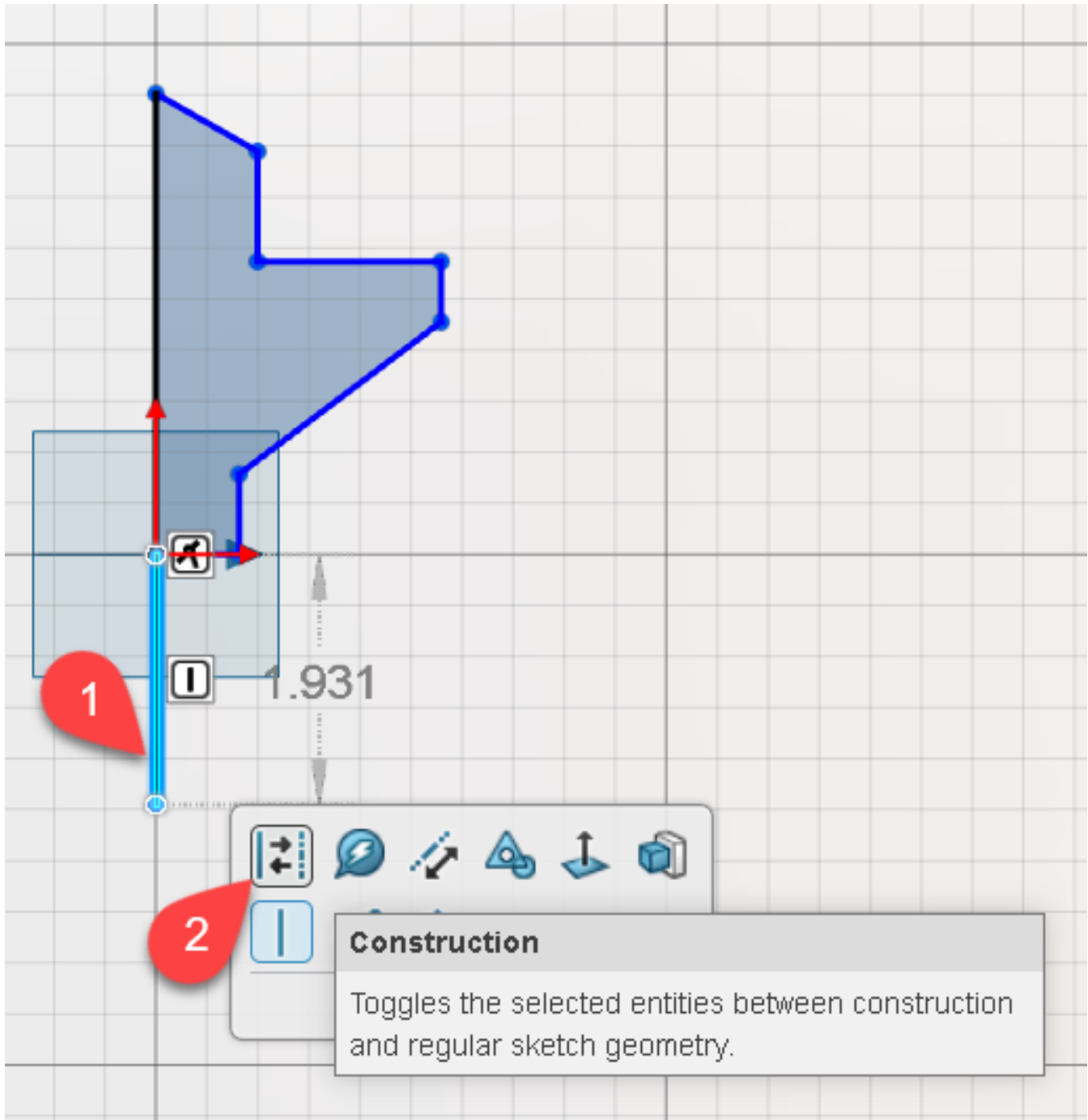




11. Sketch one more line of any length that starts at the origin and extends vertically downward, then press escape (**Esc**) on the keyboard to exit the line command

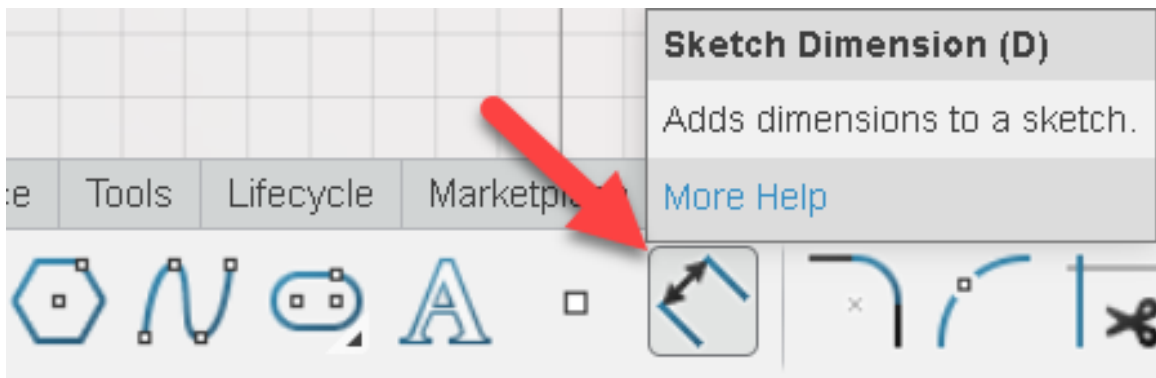


12. [1] Select the line you just drew, and then [2] click the “Construction” button on the context menu

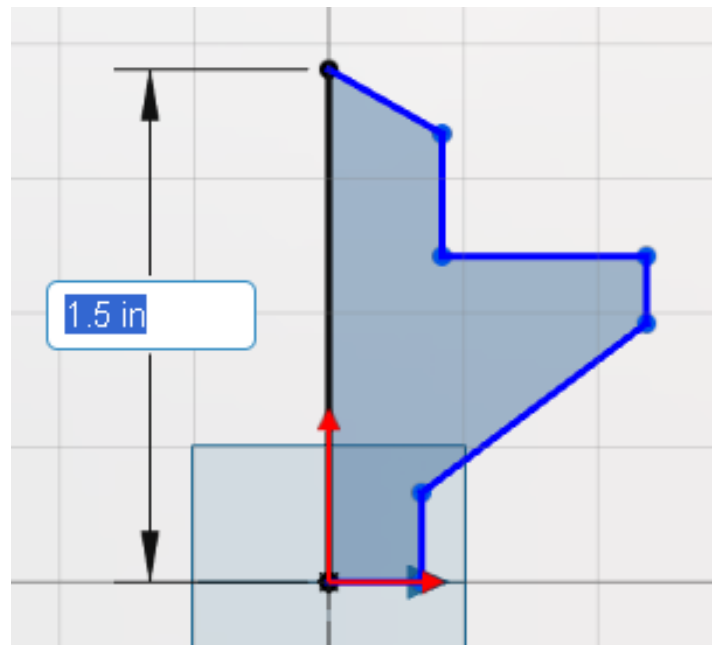
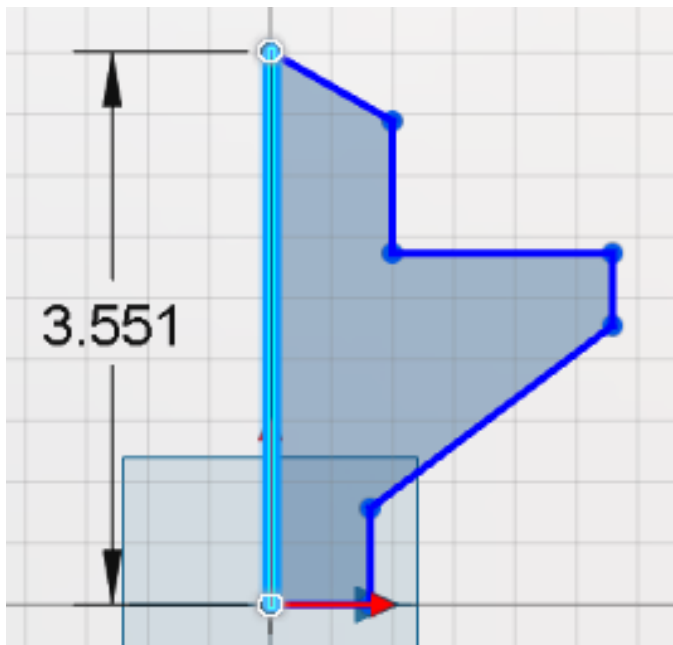


--- this will turn the line from solid to dashed

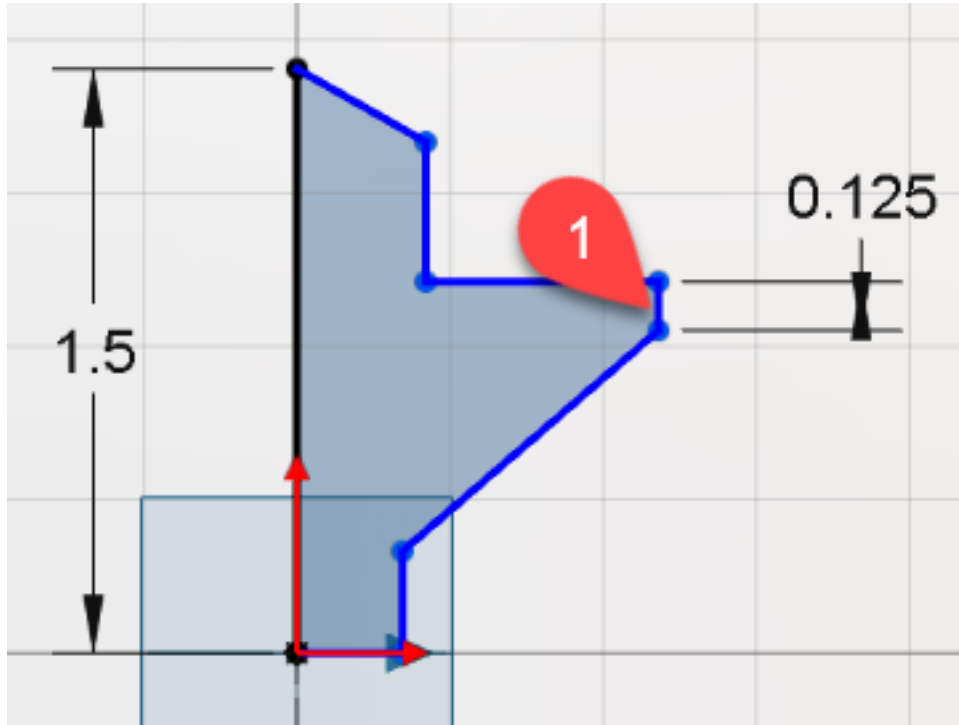
13. Click the “Sketch Dimension” tool on the Action Bar



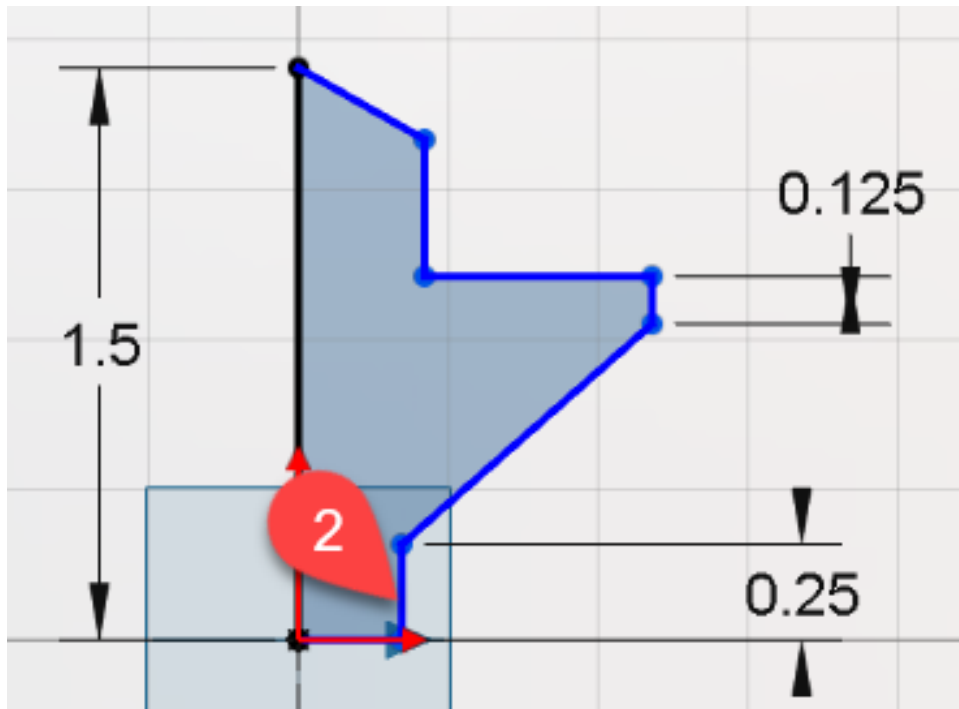
14. Select the first vertical line you sketched and place the dimension off to the left of the sketch, then type a value of 1.5 in. and press Enter on the keyboard



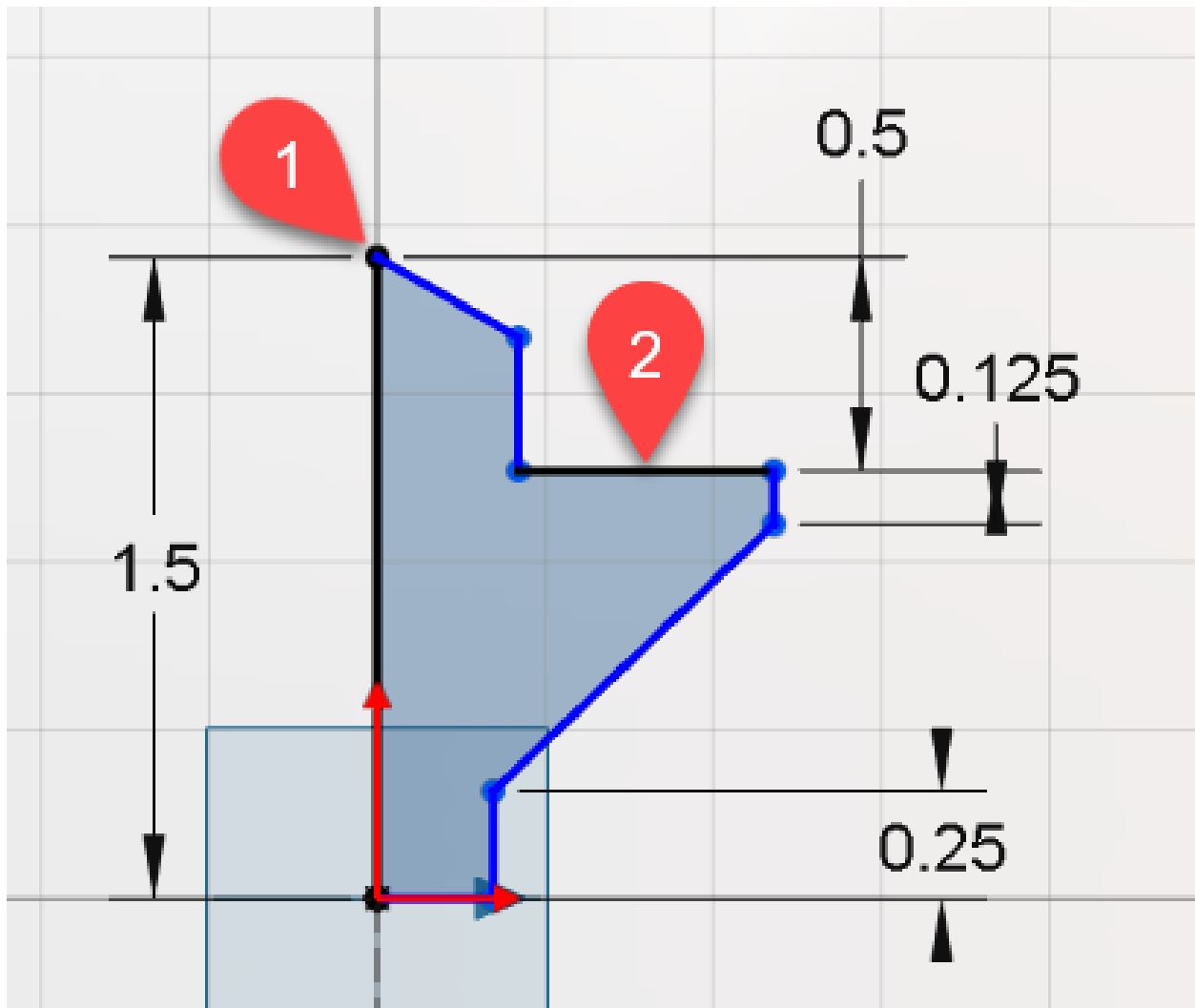
15. Select line [1] and place the dimension off to the right. Enter a value of 0.125 in.



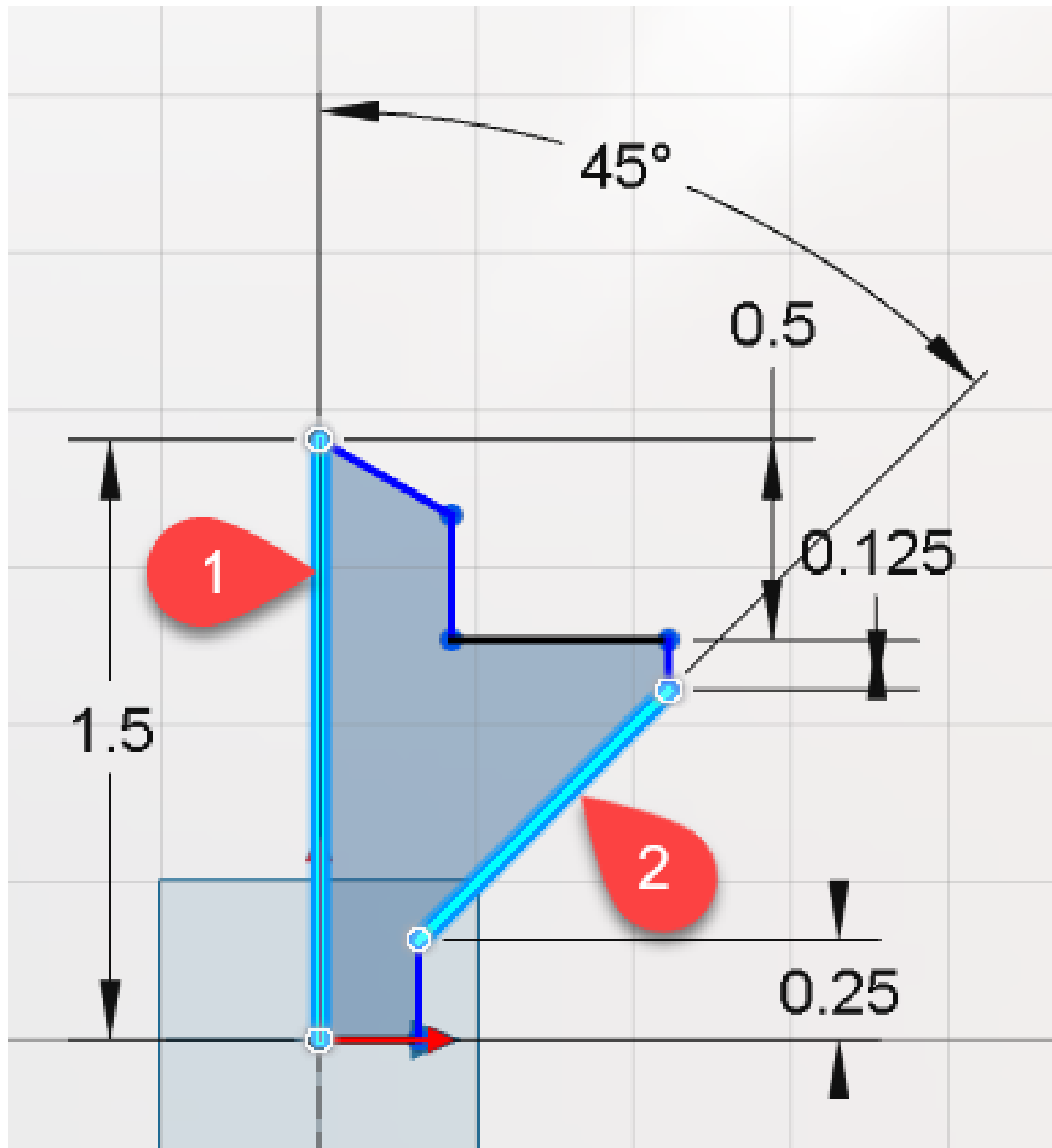
16. Select line [2] and place the dimension off to the right. Enter a value of 0.25 in.



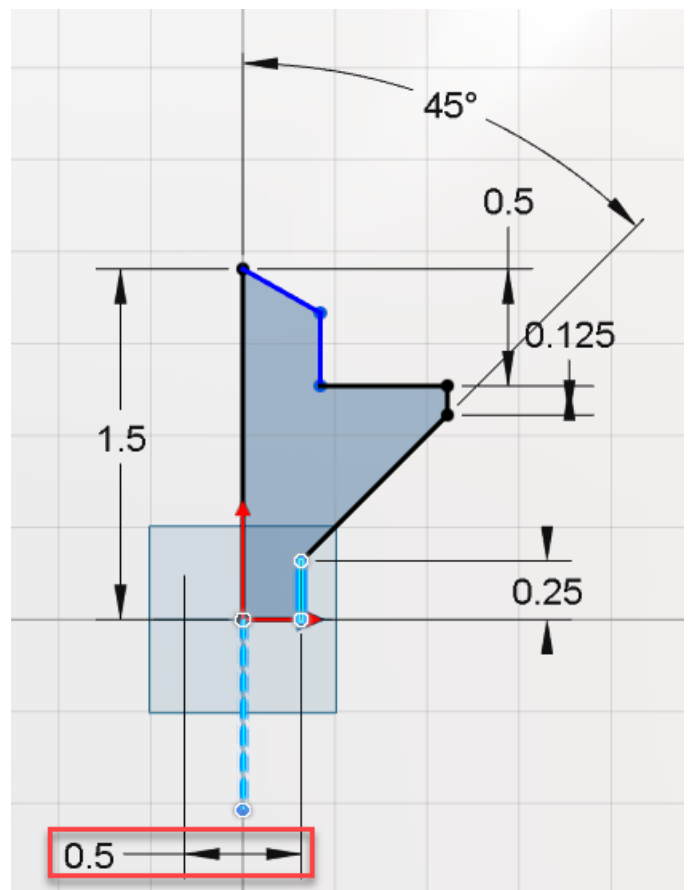
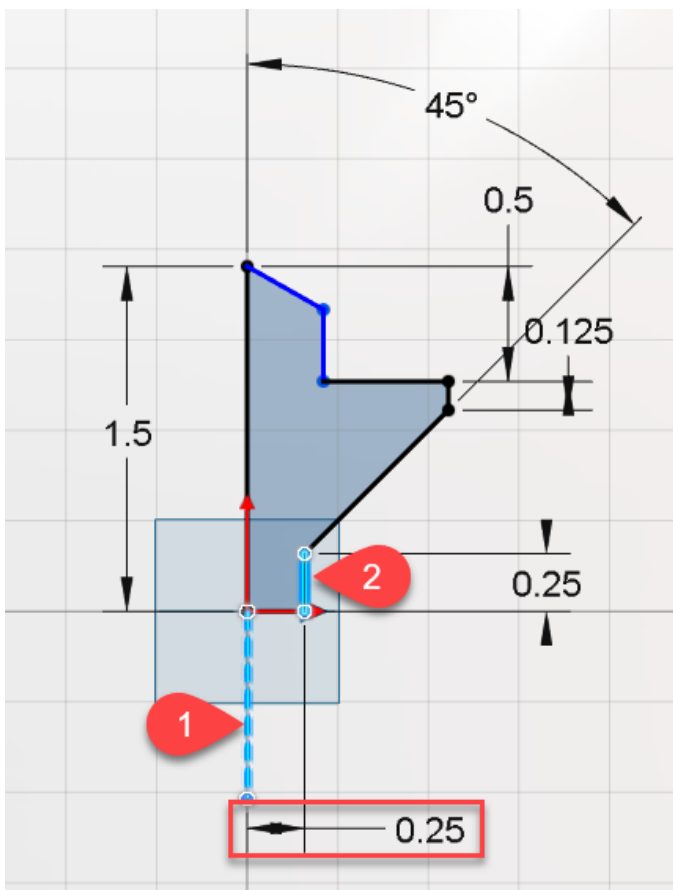
17. Select point [1] and then line [2]. Place the dimension off to the right and enter a value of 0.5"



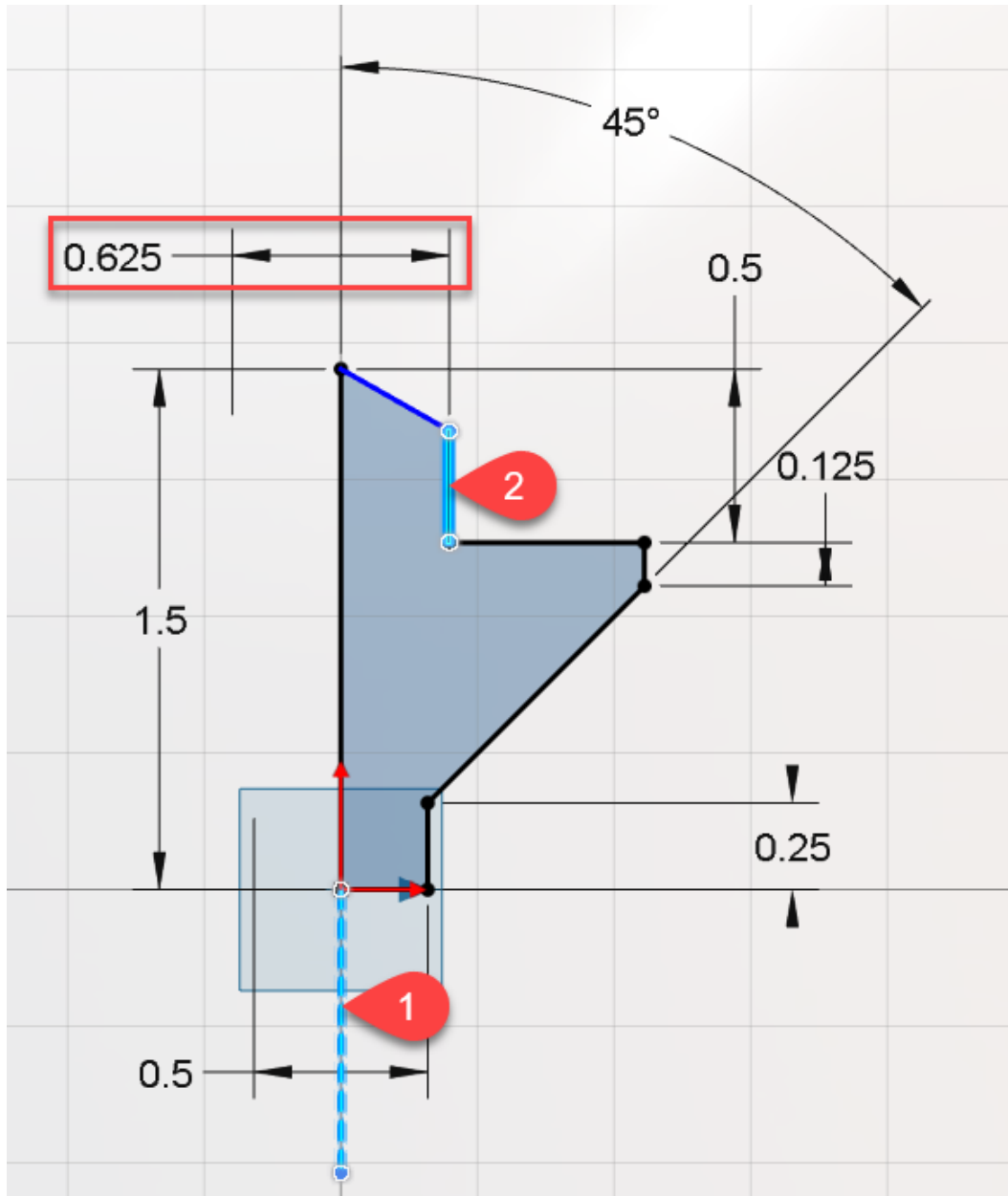
18. Select line [1] and then line [2]. Place the angle dimension up and to the right, then enter a value of 45 deg.



19. Select line [1] and then line [2]. Before placing the dimension, move your mouse to the left and to the right of the dashed line. Notice how the dimension changes from a single (or radius) to a double (or diameter) dimension. Place the dimension to the left of the dashed line, creating a diameter dimension. Enter a value of 0.5 in.

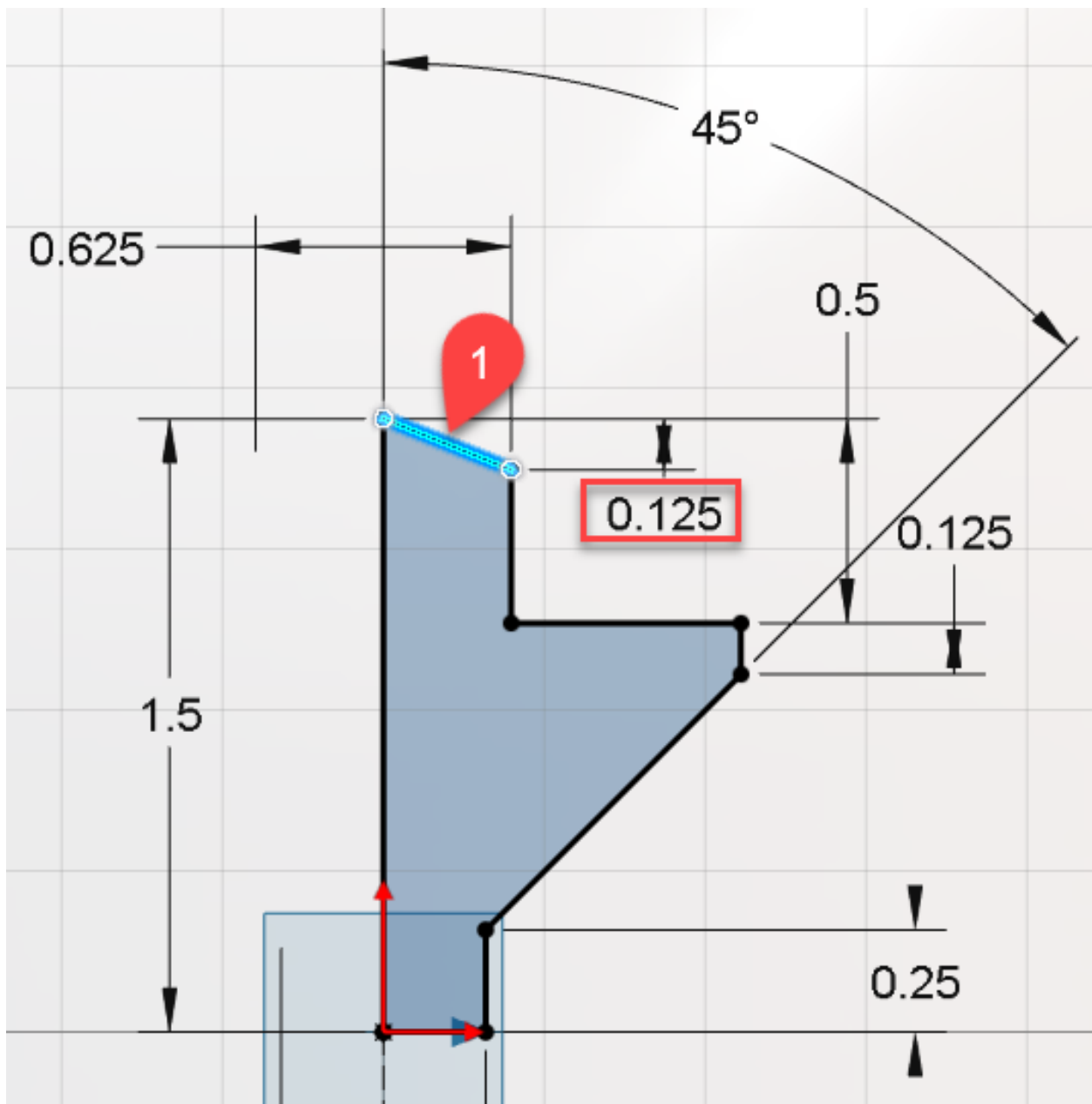


20. Create a diameter dimension between lines [1] and [2]. Enter a value of 0.625 in.





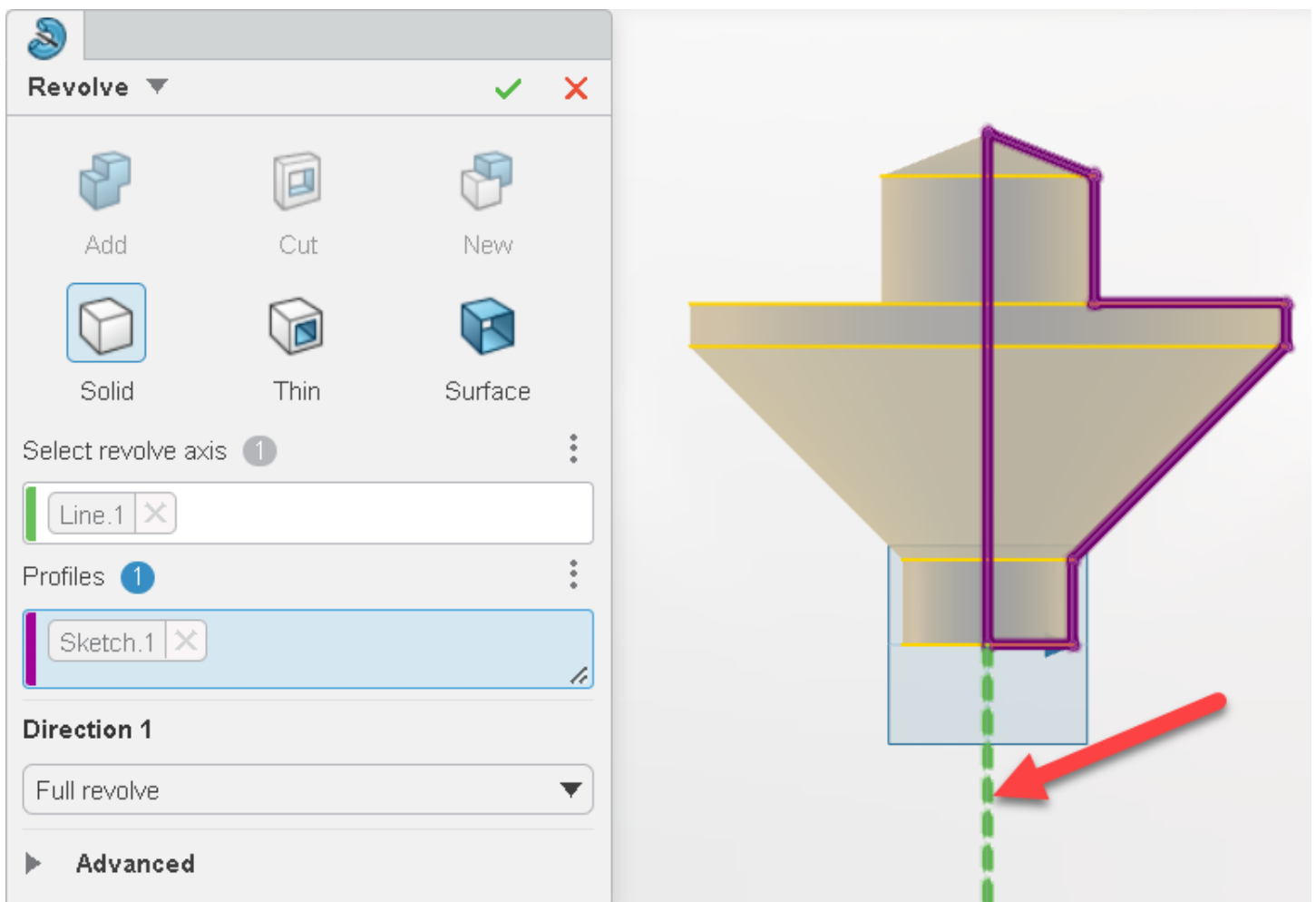
21. Select line [1] and move your mouse around the screen. Because the line is neither horizontal nor vertical, xDesign will offer either of those solutions as well as the actual length of the line depending on where you click to place the dimension. Place the dimension to define the vertical length of the line and enter a value of 0.125 in.



22. [1] Click the **Features** tab of the Action Bar and then click the “Revolve” command

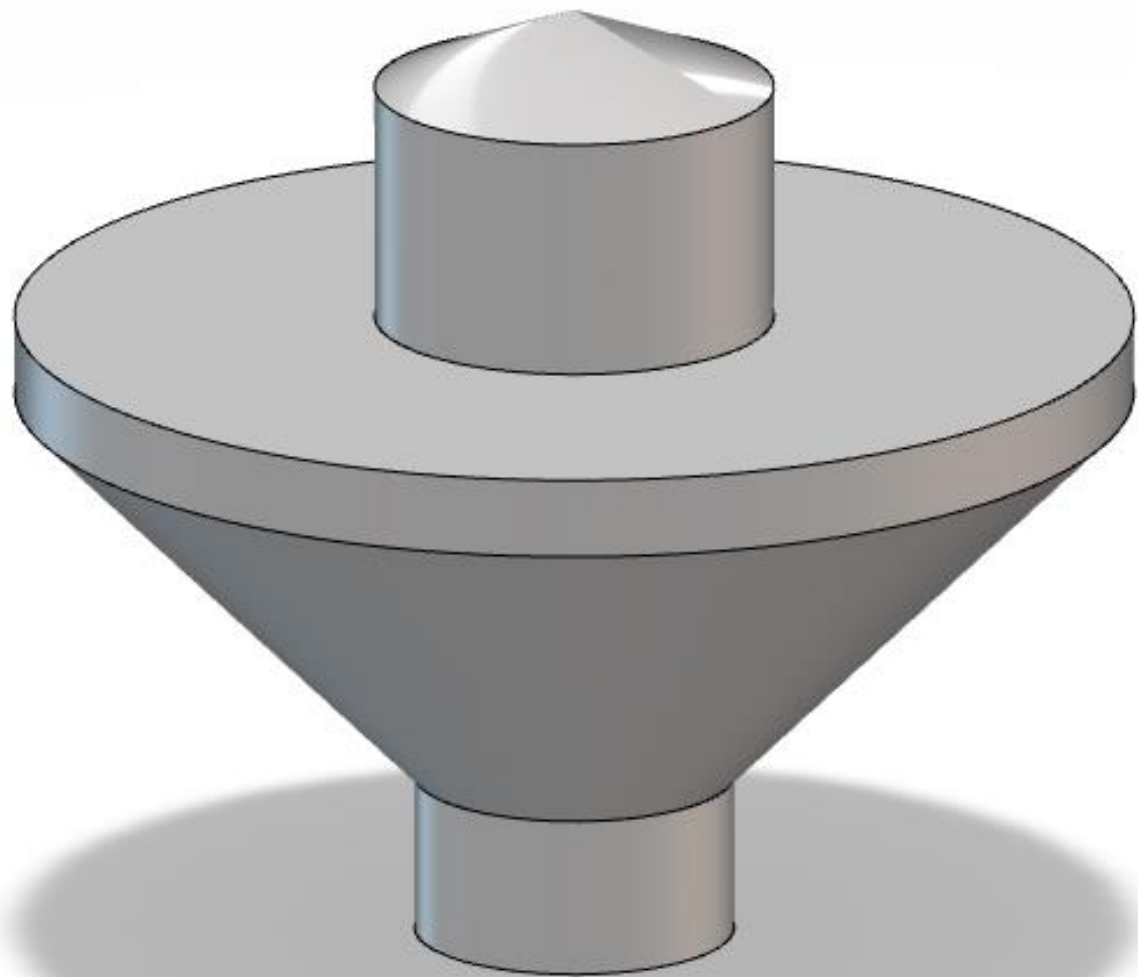


23. Select the dashed line the revolve axis

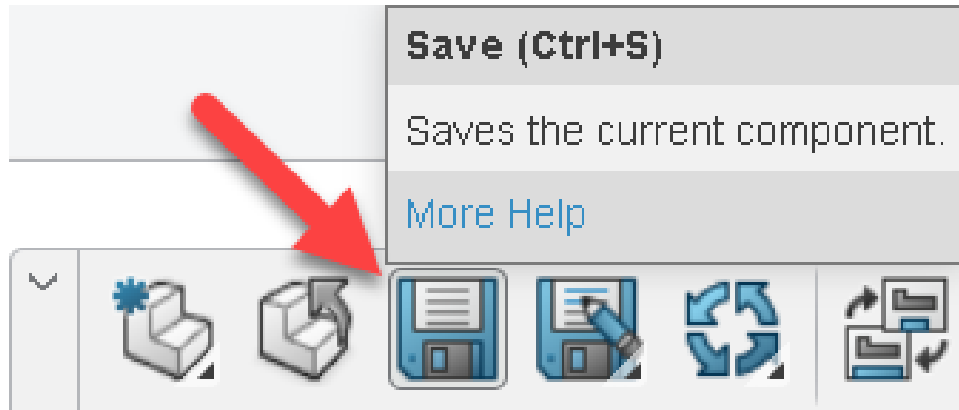


--- Sketch.1 should have prepopulated into the **Profiles** list (if it didn't you can select it from the Design Manager), and **Direction 1** should default to "Full Revolve".

24. Click the **OK** checkmark in the Revolve dialog to complete the command



25. Click “Save” on the Action Bar to save your custom spinning top



26. Double-click Sketch.1 and change any dimensions you'd like

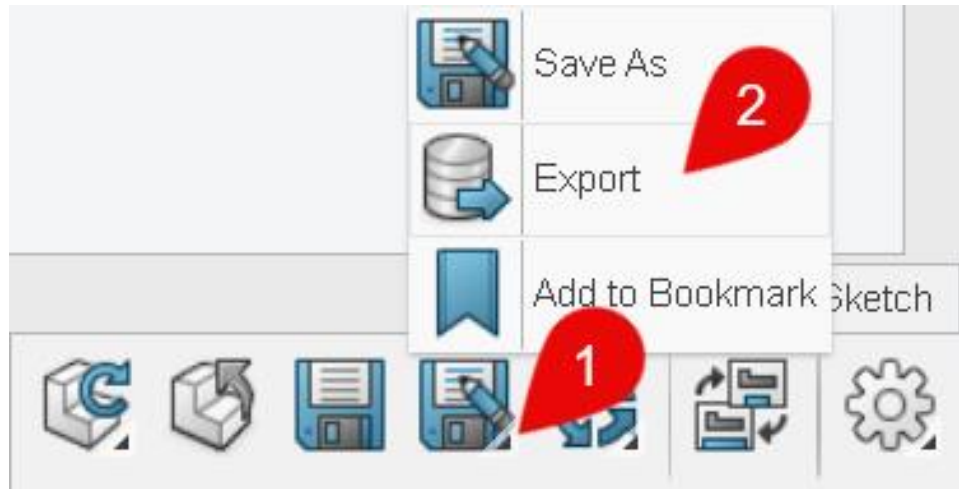
27. Click the “Accept Sketch” button to update your spinning top



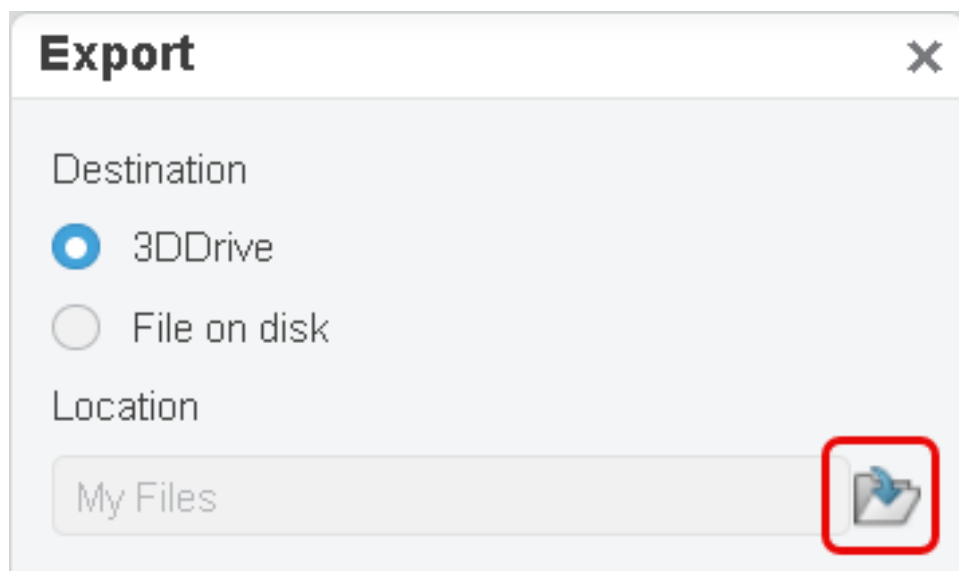
28. Remember to **Save** your design when you've finished making changes

## ***FABRICATE YOUR CUSTOM SPINNING TOP***

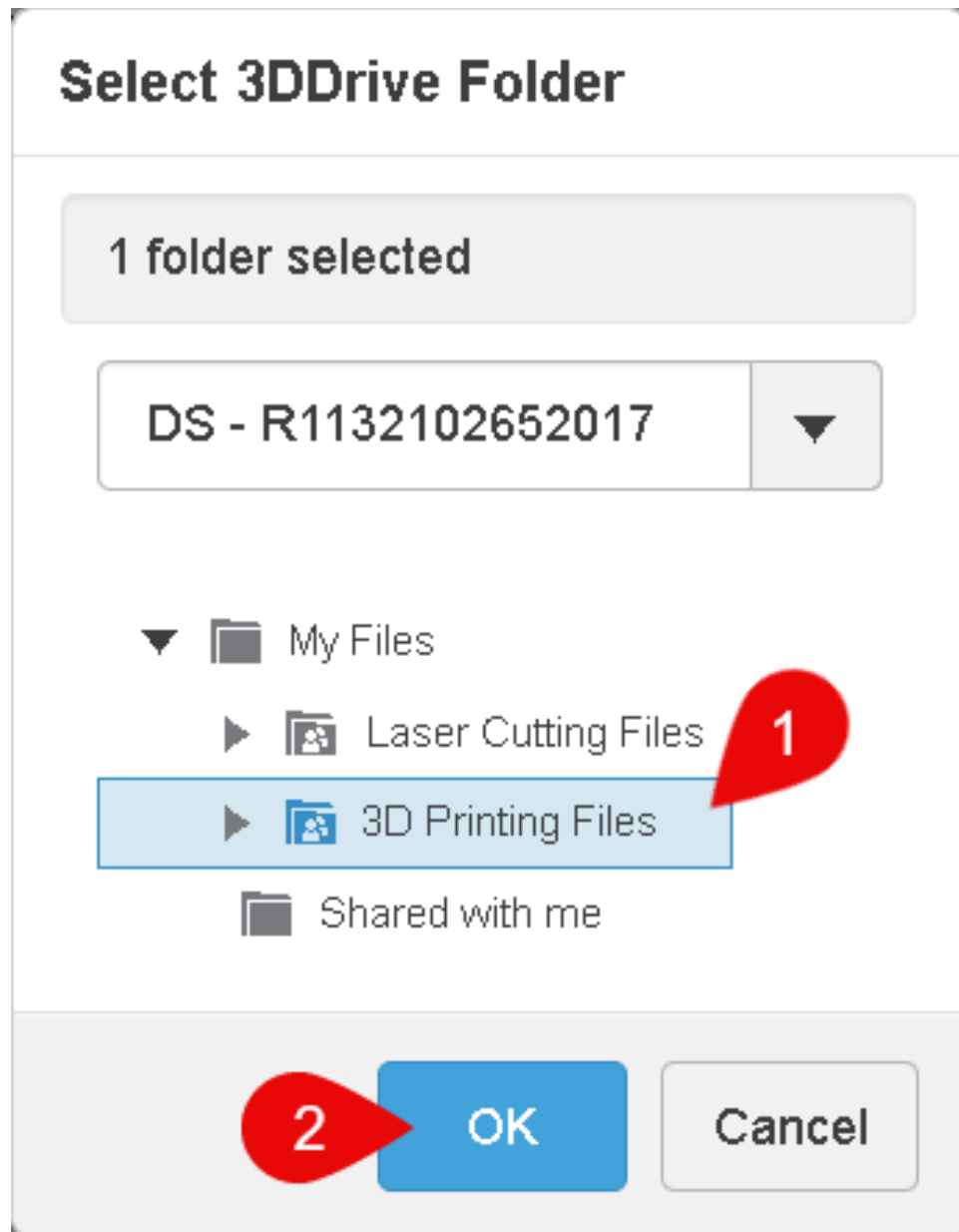
29. [1] Click the flyout corner under the Save As command on the Standard tab of the Action Bar, and then [2] click the **Export** command



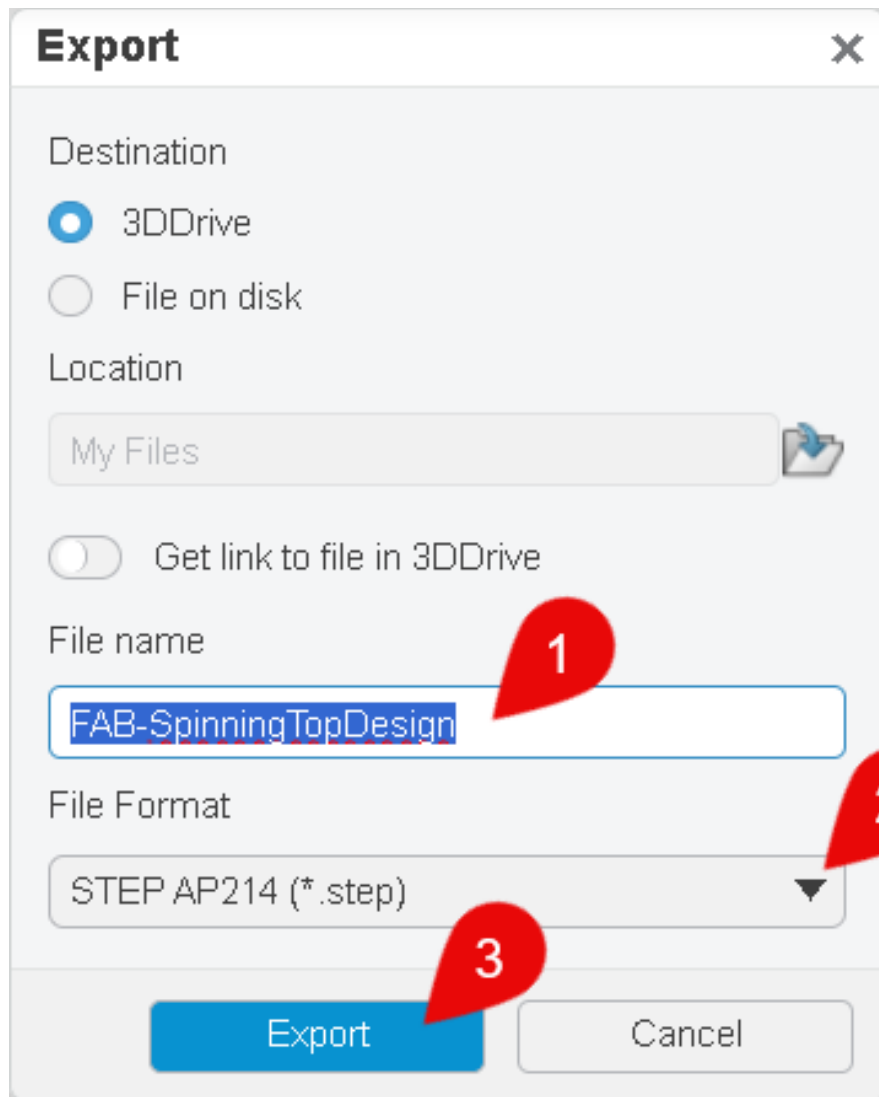
30. Click the Location folder button



31. [1] Select the folder your instructor told you to use to save your files, then [2] click **OK**



32. [1] Give the file a unique name, [2] change the format to “**STEP AP214**”, and then [3] click **Export**



Congratulations!

You're ready to 3D print your top!

See your teacher for further instruction!