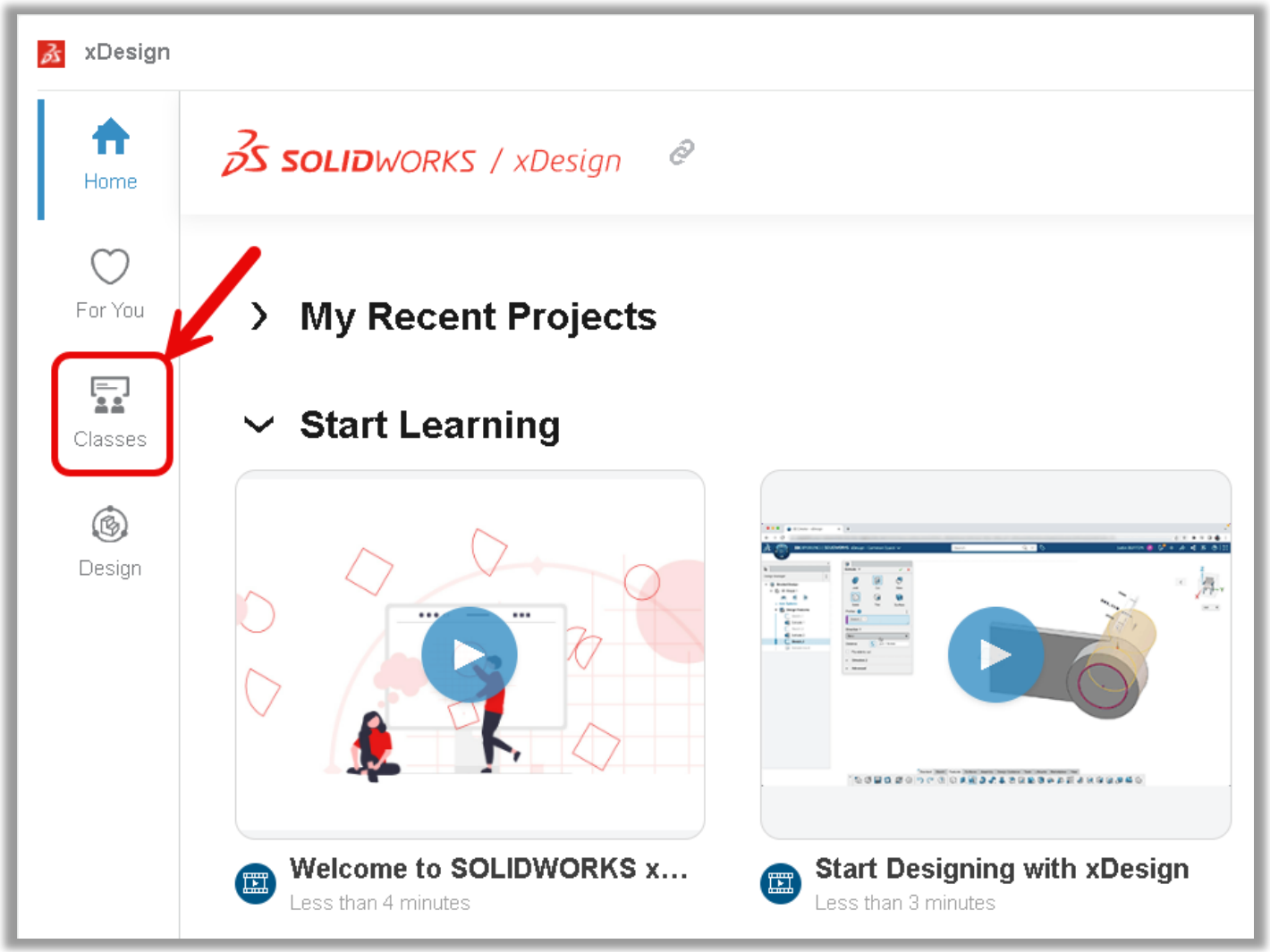
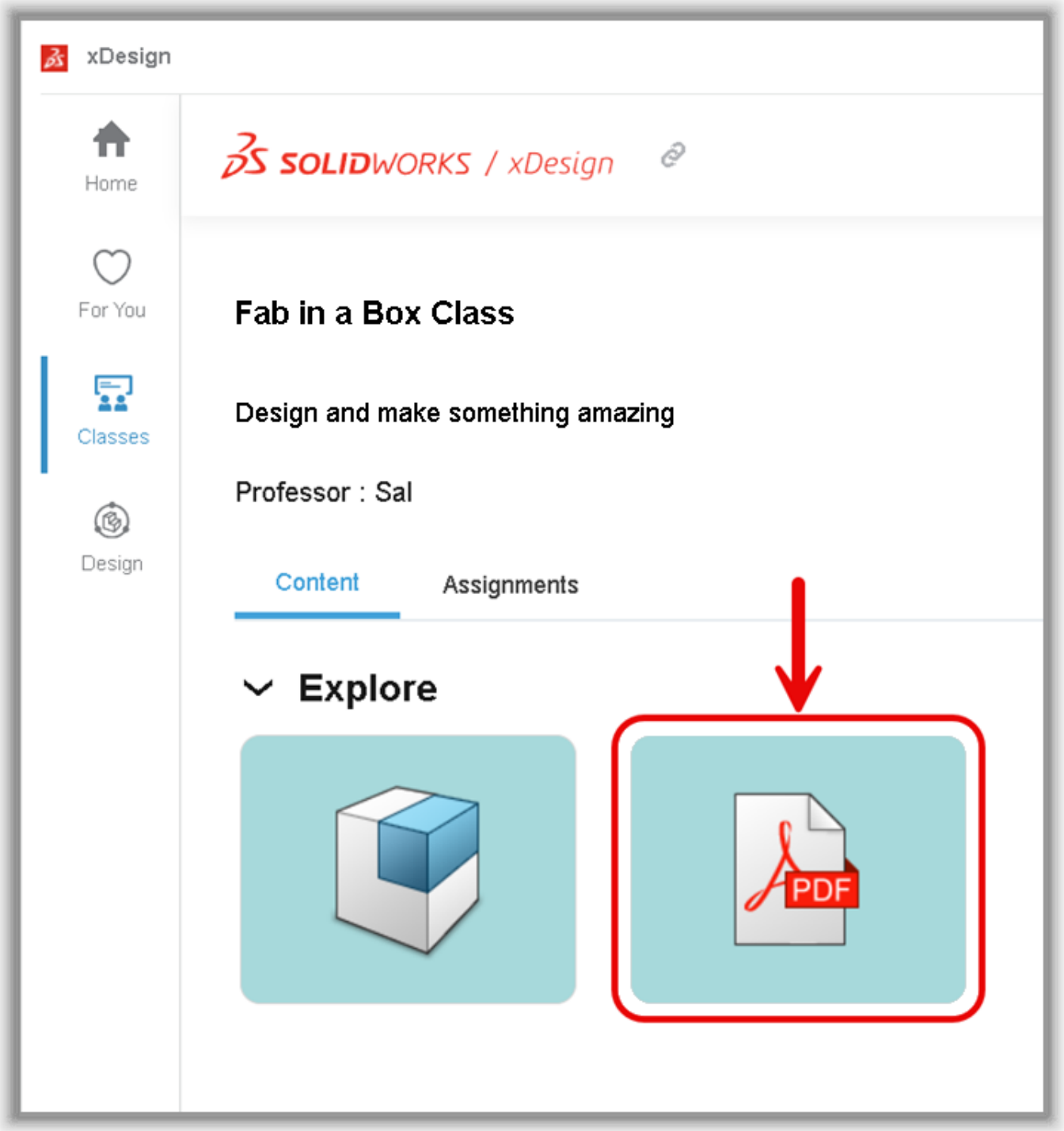
Design and fabricate your own custom mold.

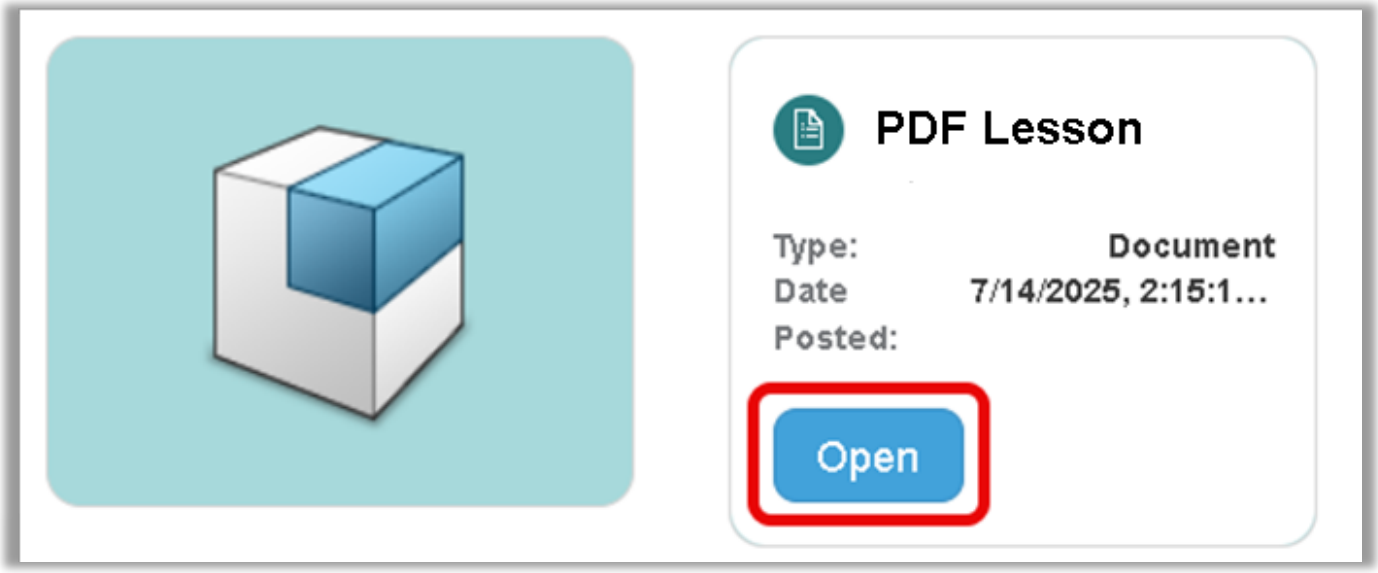
1. Click the **Classes** tab



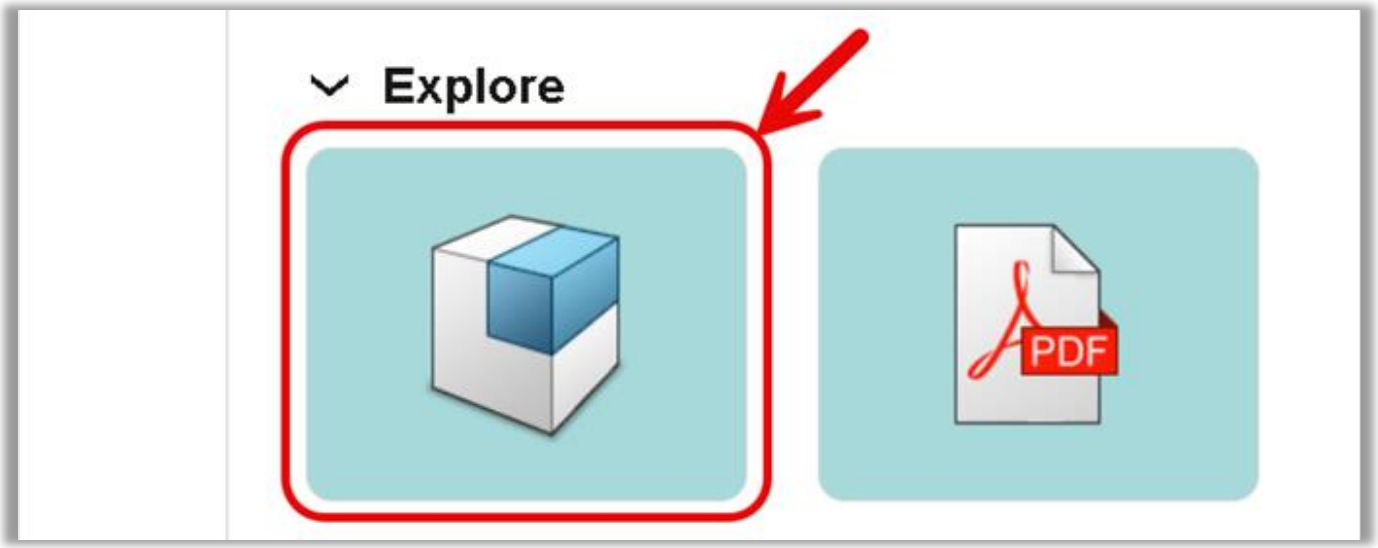
2. Hover over the PDF tile



3. Click **OPEN**



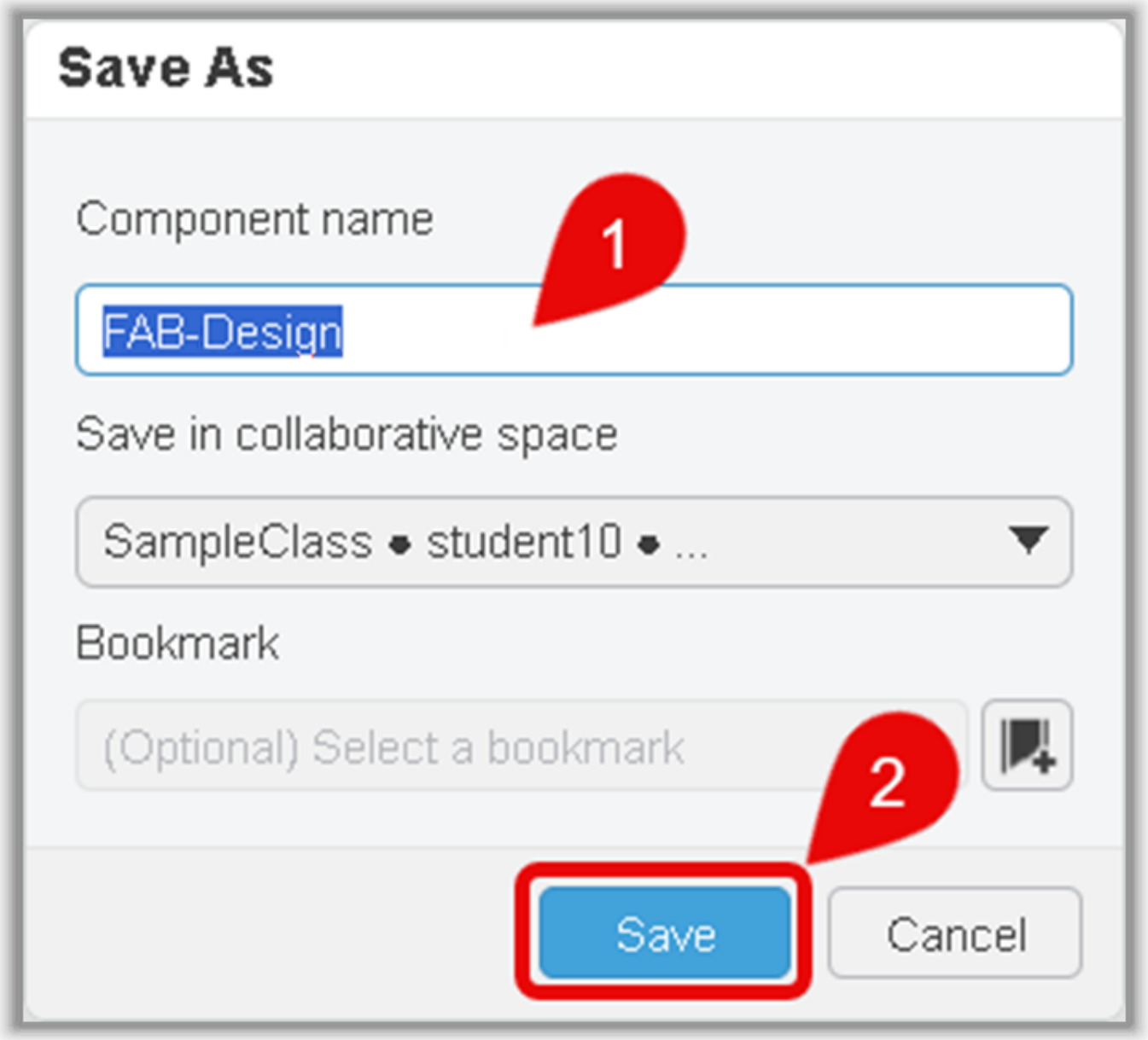
4. Hover over the "**Mold and Cast – Deep Dive"** tile



5. Click **OPEN**

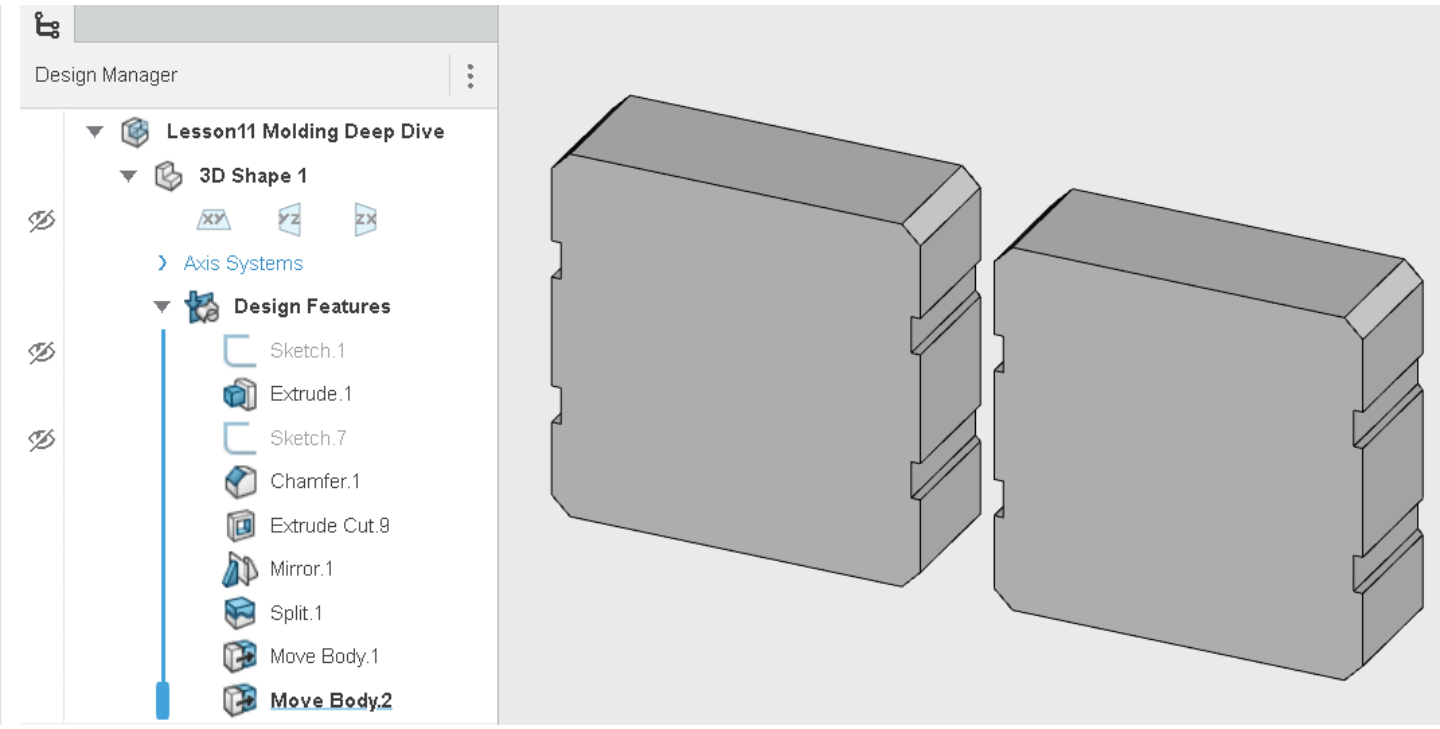
6. Click **Save As** on the Standard tab of the Action Bar

7. [1] Type a name for your design, then [2] click **Save**

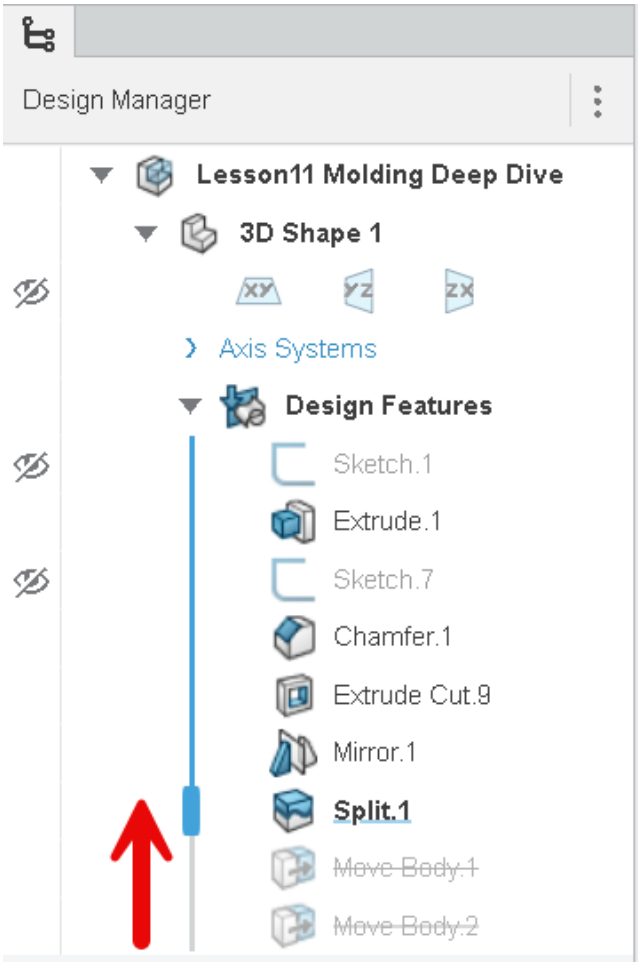


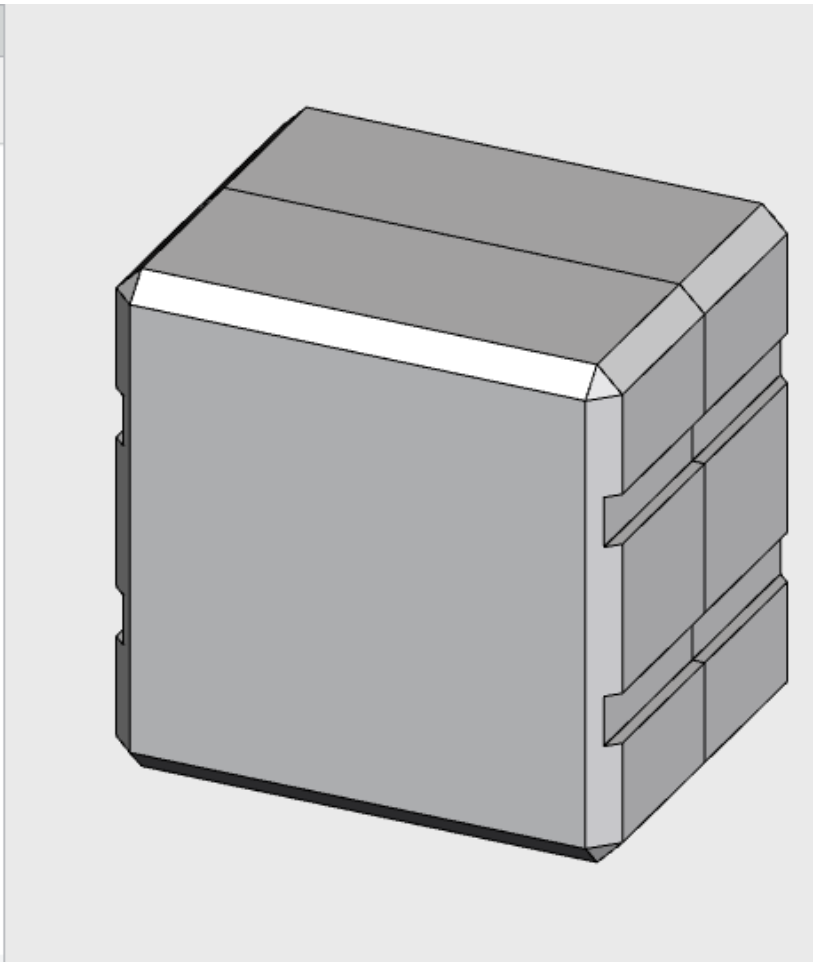
***Notice that a two-part mold has been started for you… Now it's up to you to design guide pins, a cavity, and a sprue for your mold.

B

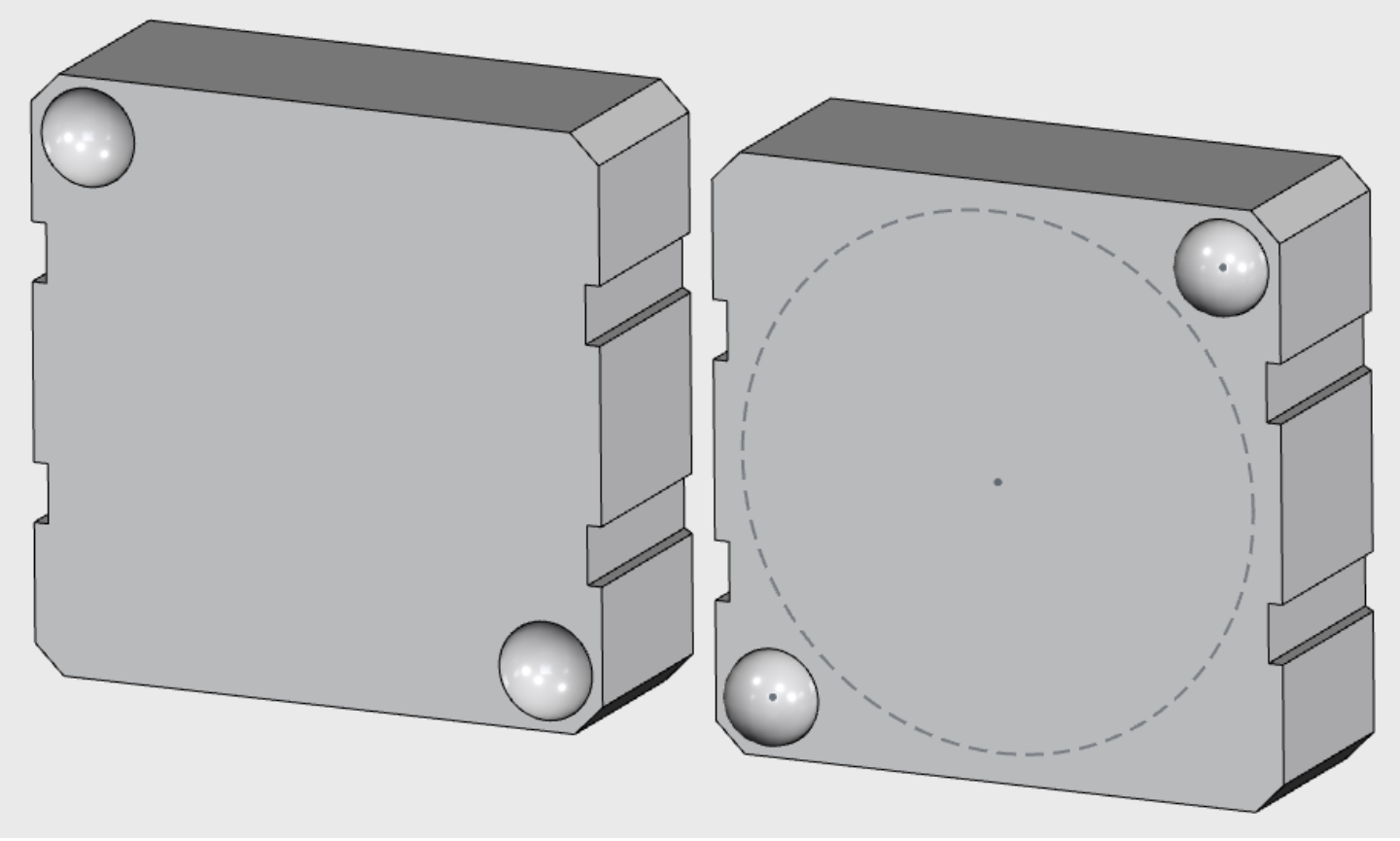


***IMPORTANT - Remember to do all of your work before the two “Move Body” features in the Design Manager. Just drag the blue rollback bar up the Design Manager and drop it just above the Move Body.1 feature. This will bring the mold halves back together.





***Guide pins can be just about any shape and can be positioned where ever they make most sense for your design. Be sure to add a 0.005” clearance between the pins and the holes so the mold can easily open and close. If you’d like to design guide pins like these, or if you need a bit of help, refer to the “Mold and Cast Explore” lesson.



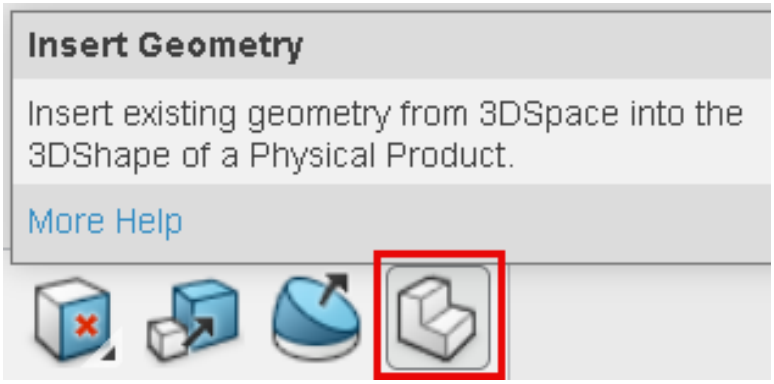
***Your cavity can be just about any shape, and it can be designed using any number of features. Just be sure to avoid undercuts so your part can easily be removed from the mold. If you need help designing your cavity, check out the quick how-to videos or refer to the Mold and Cast Explore" lesson.

***Alternatively, you can insert another model into the mold design and subtract it from your mold. Here's how:

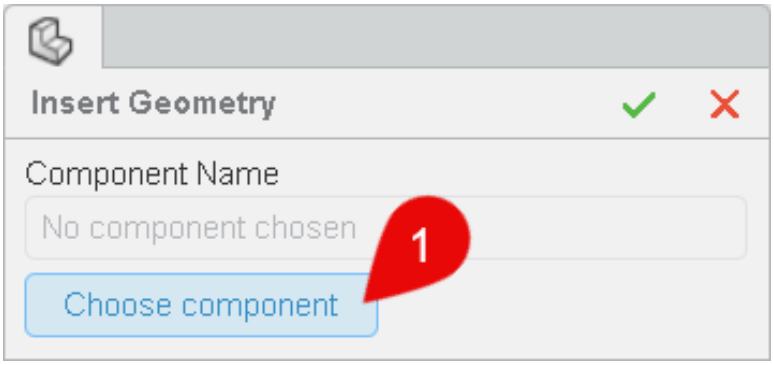
8. Drag the rollback bar to the bottom of the Design Manager

***NOTE: This will spread the two halves of the mold apart. Technically this is not where we want to add our inserted geometry, but it will make it easier to see and select it, so we'll proceed this way for now and deal with reordering things later)

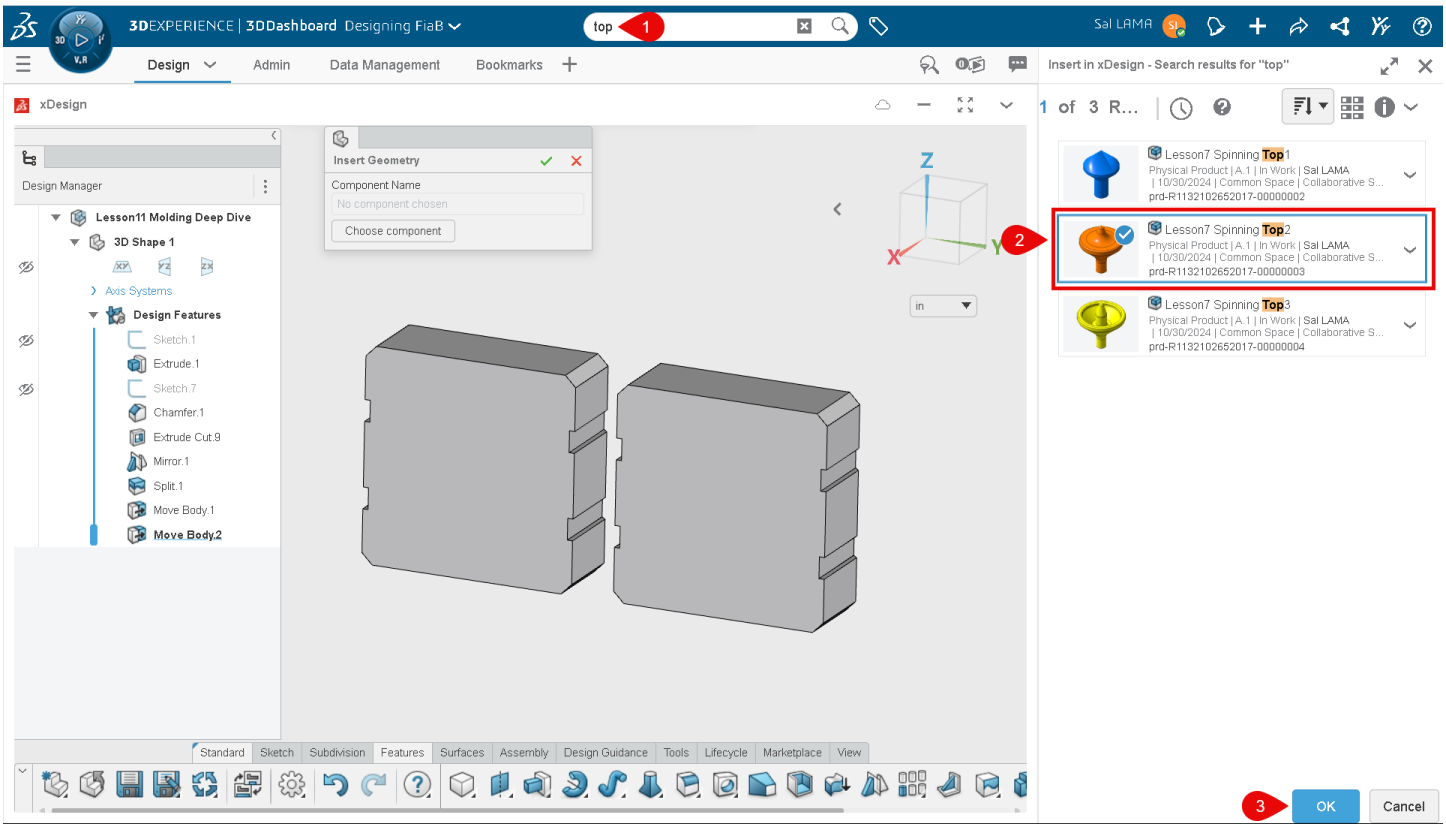
9. Click the **Insert Geometry** command on the Features tab of the Action Bar



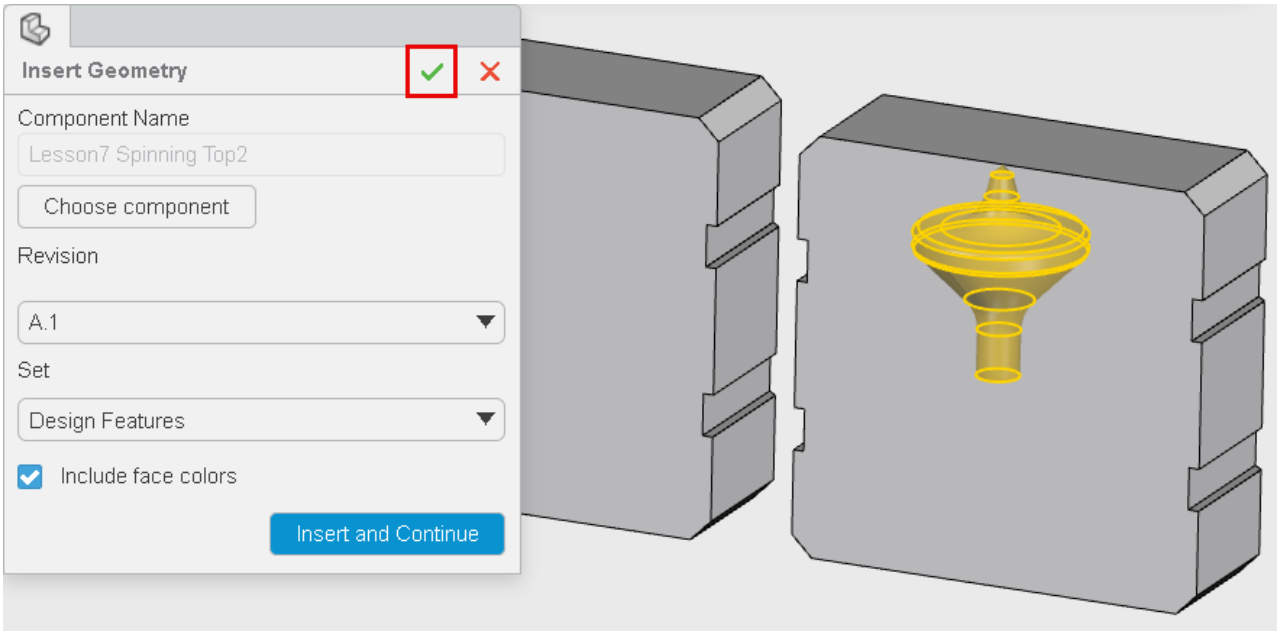
10. Click “Choose component”



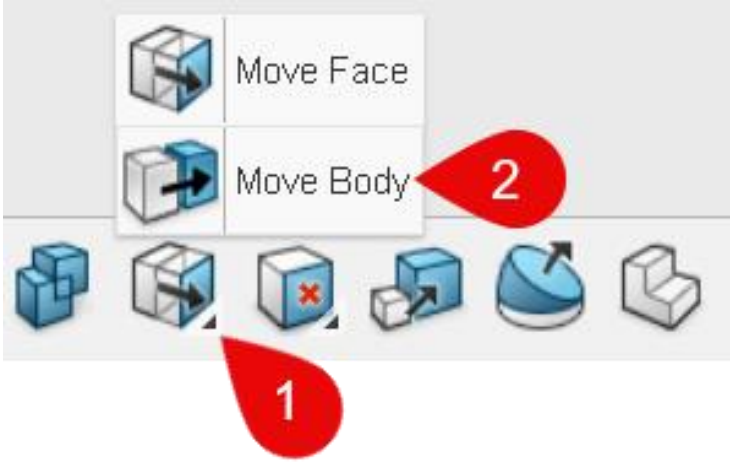
11. [1] Type “top” in the search bar and press enter, [2] select the “Spinning Top2” tile, [3] click OK



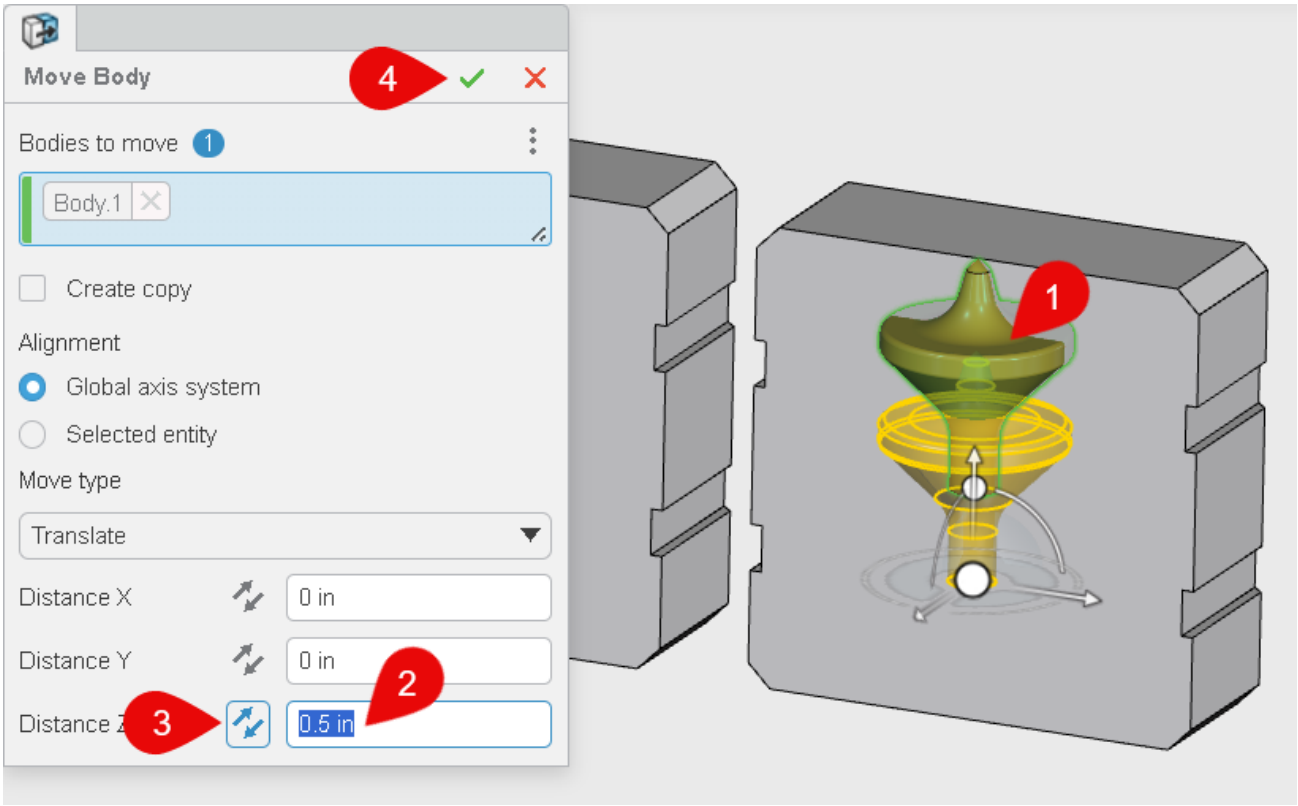
12. Click **OK** to place the geometry at the origin of the mold



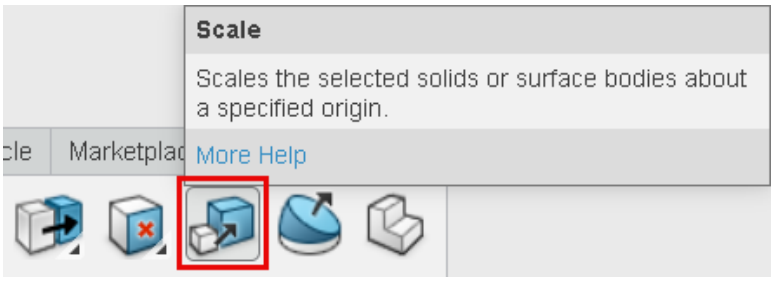
13. [1] Click the expander under the Move Face command and then [2] click the **Move Body** command



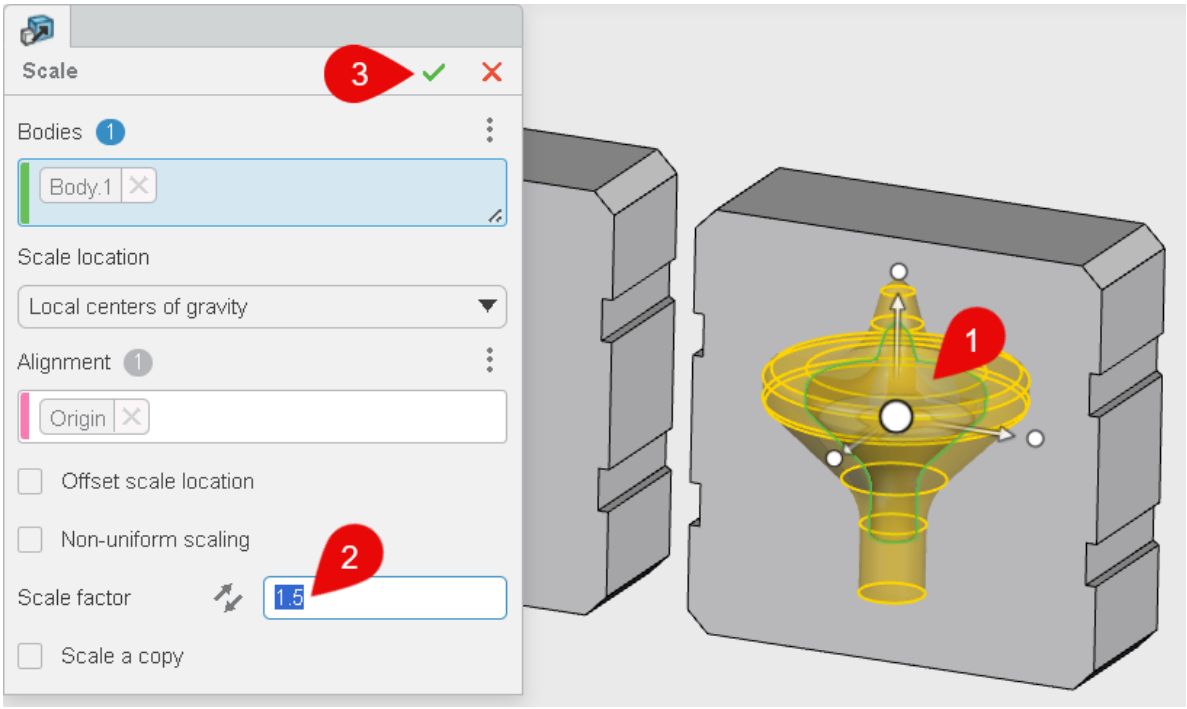
14. [1] Select the inserted spinning top body, [2] type a Z distance of 0.5 in, [3] Click the reverse direction button (making sure the preview is moving downward, [4] Click OK



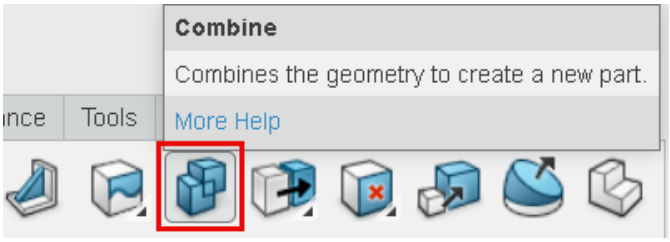
15. Click the **Scale** command on the Features tab of the Action Bar



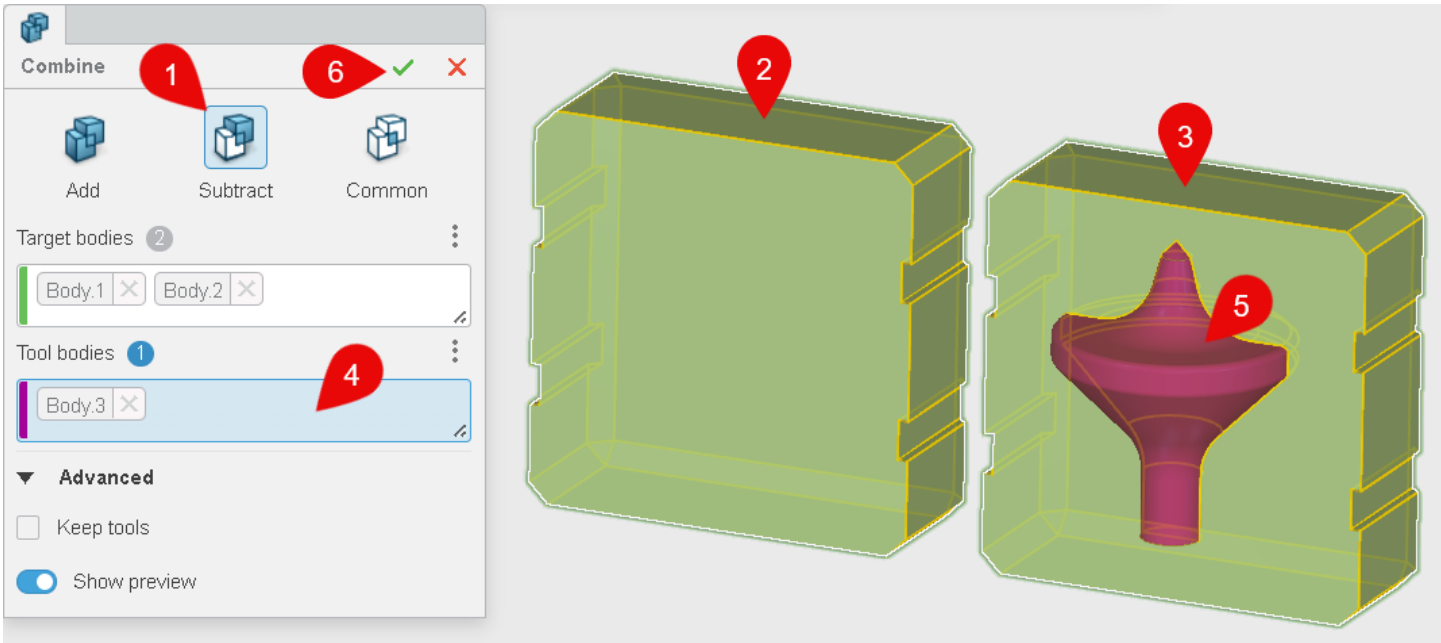
16. [1] Select the inserted spinning top body, [2] type a scale factor of 1.5, [3] Click OK



17. Click the **Combine** command on the Features tab of the Action Bar

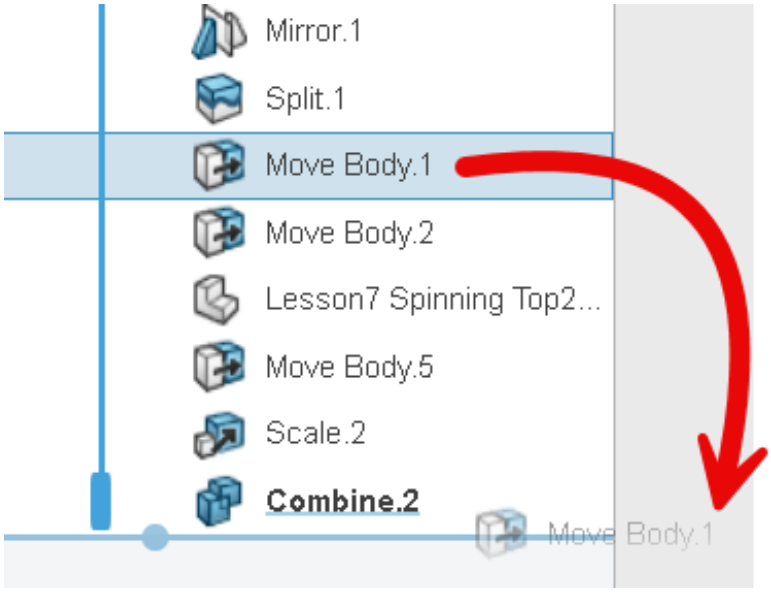


18. [1] Click the “Subtract” button, [2] Select the left half of the mold, [3] Select the right half of the mold, [4] Click in the “Tool bodies” selection box to give it focus (it will turn blue to let you know that your next selection will go into there), [5] Select the inserted spinning top body, [6] Click OK

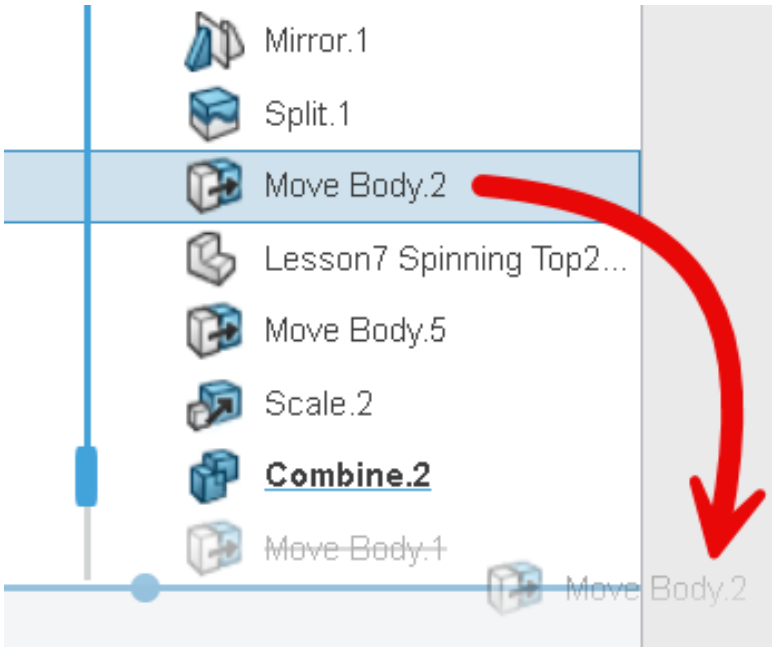


***Notice that the spinning top geometry has only been subtracted from the right side of the mold, even though we told it to subtract from the left side as well. This is because in its current position, the spinning top geometry doesn’t touch the left half of the mold. Let’s make some changes now to fix that.

19. Drag the Move Body.1 feature to the bottom of the Design Manager. Drop it when you see the blue bar indicating where it will be placed.

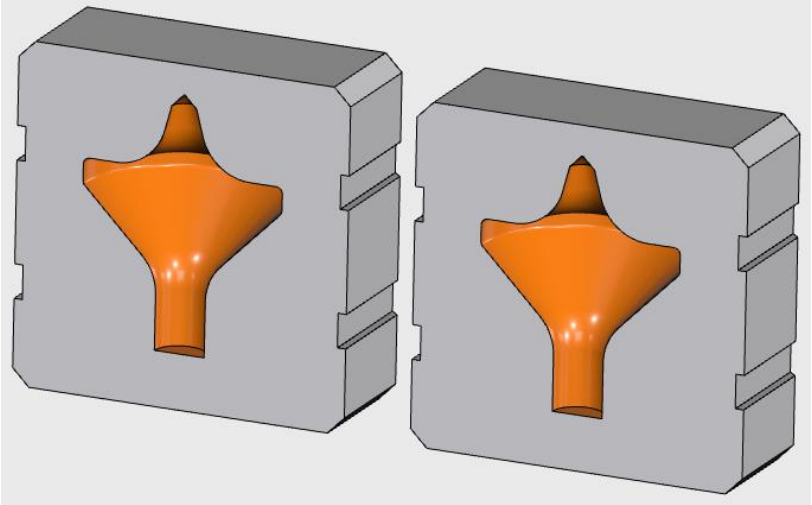


20. Drag the Move Body.2 feature to the bottom of the Design Manager. Again, drop it when you see the blue bar indicating where it will be placed.



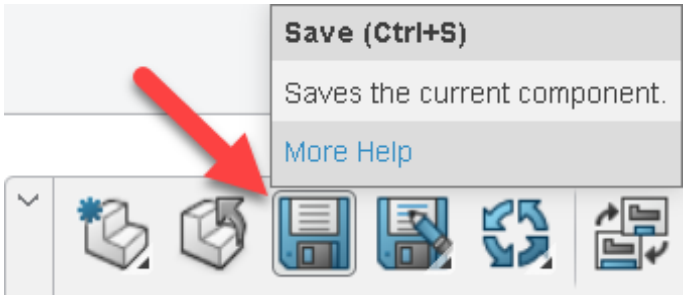
21. Drag the rollback bar all the way to the bottom of the Design Manager

    ***Notice that the spinning top has now been subtracted from both halves of the mold



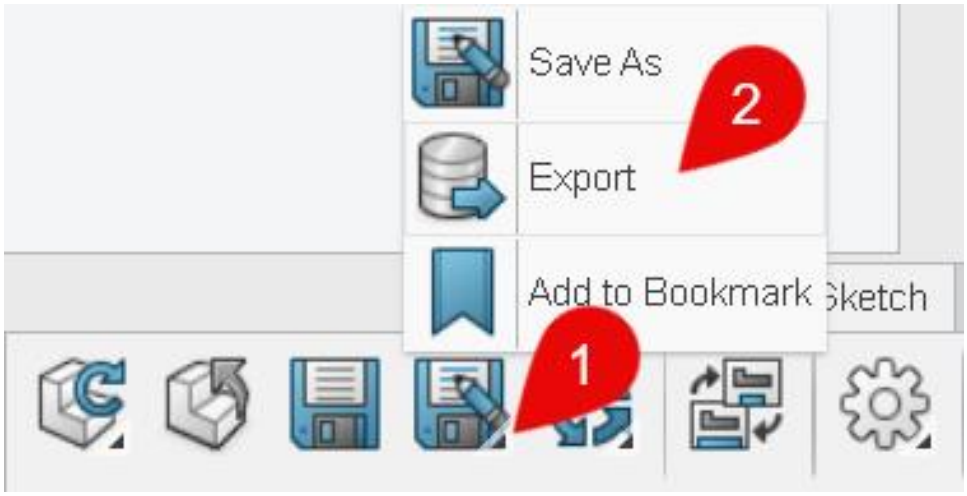
22. Finish your mold design by adding a sprue. A simple cylindrical cut (from the bottom of the mold) would be perfect. If you need a bit of help, refer to the "Mold and Cast Explore" lesson.

23. Click "Save" on the Action Bar to save your custom mold

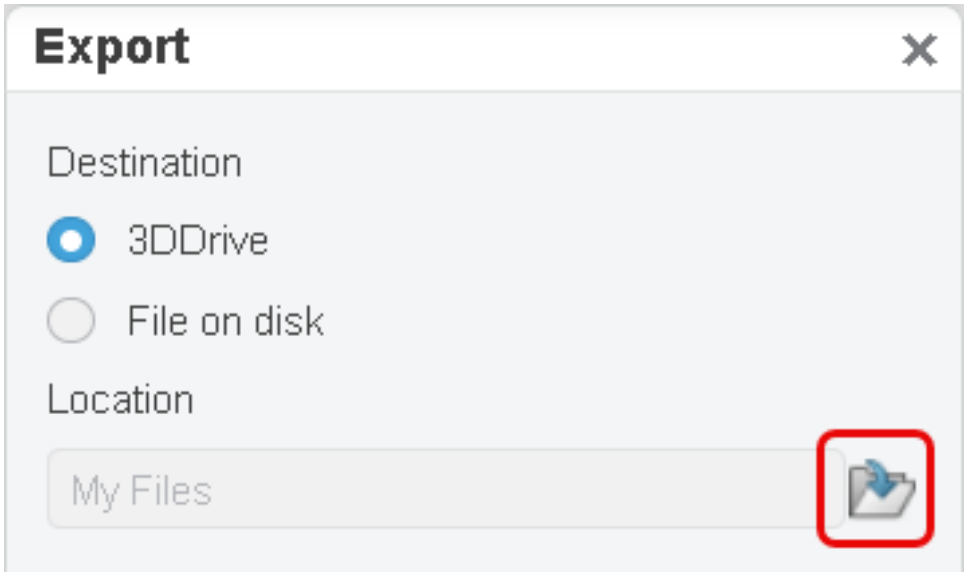


FABRICATE YOUR MOLD

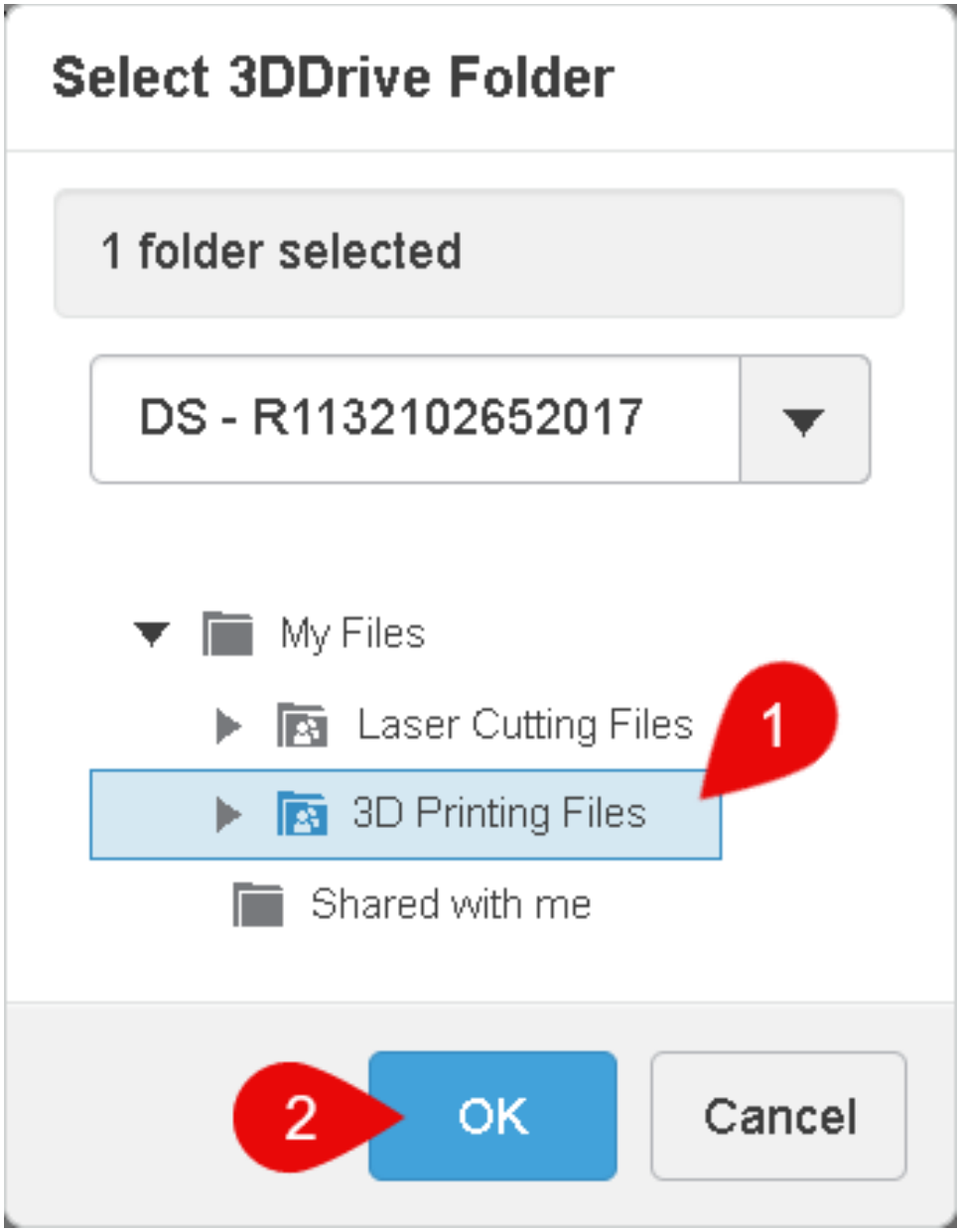
24. [1] Click the flyout corner under the Save As command on the Standard tab of the Action Bar, and then [2] click the **Export** command



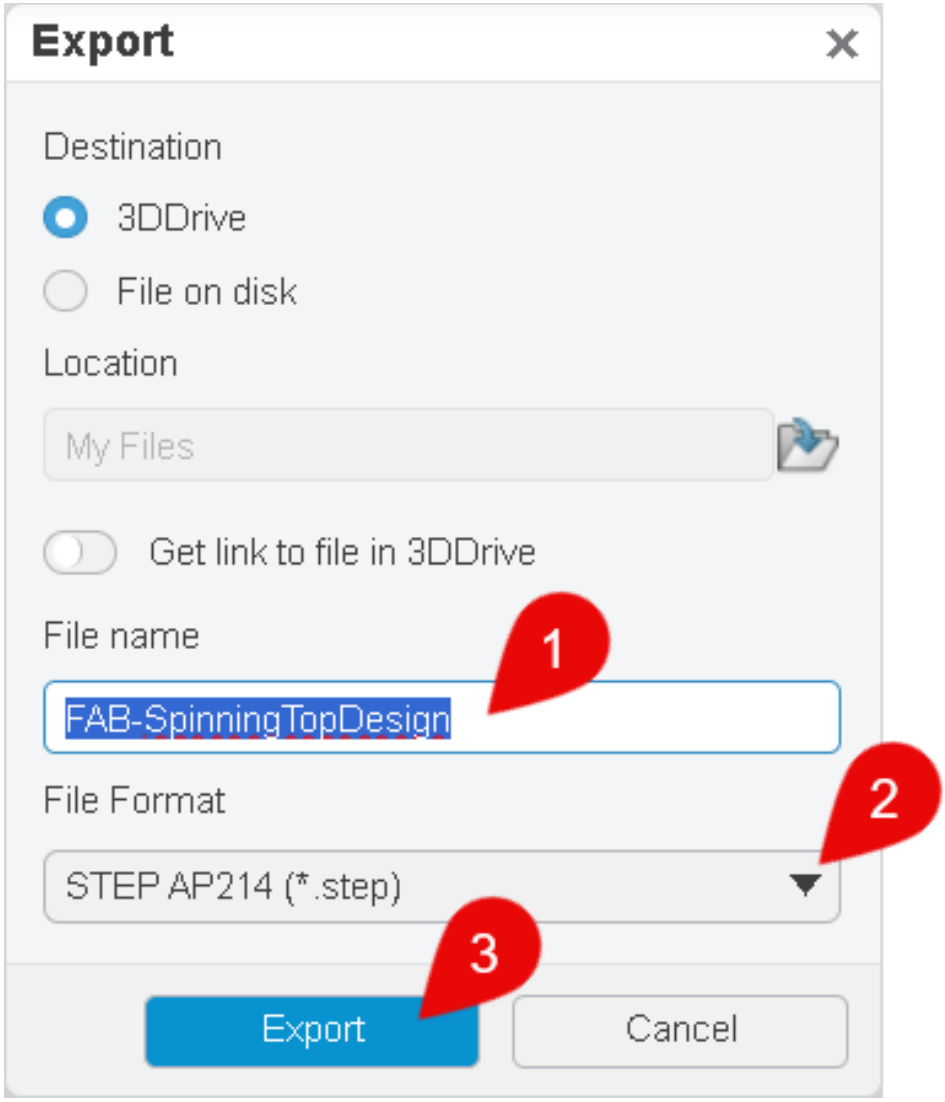
25. Click the Location folder button



26. [1] Select the folder your instructor told you to use to save your files, then [2] click **OK**



27. [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 mold!

See your teacher for further instruction!