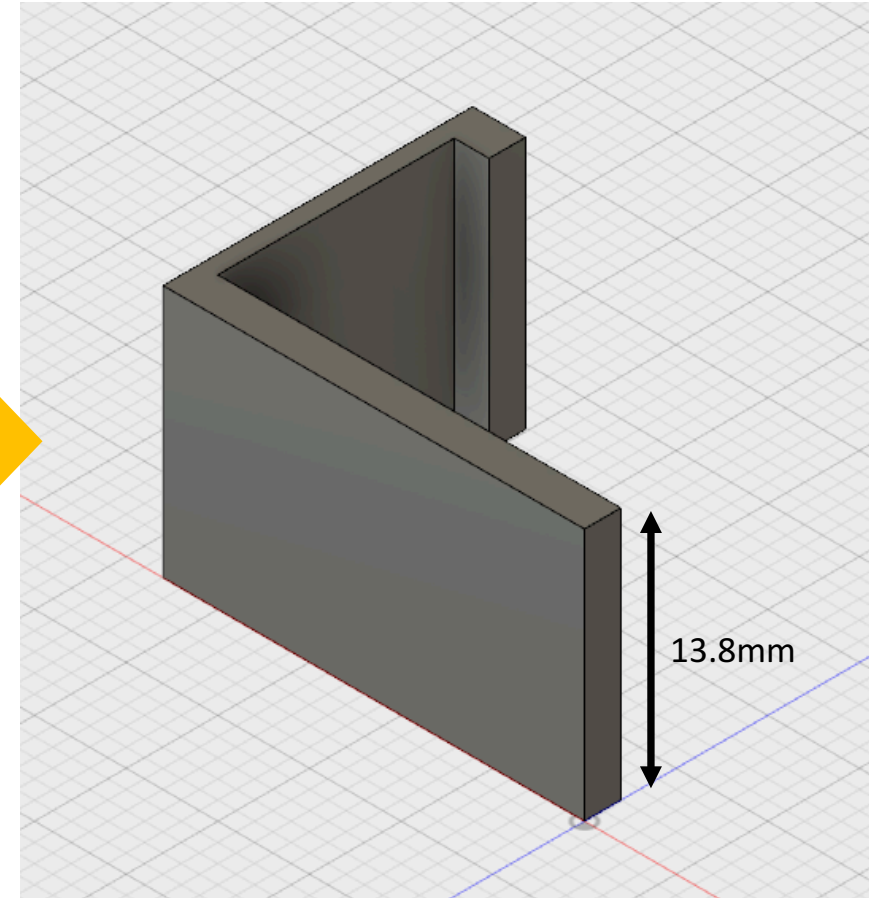
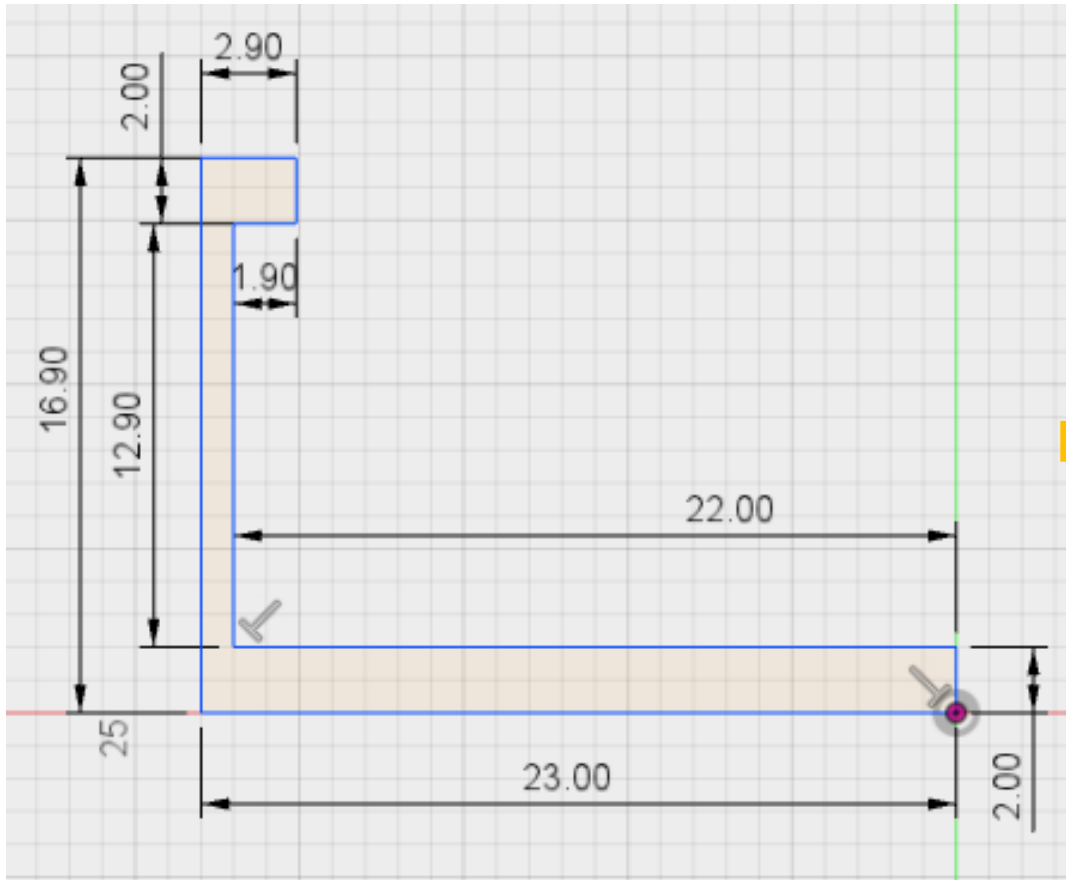


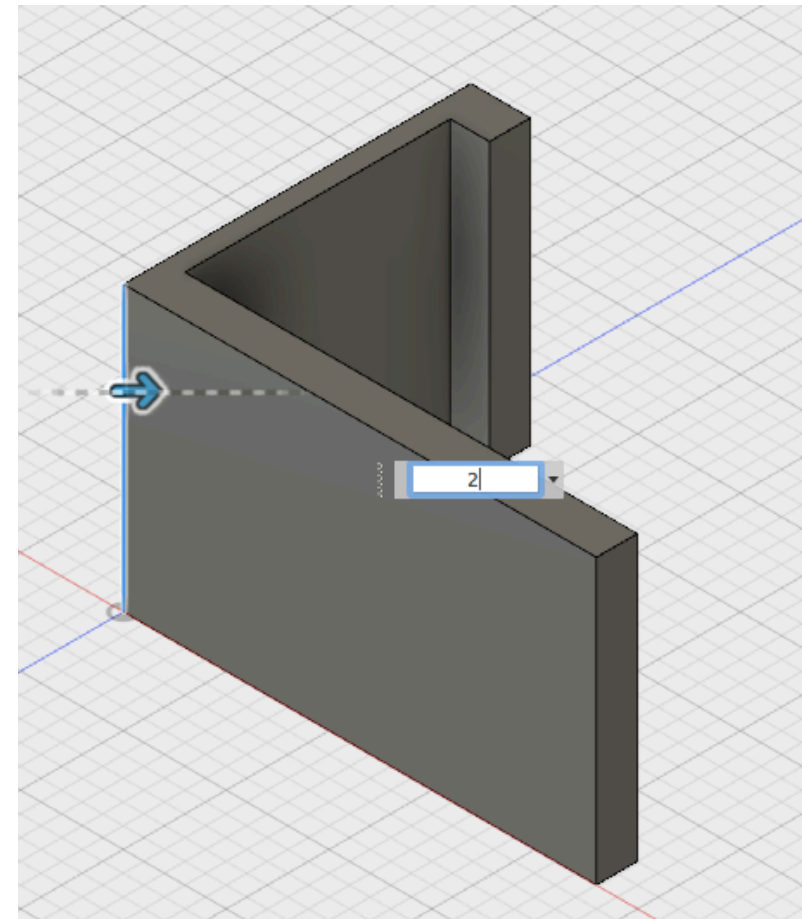
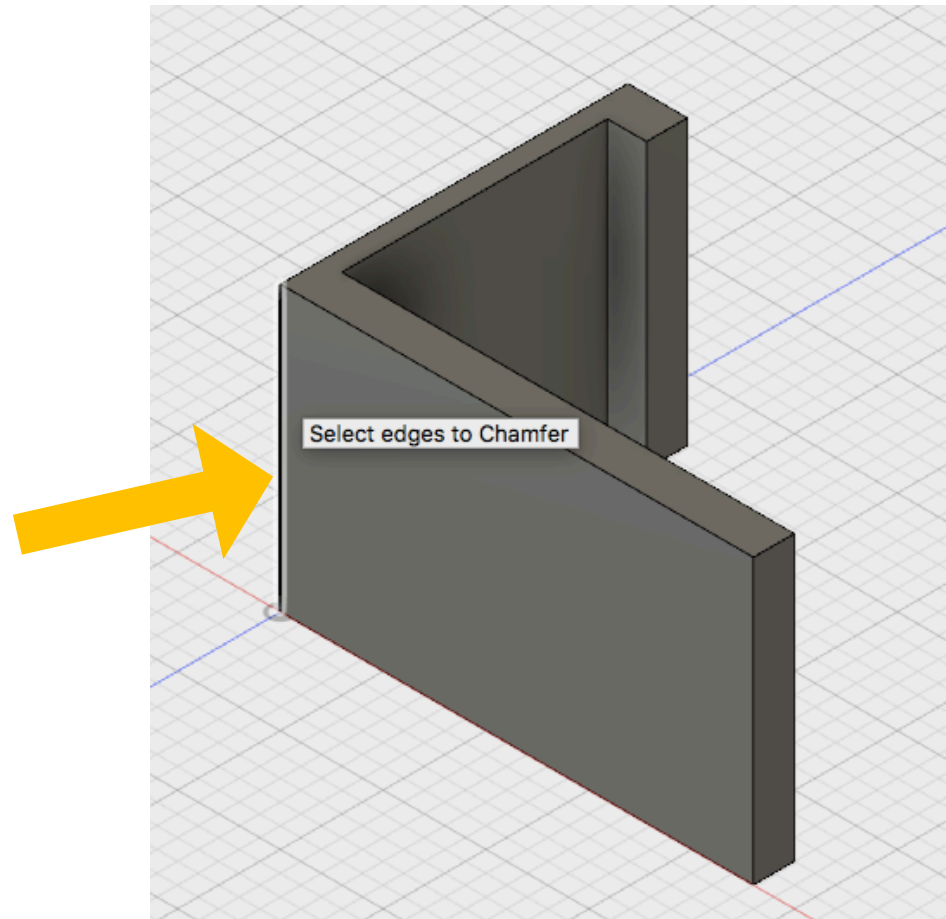
# Lesson 7

The Batman Clip

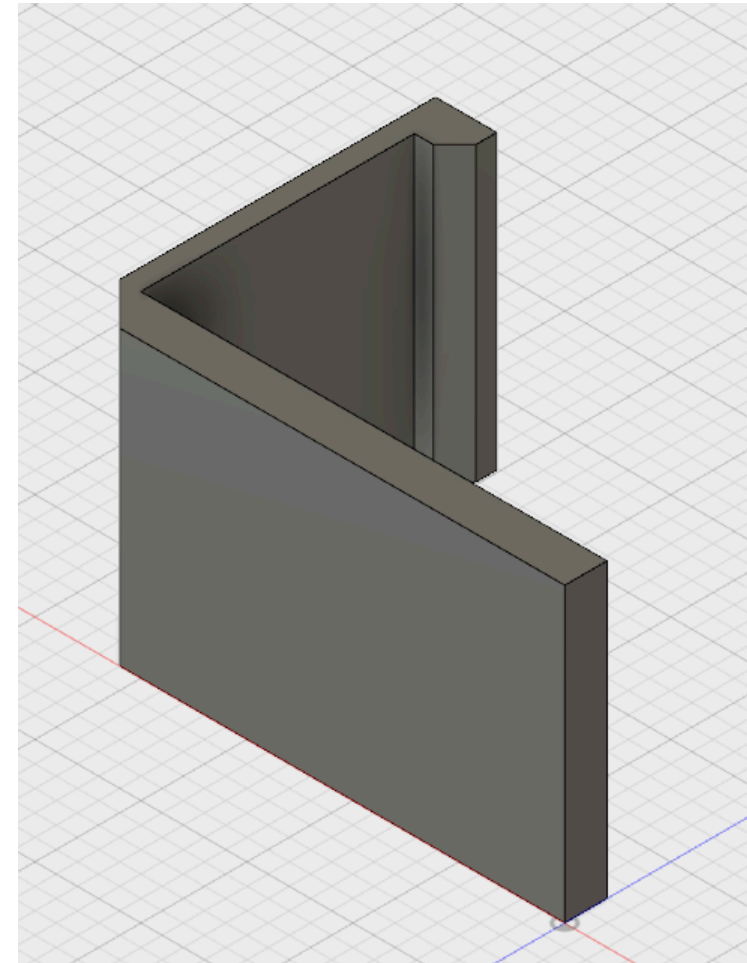
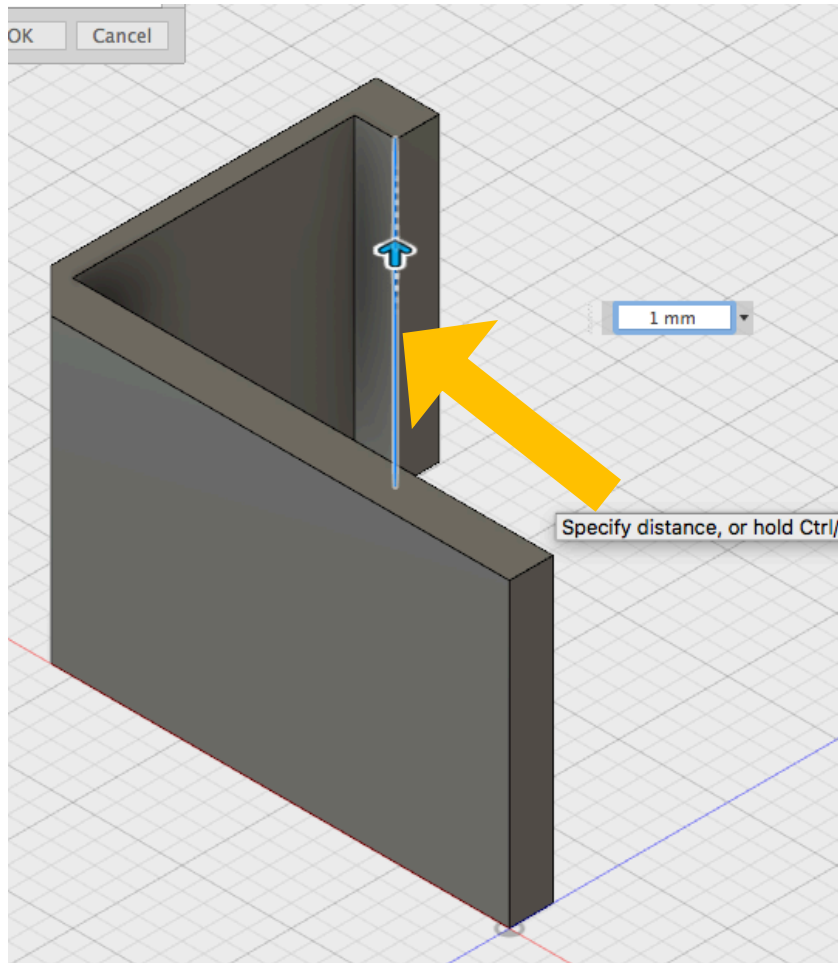
Step 1: Draw a 3D object as shown below.



Step 2: Next, go to “Modify” > “Chamfer”. Select the edge pointed out below, key in 2mm.

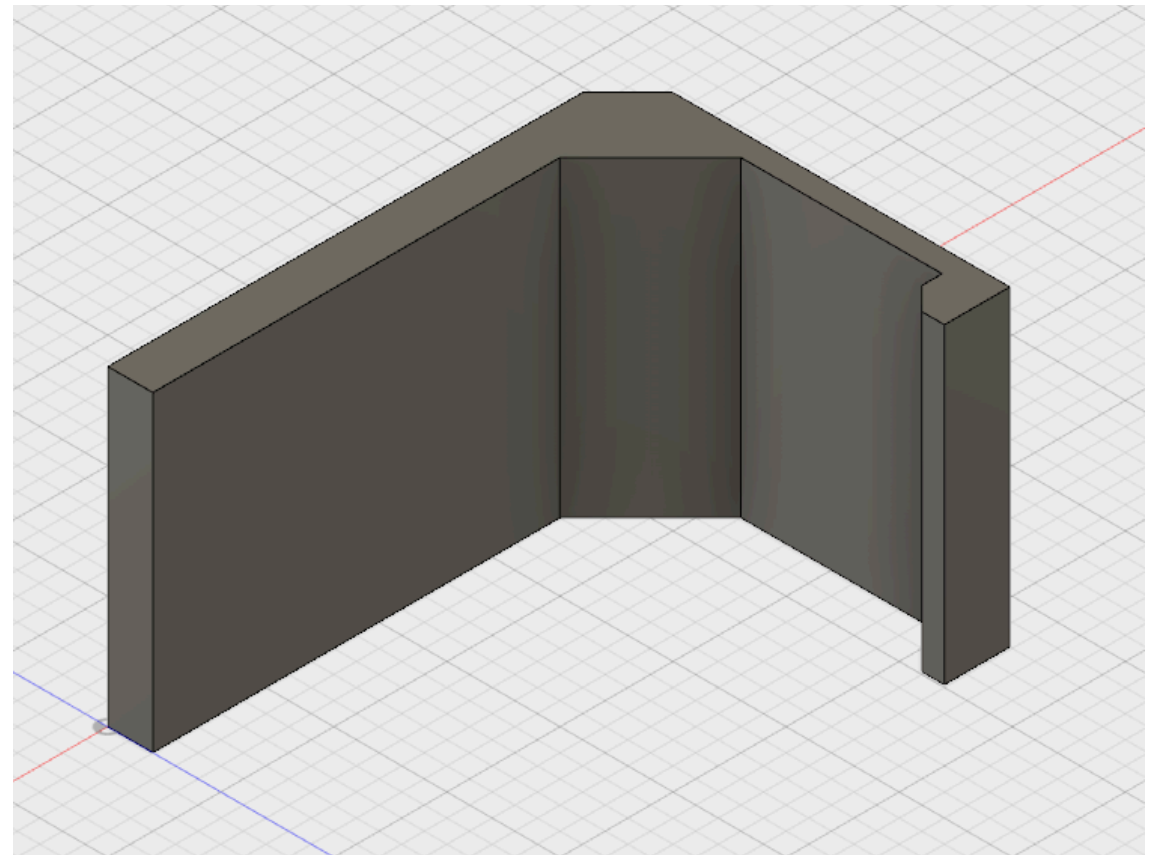
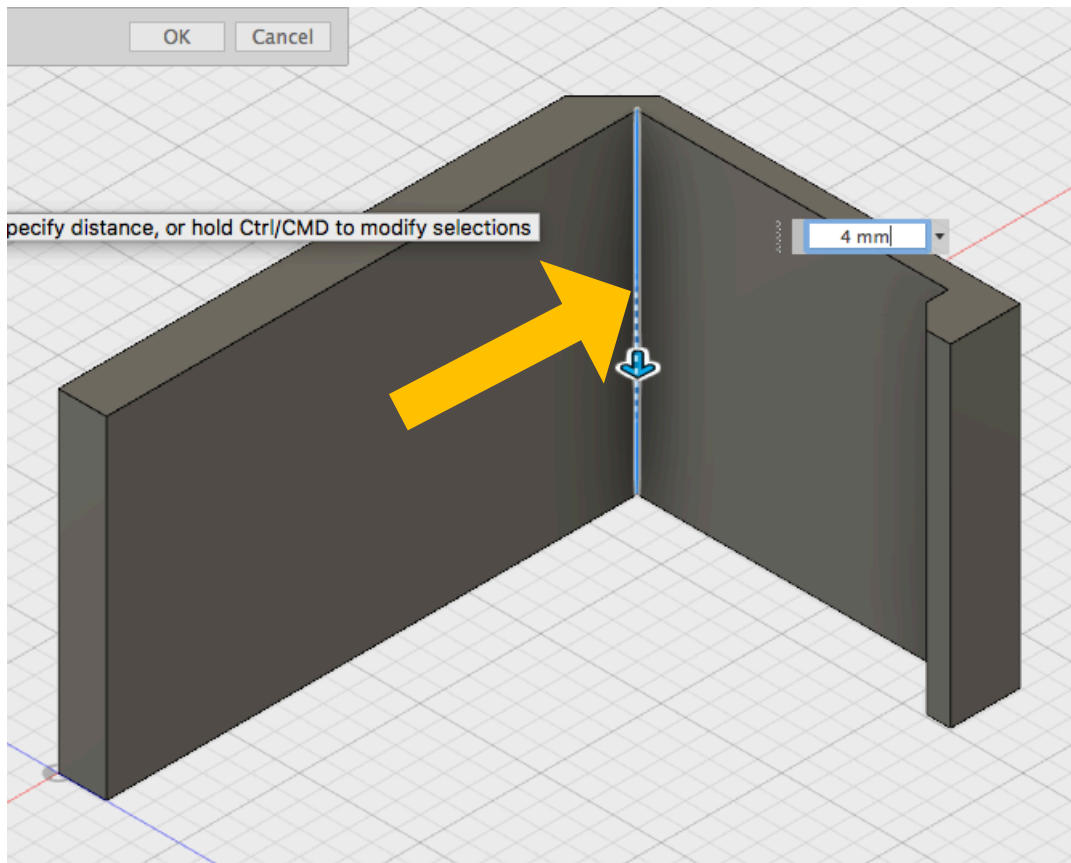


Step 3: Next, chamfer this edge by 1mm.

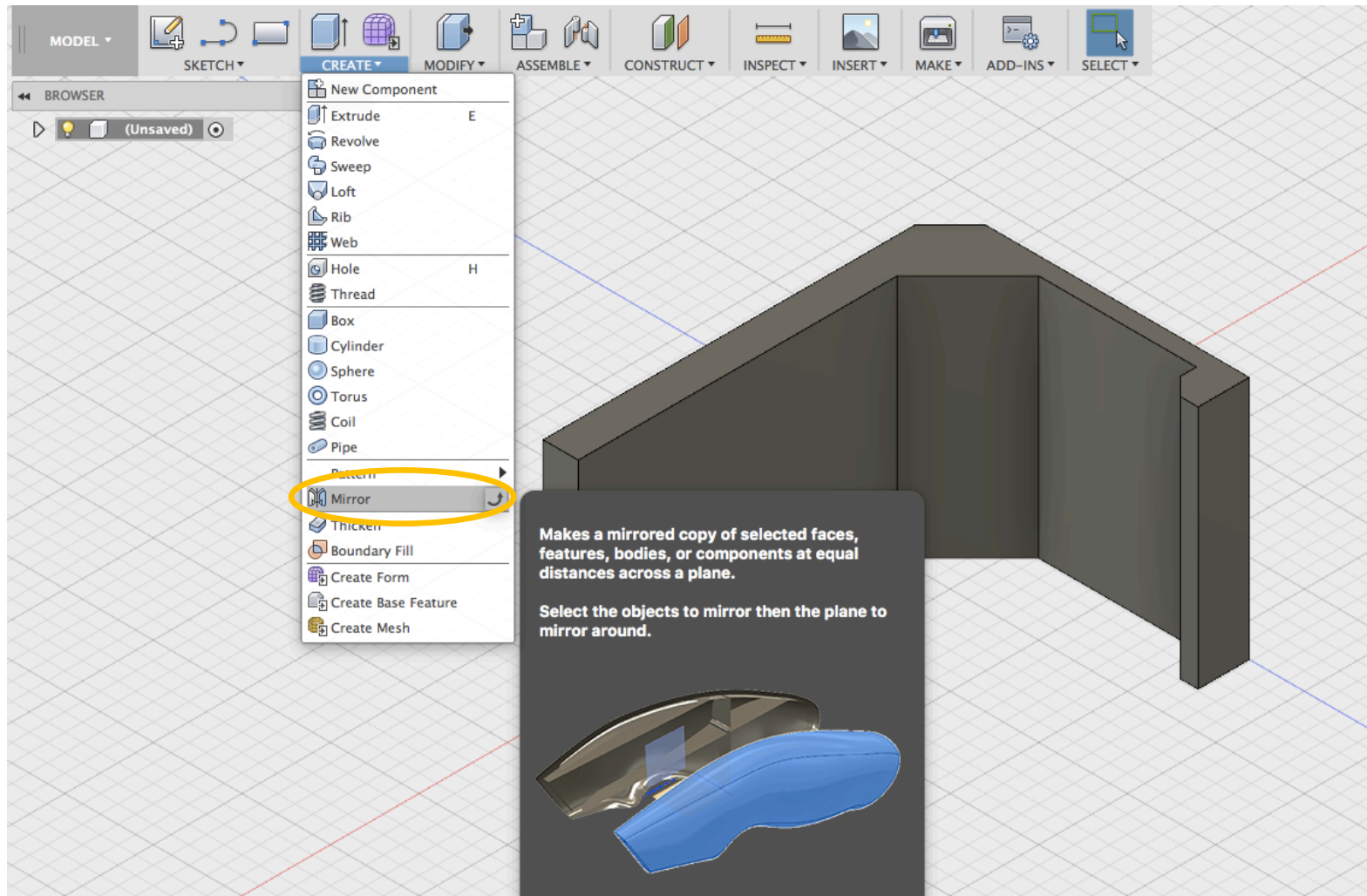




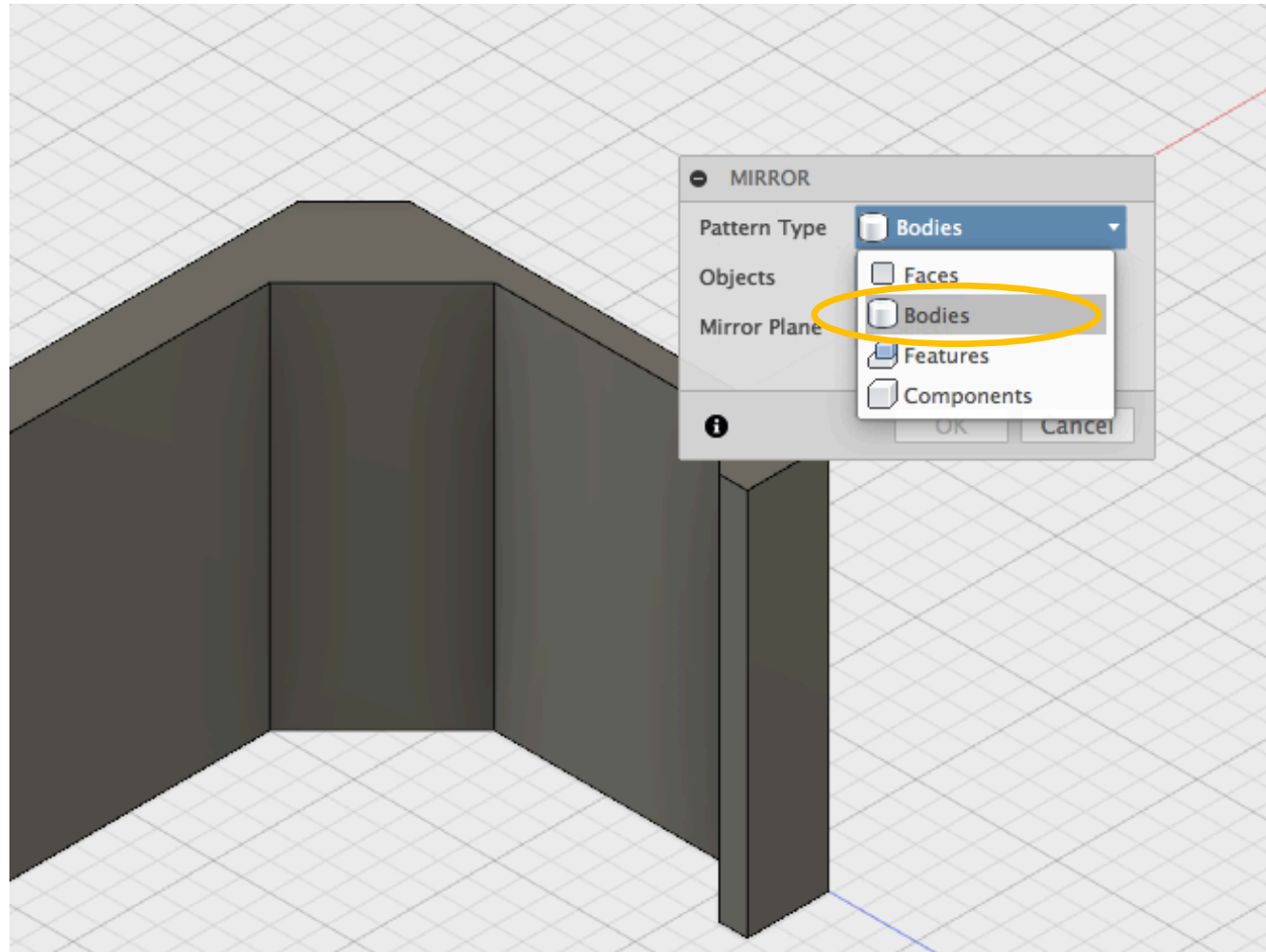
Step 4: Then, chamfer the inner edge by 4mm.



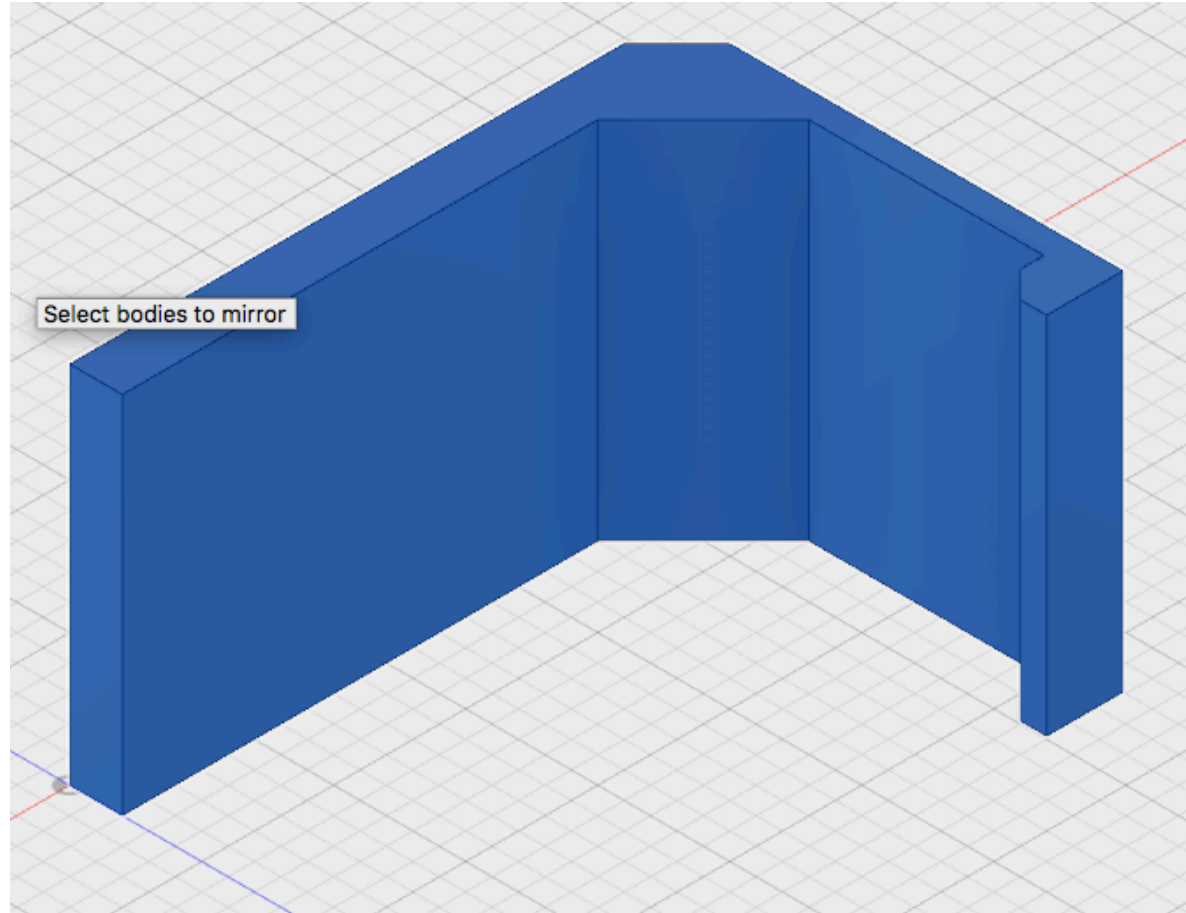
Step 5: Next, go to “Create” > “Mirror”.



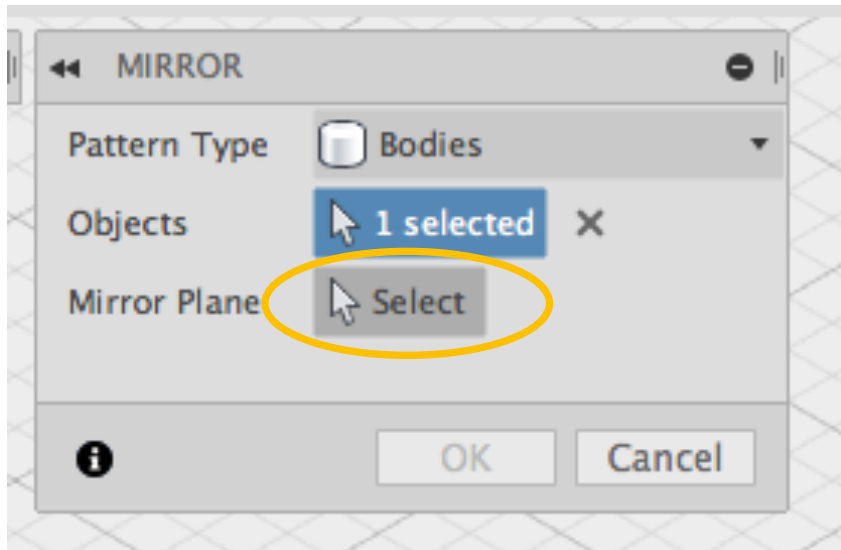
Step 6: Click “Pattern Type” selection and select “Bodies”.



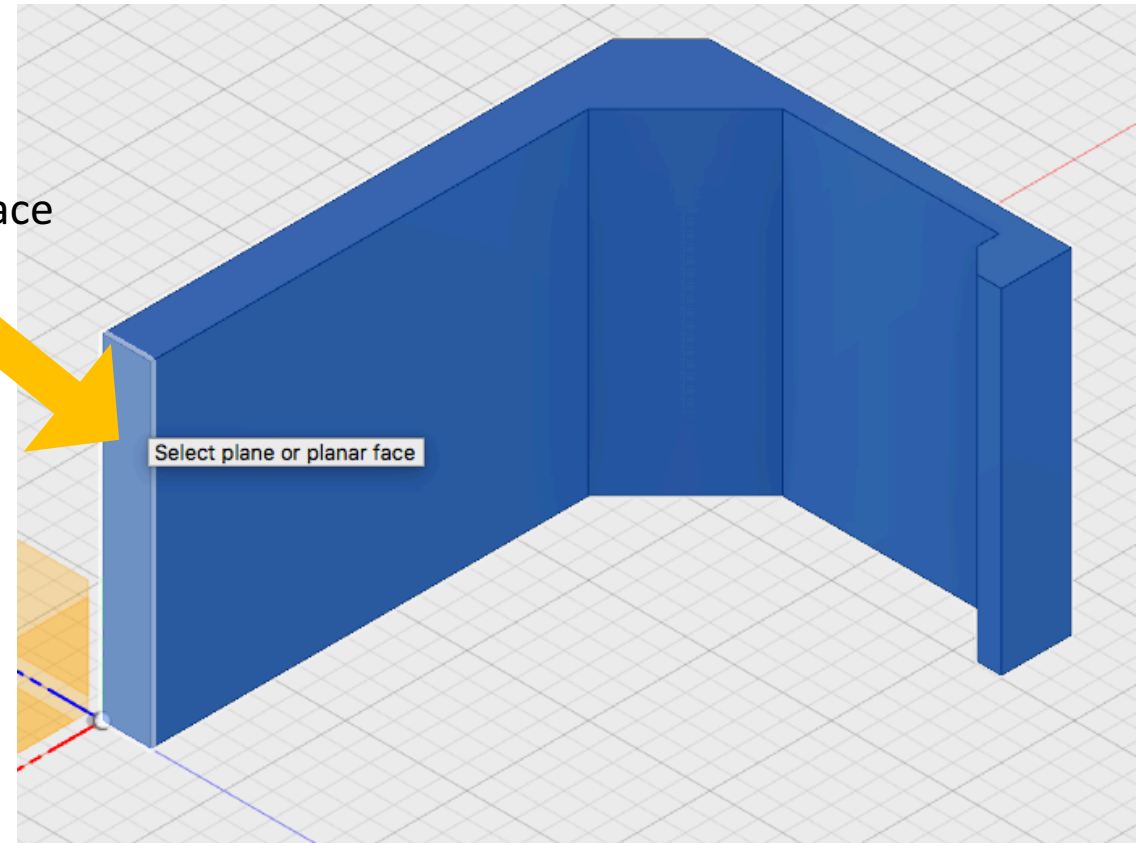
Step 7: Select the 3D object you just drew.



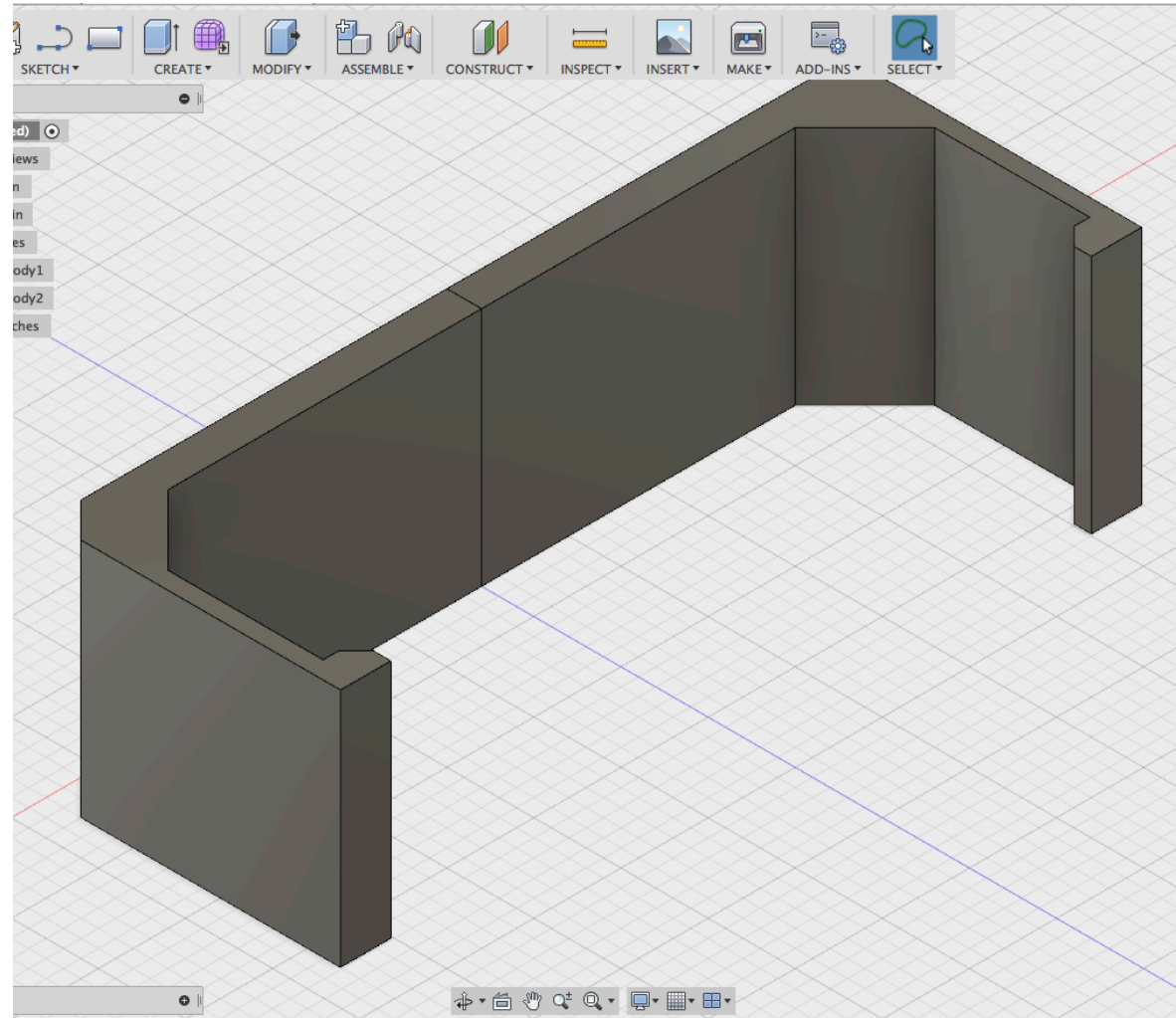
Step 8: Click “Mirror Plate”, then select the area pointed out below. Hit “Enter”.



Select this face

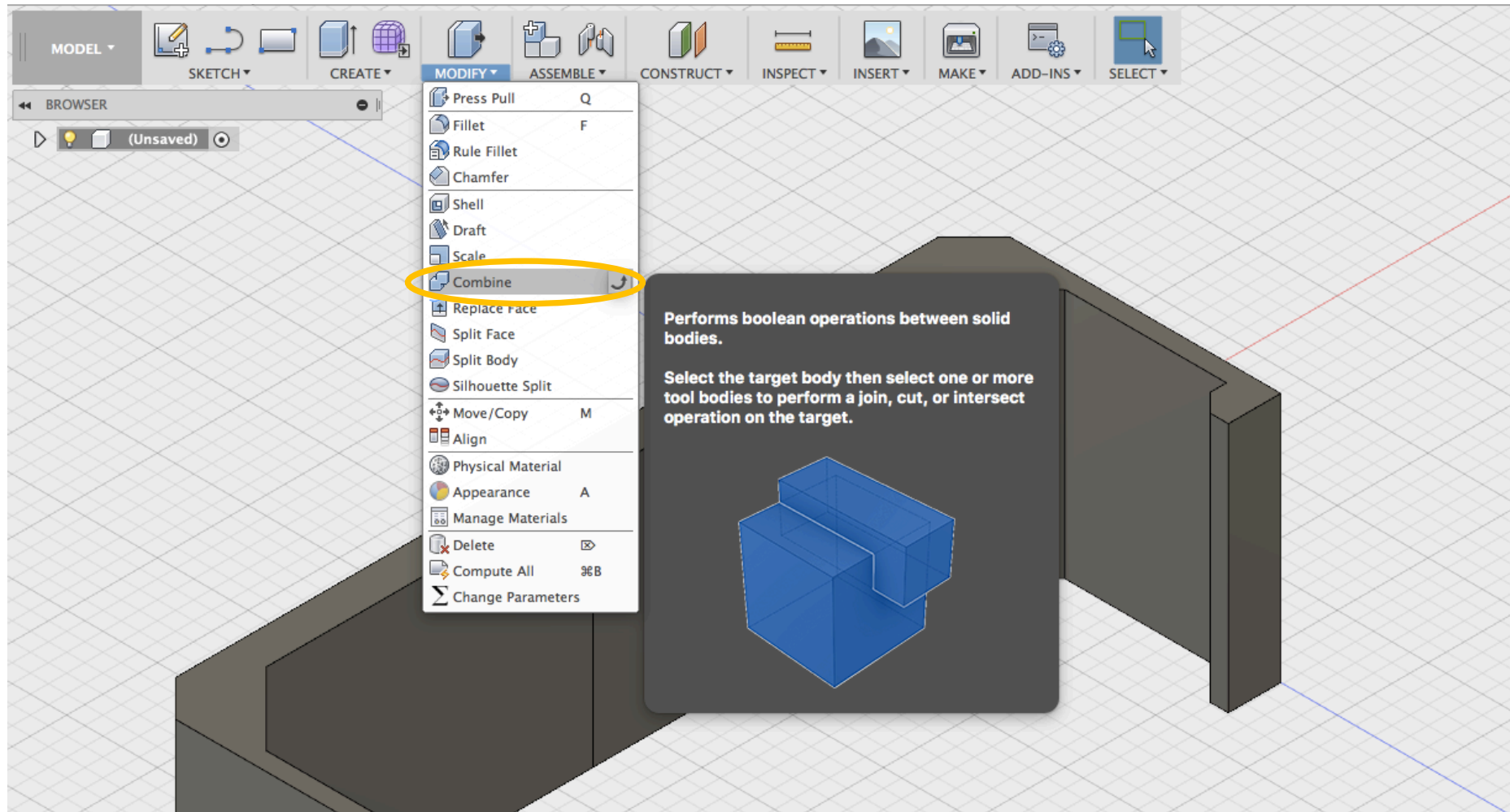


Step 9: You should see something like this:

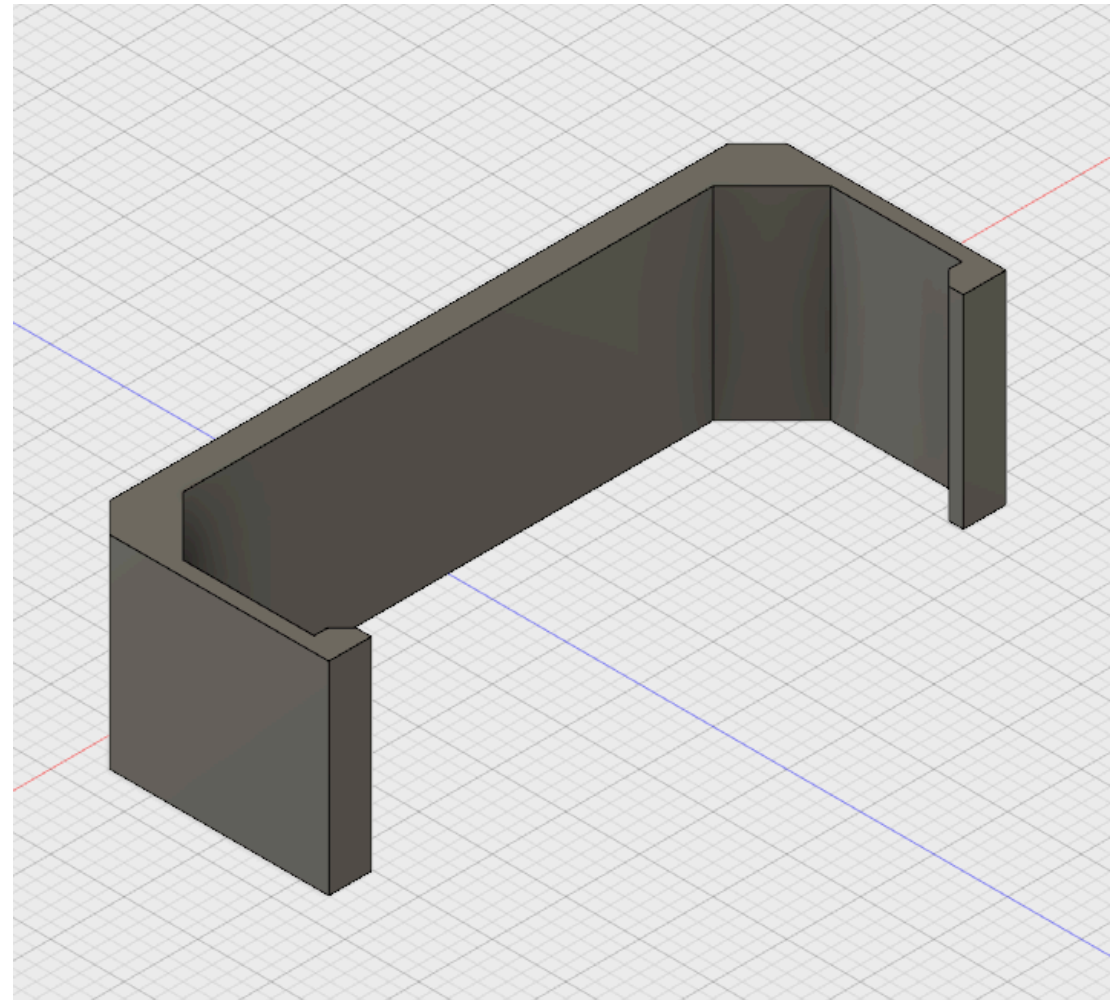
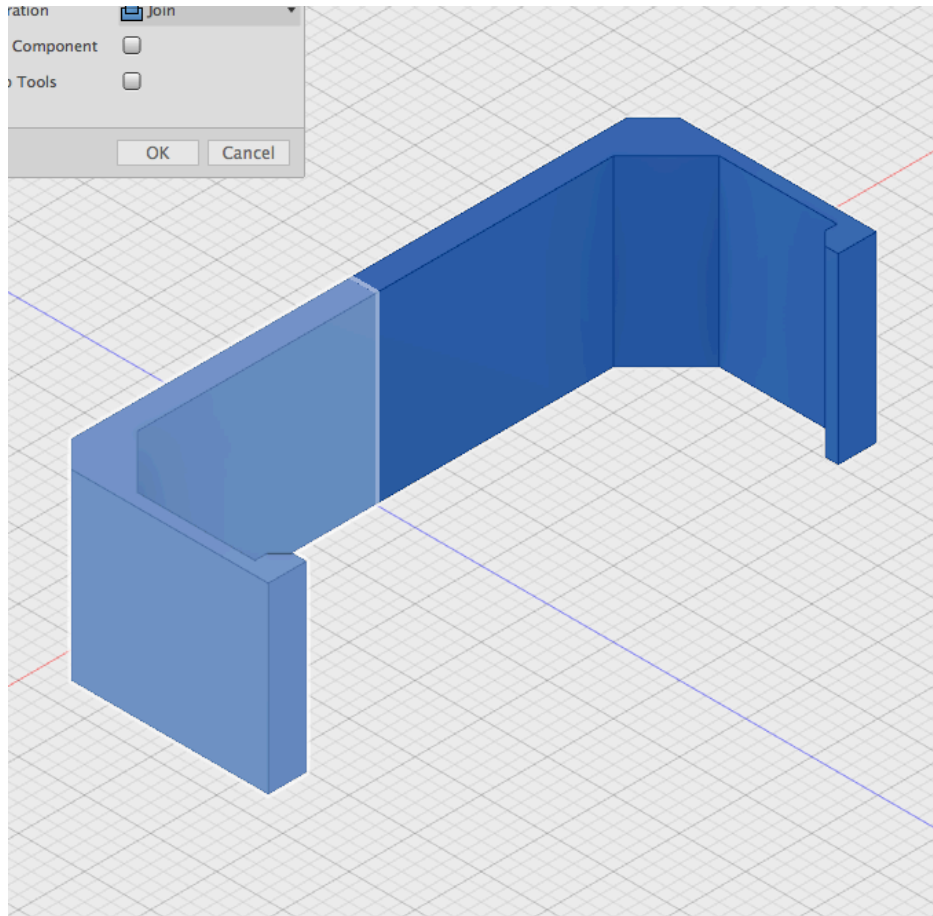




# Step 10: Go to "Modify" > "Combine".

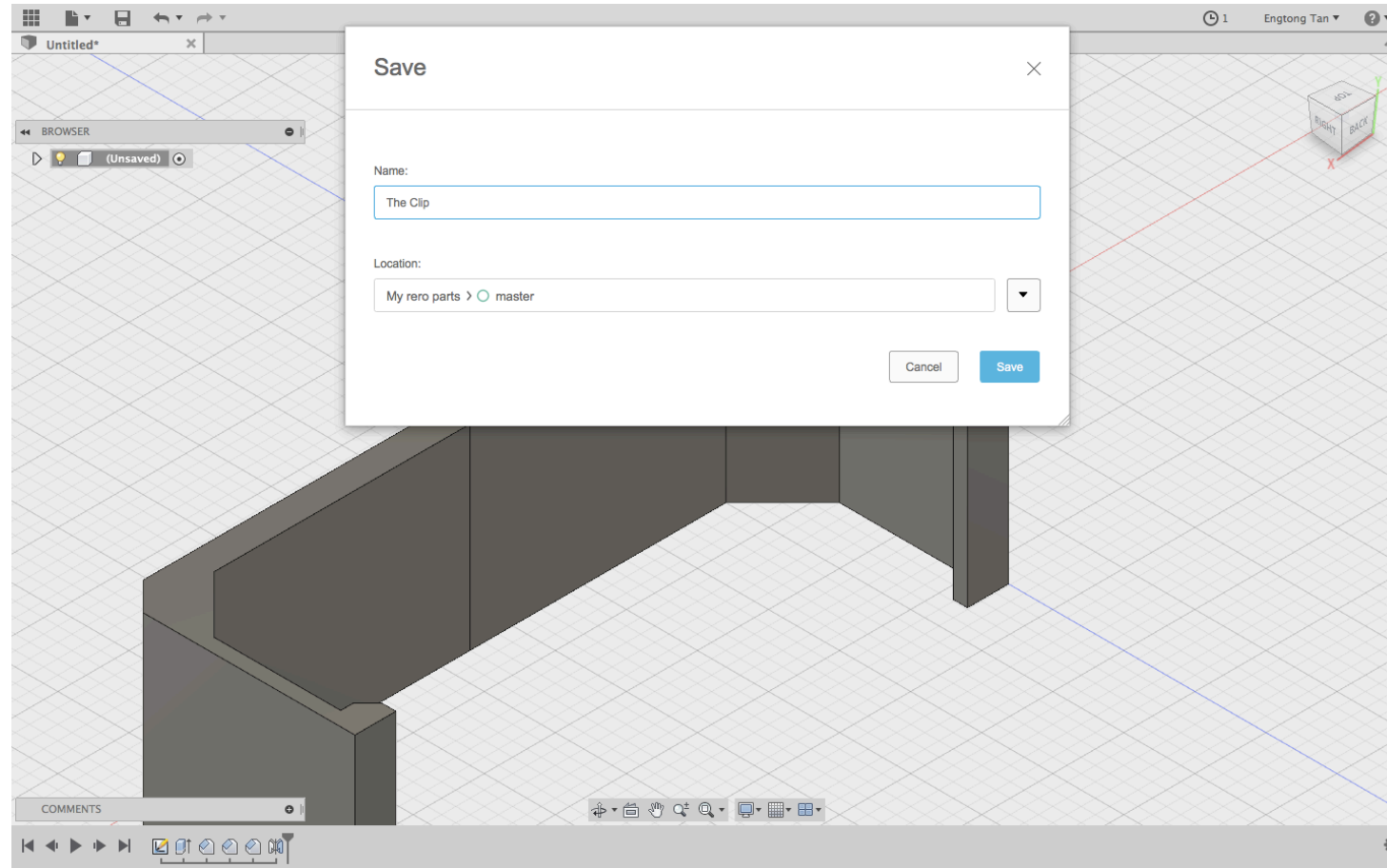


Step 11: Select both parts, then hit “Enter”.

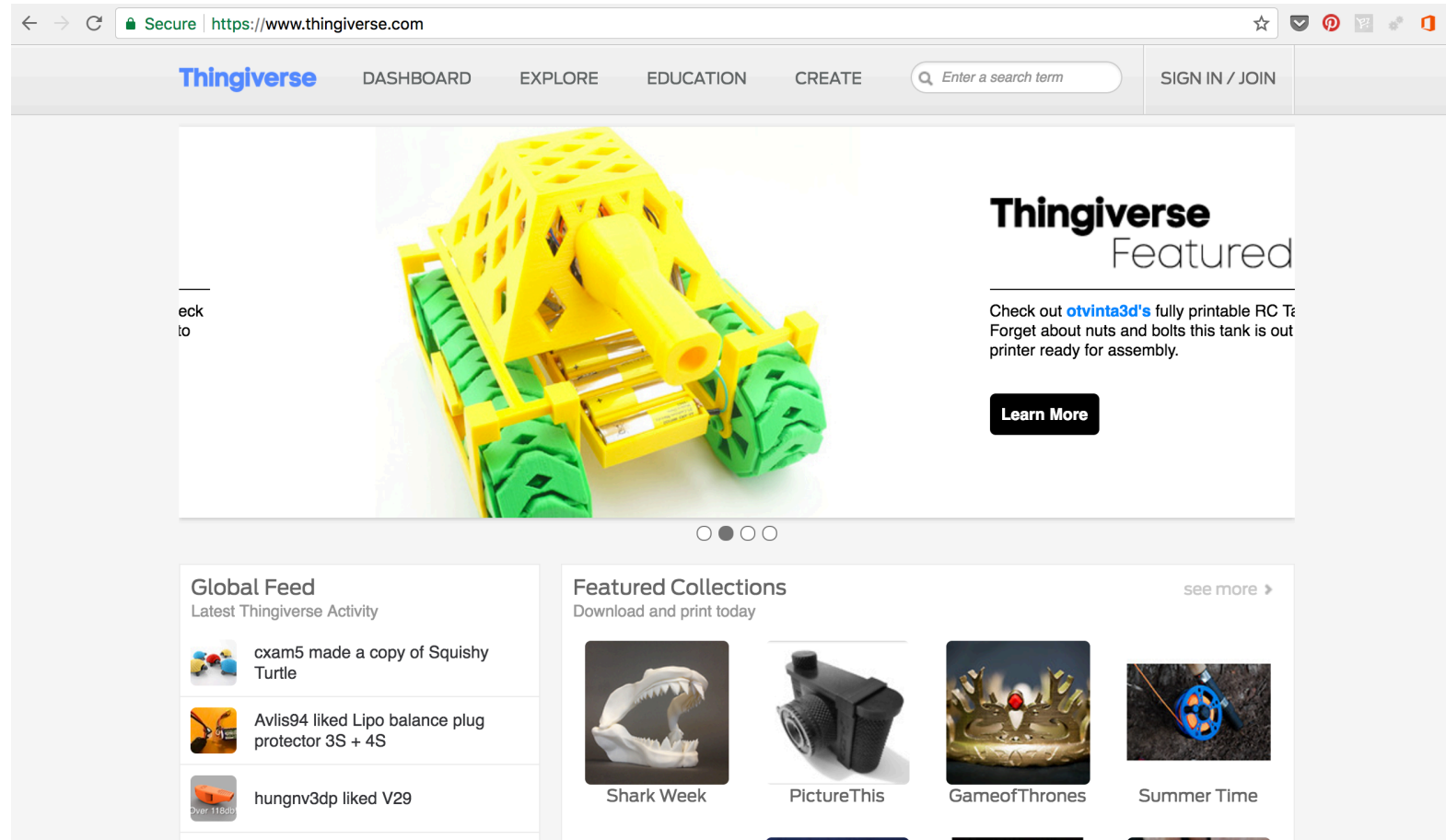




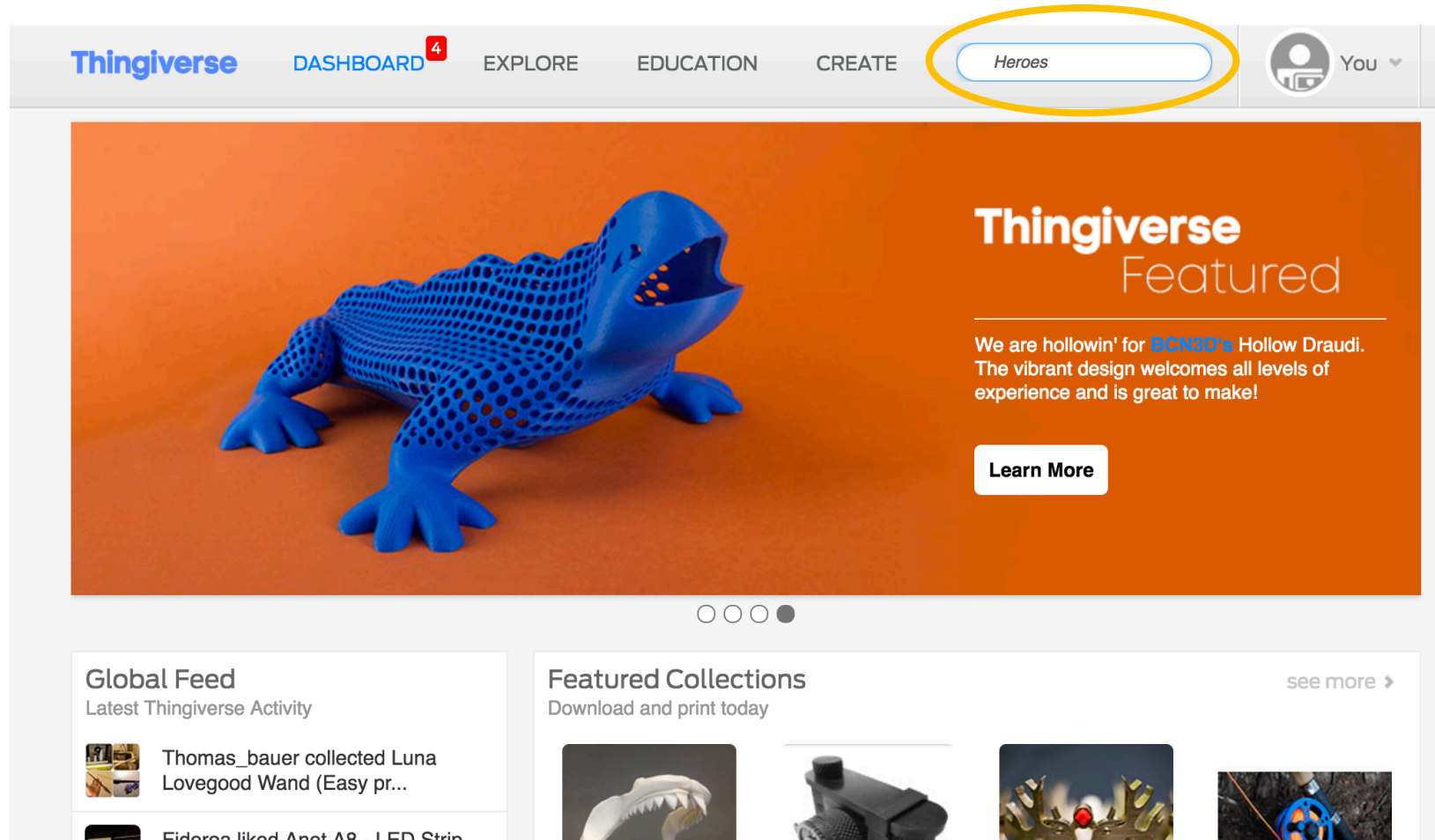
# Step 12: Save your design before you proceed.



Step 13: Next, we are going to download foreign parts from [www.thingiverse.com](https://www.thingiverse.com).



# Step 14: Type “Heroes” at the search box, then hit “Enter”.



# Step 15: From the search result, select the first listing.



**Thingiverse** DASHBOARD <sup>4</sup> EXPLORE EDUCATION CREATE  You ▾

## SEARCH RESULTS

235 results matching Heroes

Relevant ▾

Heroes


SEARCH

**FILTER BY**

- ☒ Things
- ☐ Makes
- ☐ Users
- ☐ Collections
- ☐ Groups
- ☐ Apps


FOR EDUCATION ^

**Heroes**  
by faberdasher  
Jun 18, 2015




396 470 4

**Diablo - Heroes**  
by Snipecat  
Sep 12, 2015




39 55

**Heroes of the Storm Tracer**  
by Mylakovich  
Sep 2, 2016



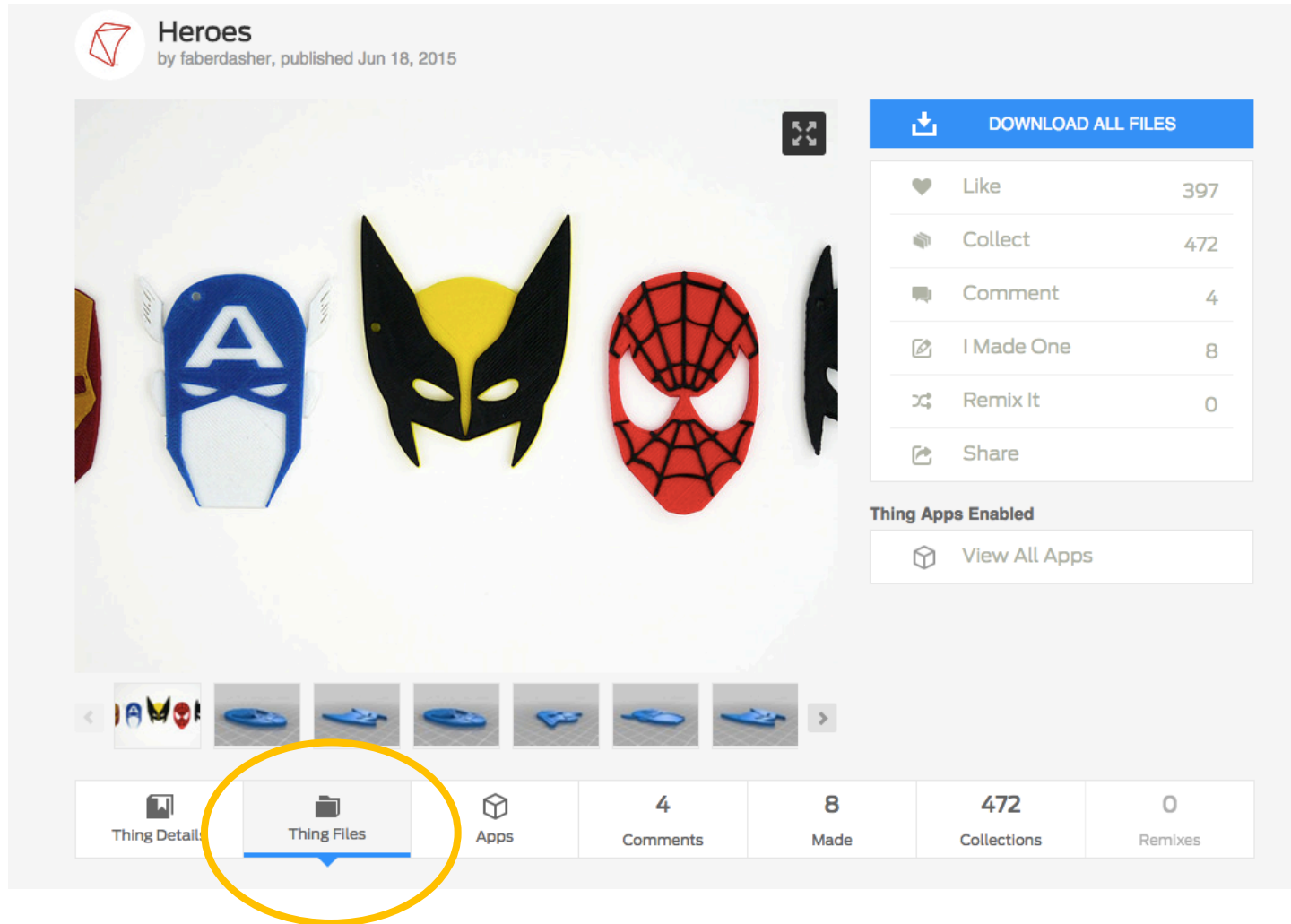
134 125 15

**Kerrigan - Heroes of the Stor...**  
by Hannemaster  
Jun 17, 2016



125 153 7

# Step 16: Scroll down, click the second tab: “Things Files”.



# Step 17: Double-click on the character that you like to begin download. (STL file)



Thing Details

Thing Files









Apps


4  
Comments

8  
Made

472  
Collections


0  
Remixes

File Name	Downloads	Size
 <b>batman.stl</b> Last updated: 06-18-15	2549	27kb
 <b>batman_keyring.stl</b> Last updated: 06-18-15	2596	29kb
 <b>captain_america.stl</b> Last updated: 06-18-15	2584	49kb
 <b>wolverine_keyring.stl</b> Last updated: 06-18-15	2534	49kb
 <b>ironman.stl</b> Last updated: 06-18-15	2656	49kb
 <b>darth_vader.stl</b> Last updated: 06-18-15	2501	111kb
 <b>ironman_keyring.stl</b> Last updated: 06-18-15	2610	36kb
 <b>captain_america_keyring.stl</b> Last updated: 06-18-15	2537	43kb



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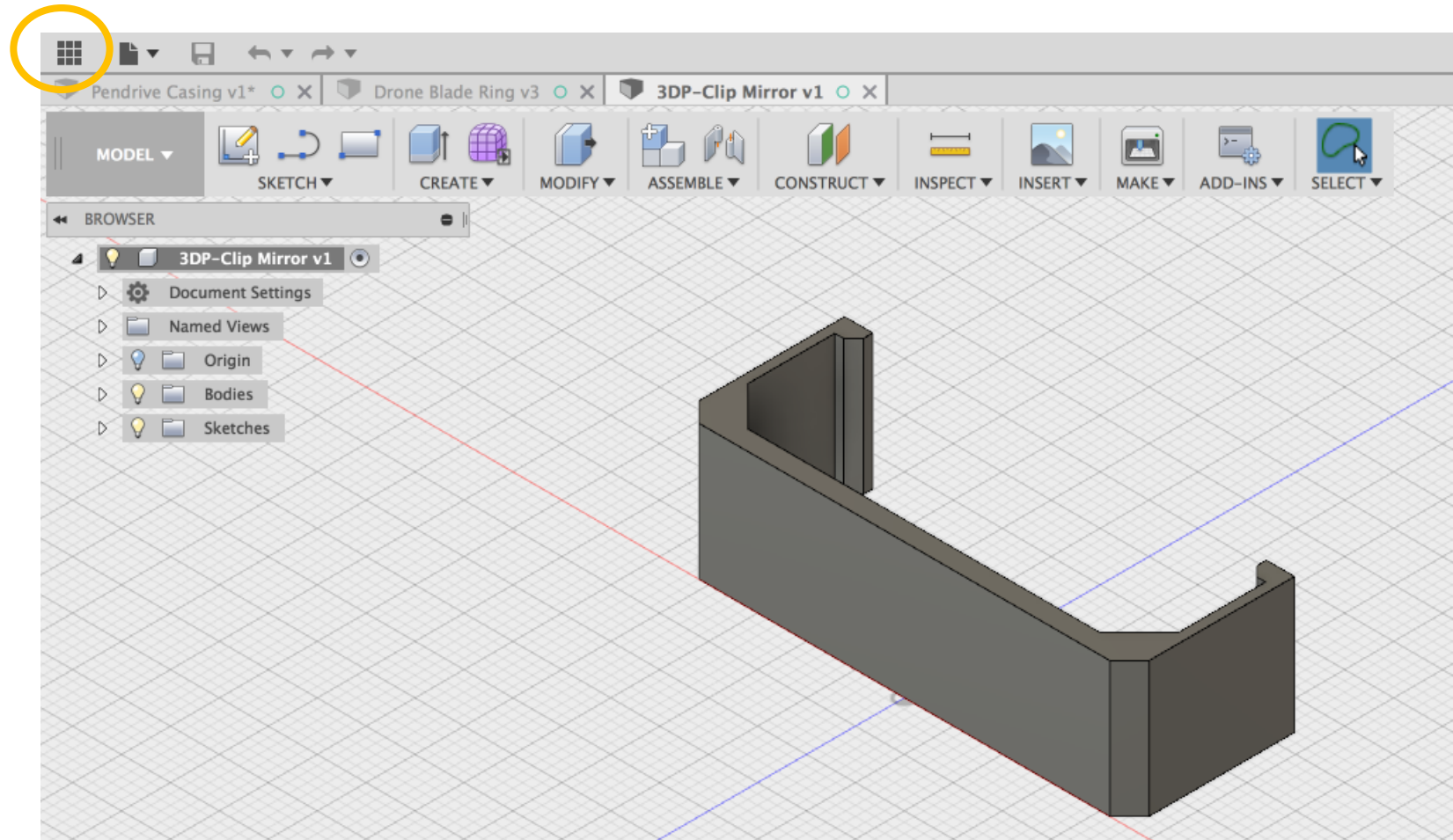
By downloading this thing, you agree to abide by the license: Creative Commons - Attribution - Non-Commercial - Share Alike

 **DOWNLOAD ALL FILES**

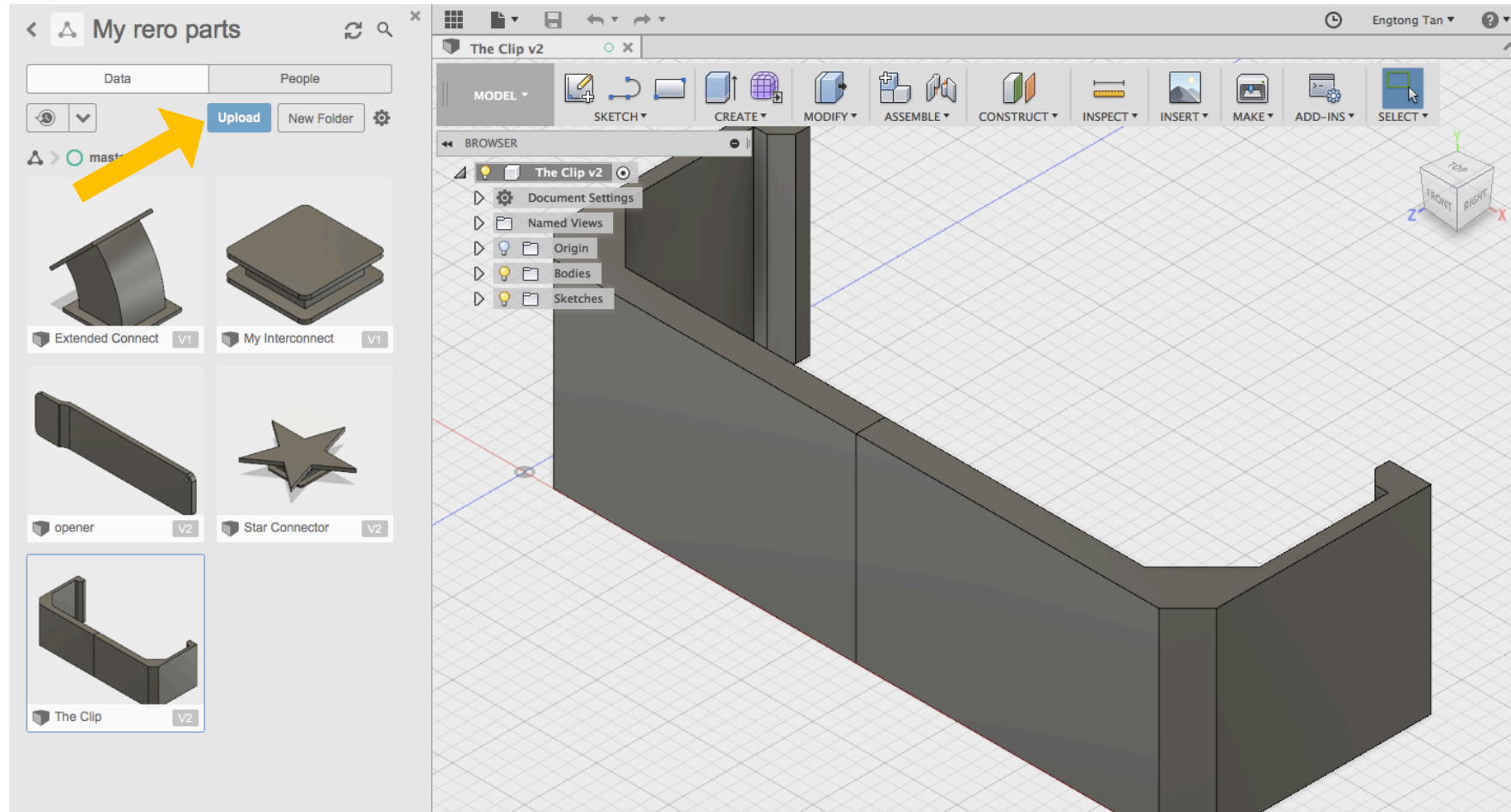
(223 kb zip file)



Step 18: Go back to Fusion 360. Click  located at the top-left corner.

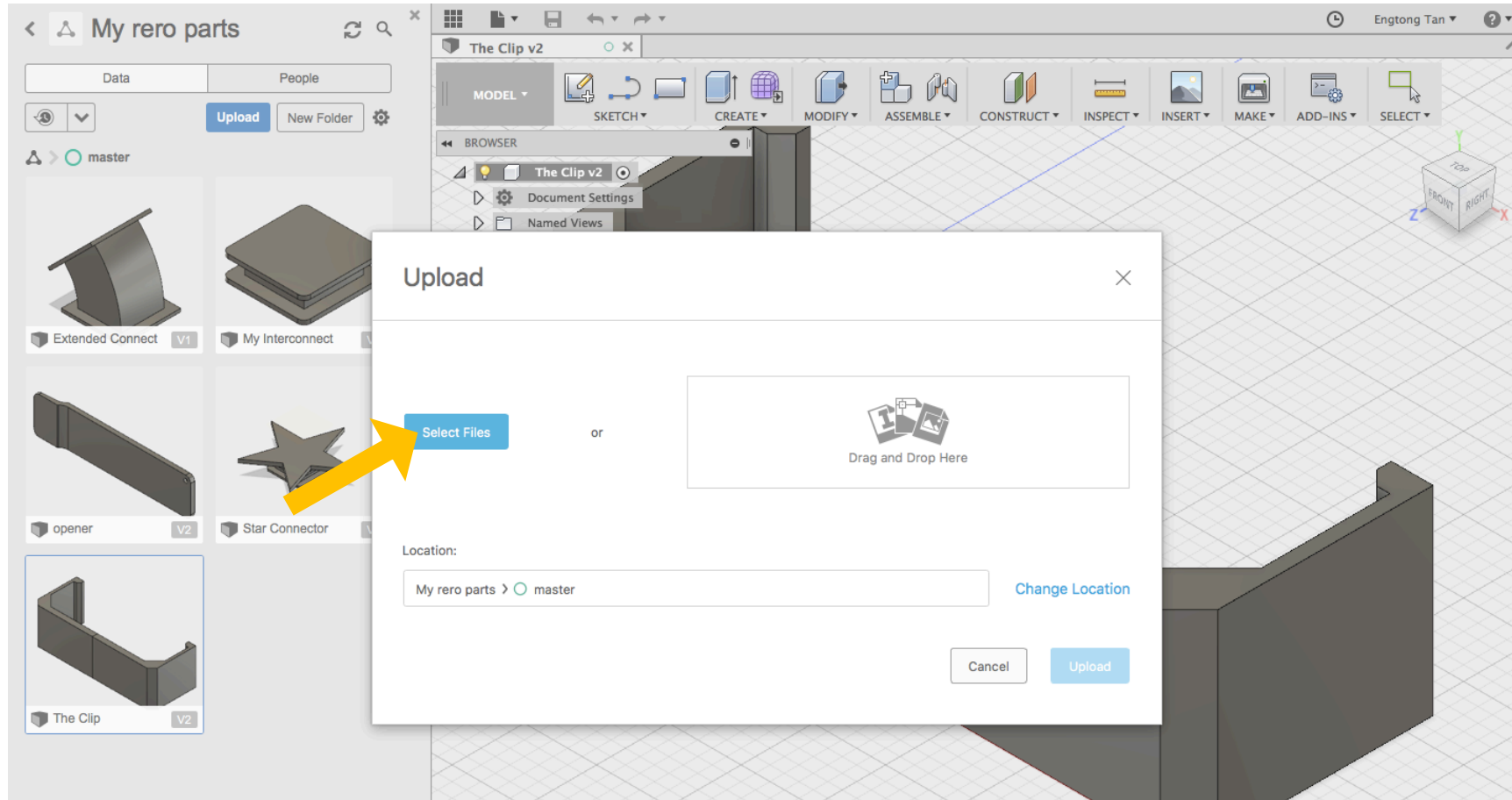


# Step 19: Click “Upload”.





Step 20: Click “Select file”. Select the file that you have downloaded just now.



# Step 21: Click “Upload”.

Upload

Select Files

or

Drag and Drop Here

Name	Type	Size	Remove
batman_keyring	STL	29 kB	×

Location:

Chin's First Project > master

Change Location

Cancel

Upload



# Step 22: Click “Close” when download is complete.



Job Status

×

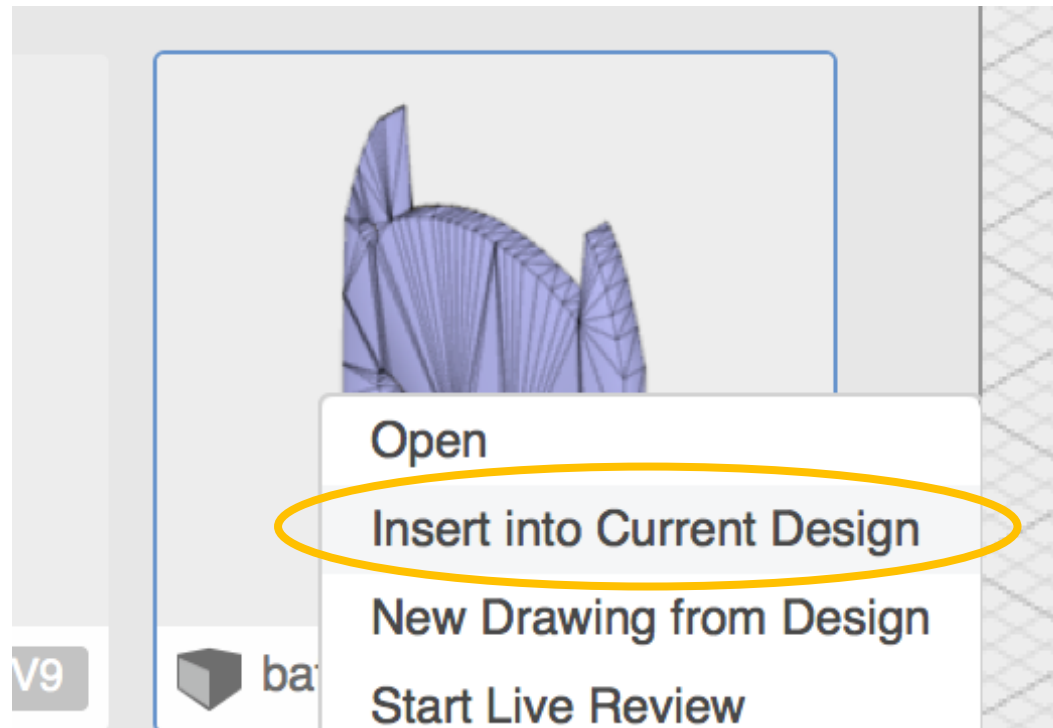
Uploads

Simulations

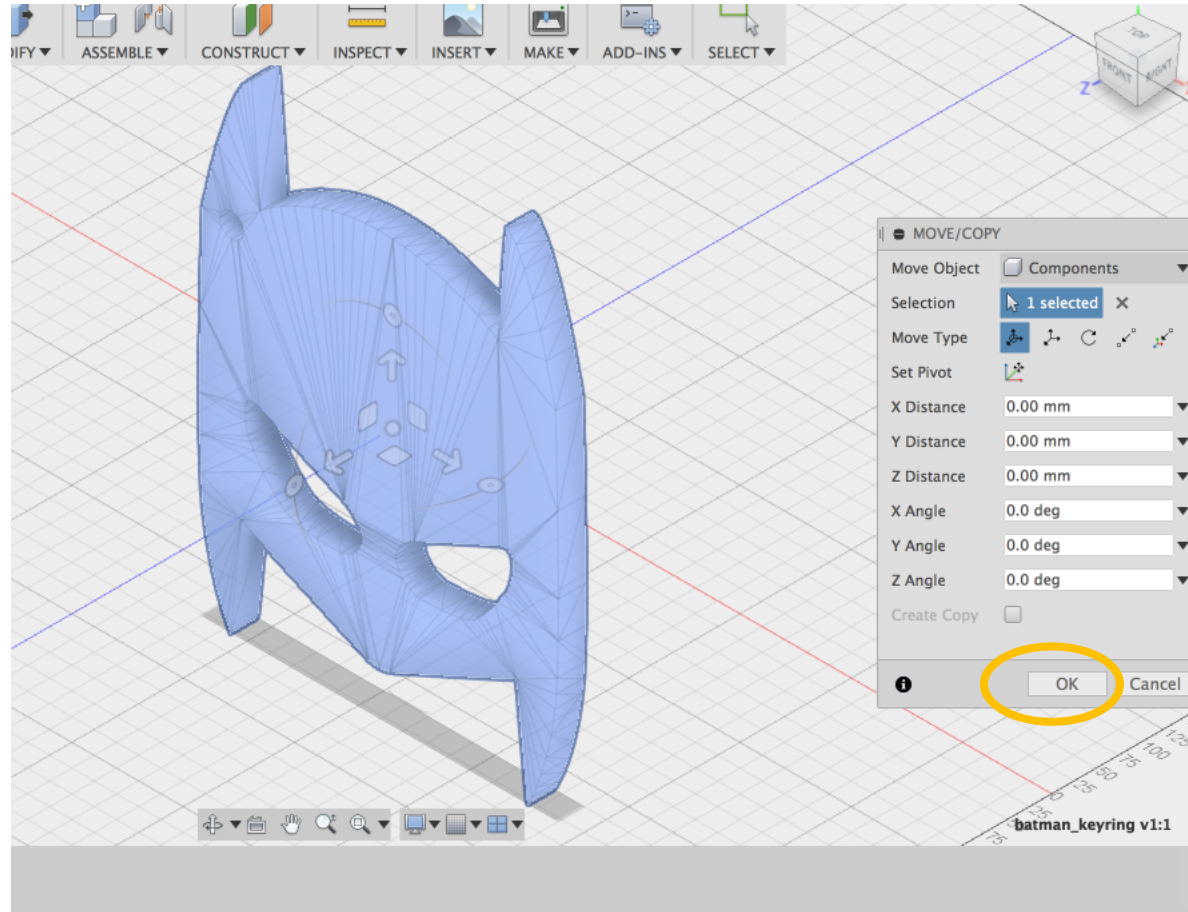
Name	Status	Action
batman_keyring.stl	Complete	

Close

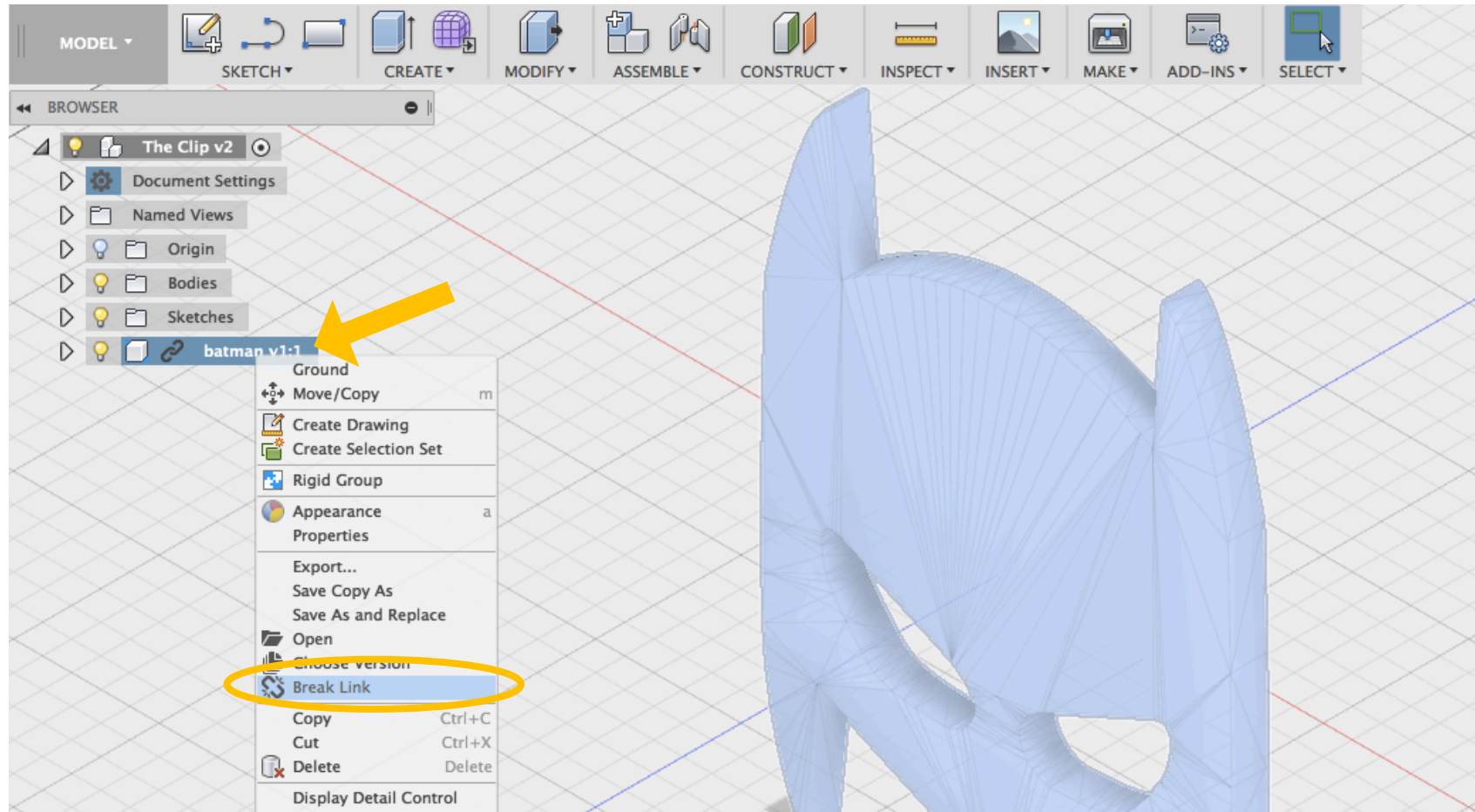
Step 23: You can find your downloaded character at the left panel. Right-click on it then select “Insert into the Current Design”.



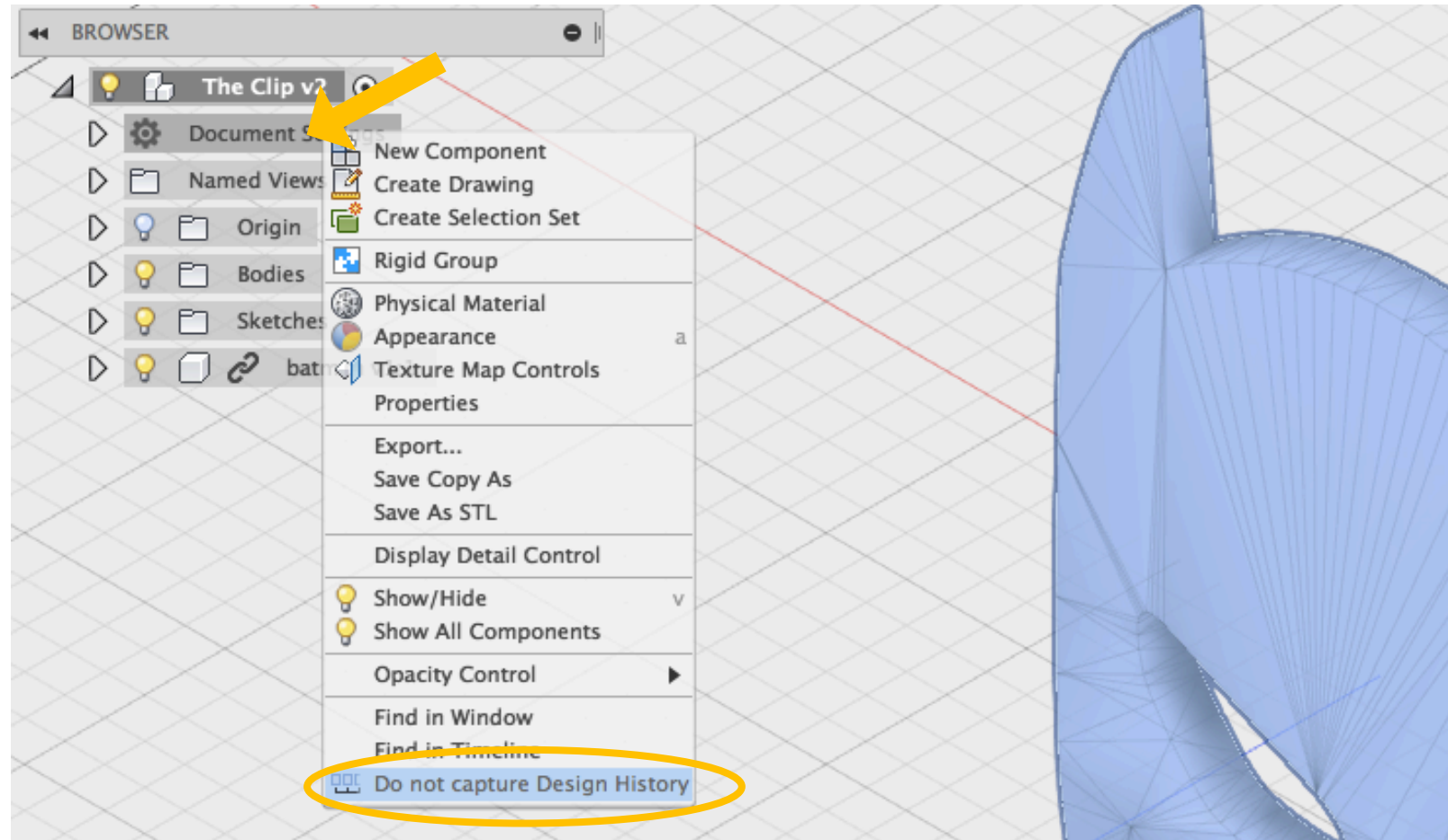
# Step 24: Click “OK”.



Step 25: Right-click the 'batman' tab on the browser, then select "Break Link".

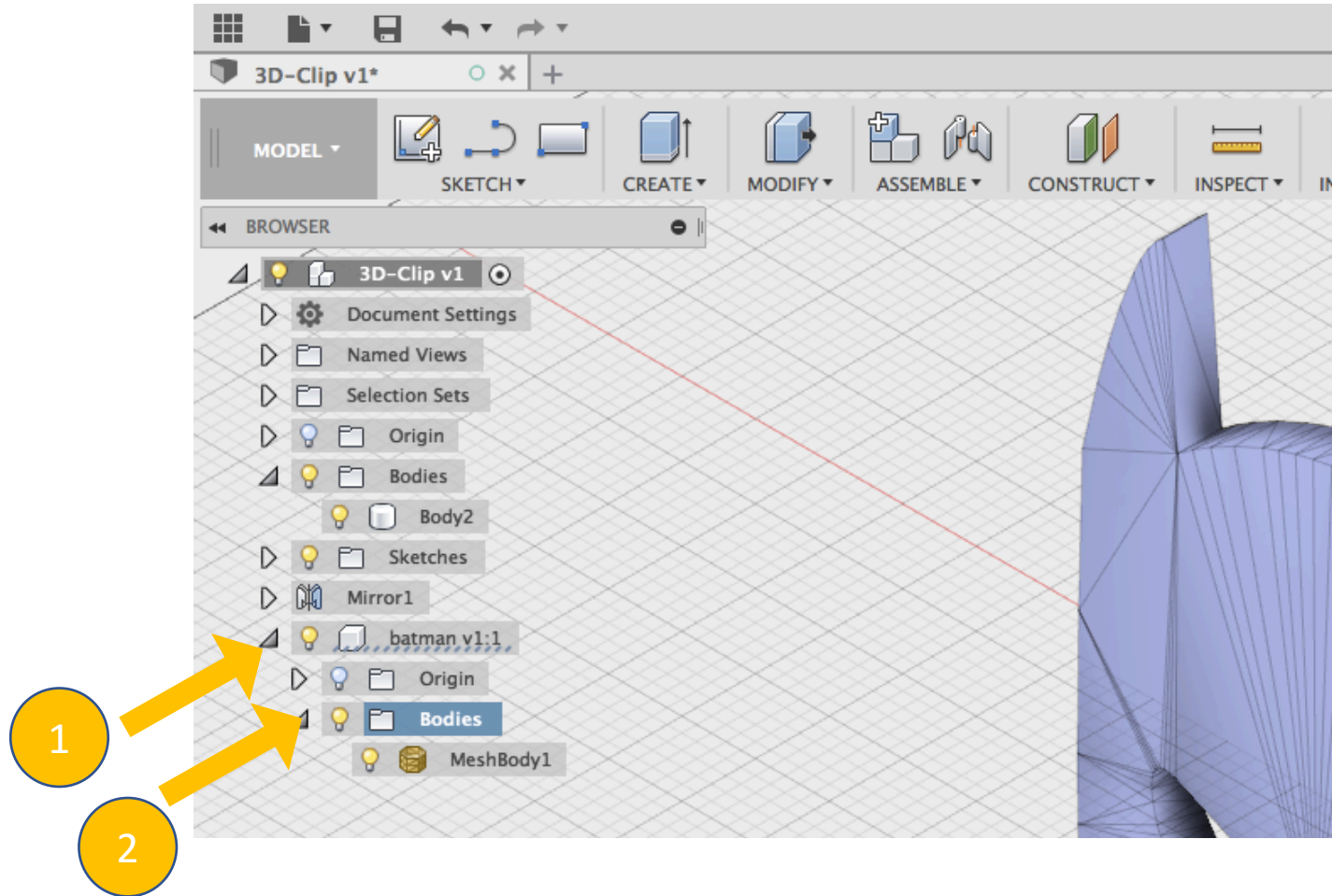


Step 26: Next, right-click “Document Settings” on the browser then click “Do not capture Design History”.



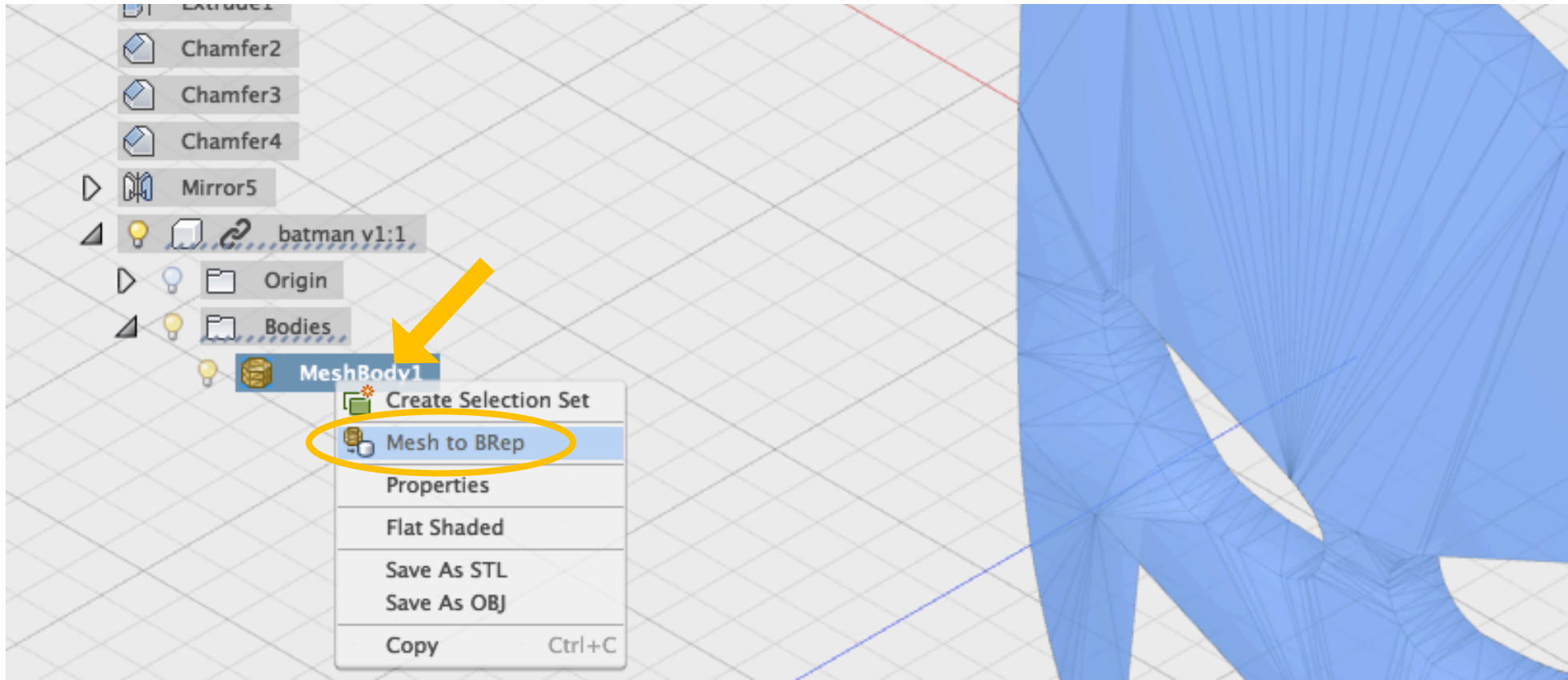


Step 27: Click ► to expand the “batman” and its “Bodies” tab on the browser.

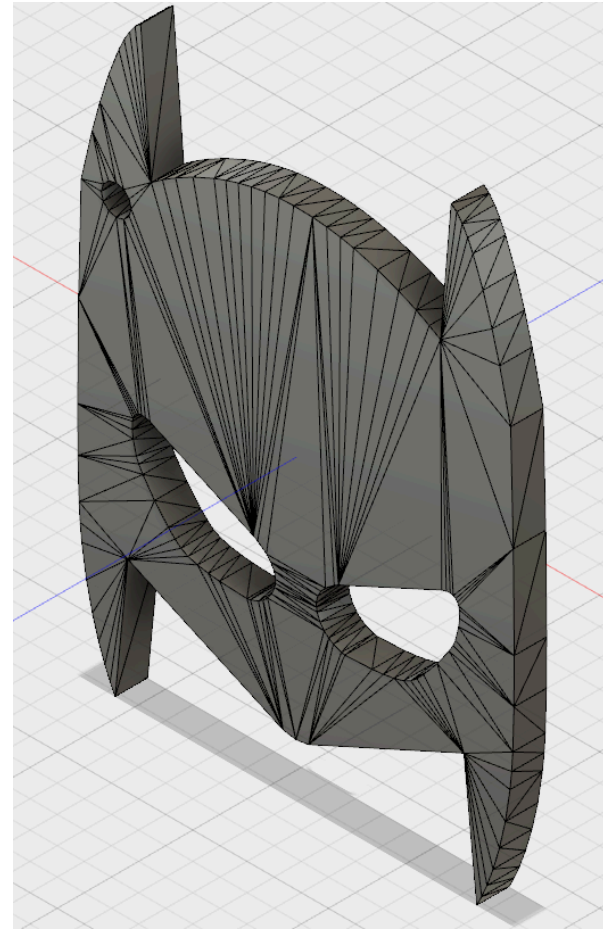
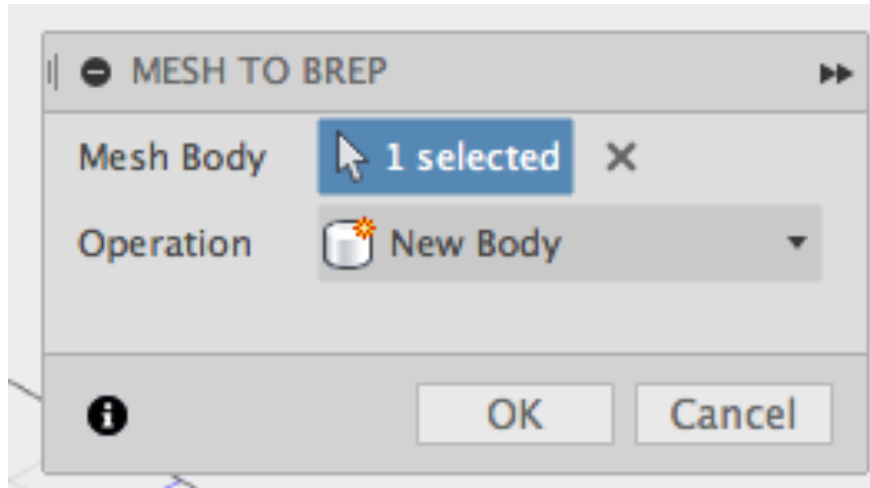




Step 28: Right-click “MeshBody1” then click “Mesh to BRep”.

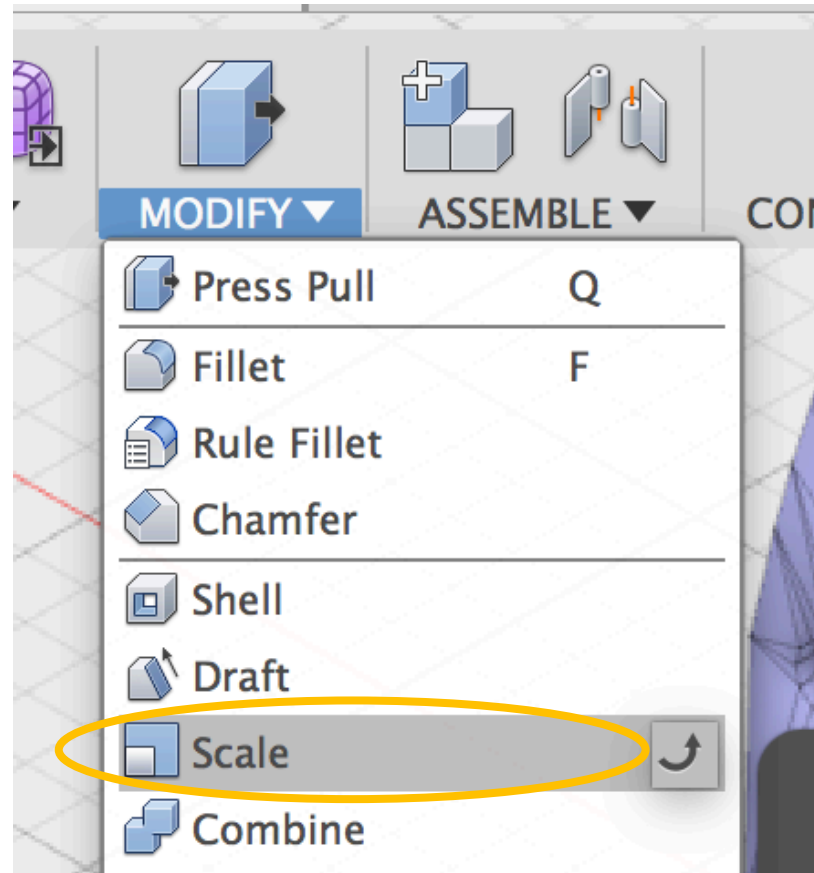


Step 29: Click “OK” or hit “Enter” and your Batman mask will be converted into Brep format.

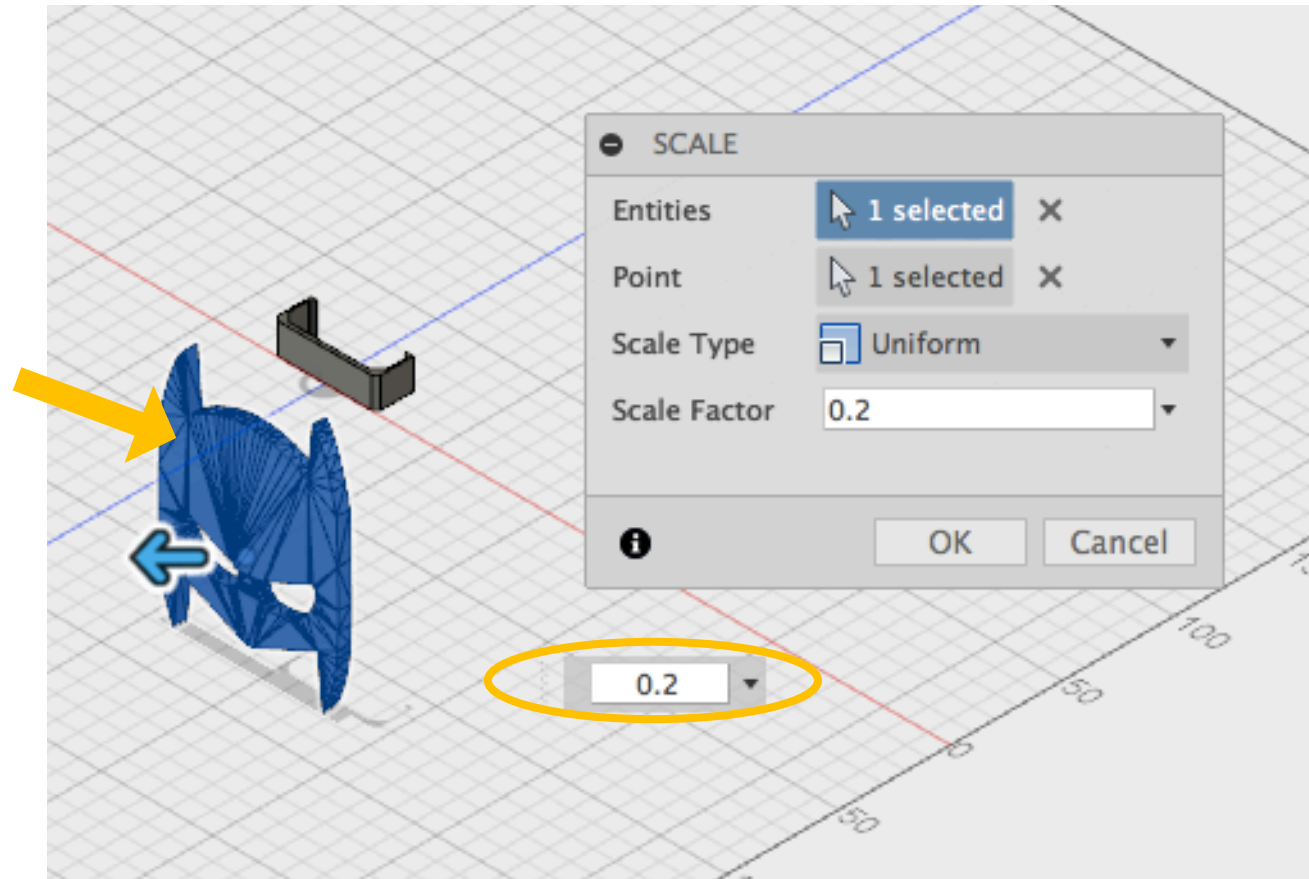


Note: Brep is a kind of design format that allowed us to combine with other design format in fusion 360.

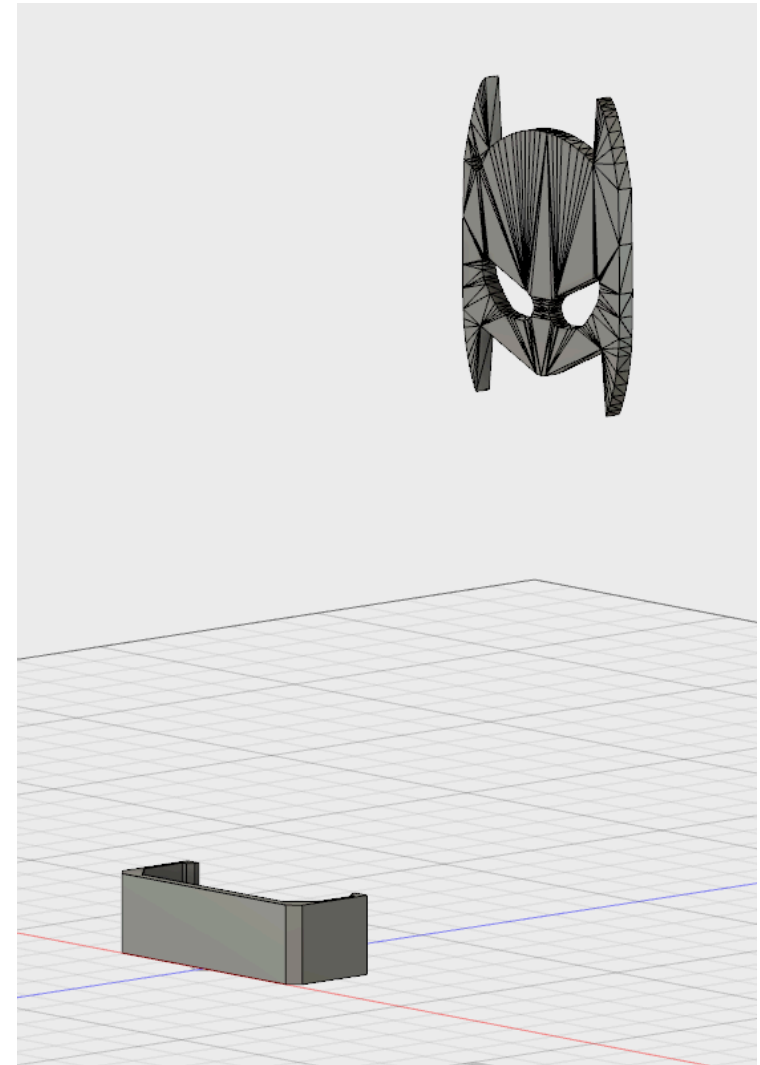
Step 30: Next, we will need to scale down the Batman mask to match the clip. Go to “Modify” > “Scale”.



Step 31: Select the Batman mask, then key in “0.2” and hit “Enter”.



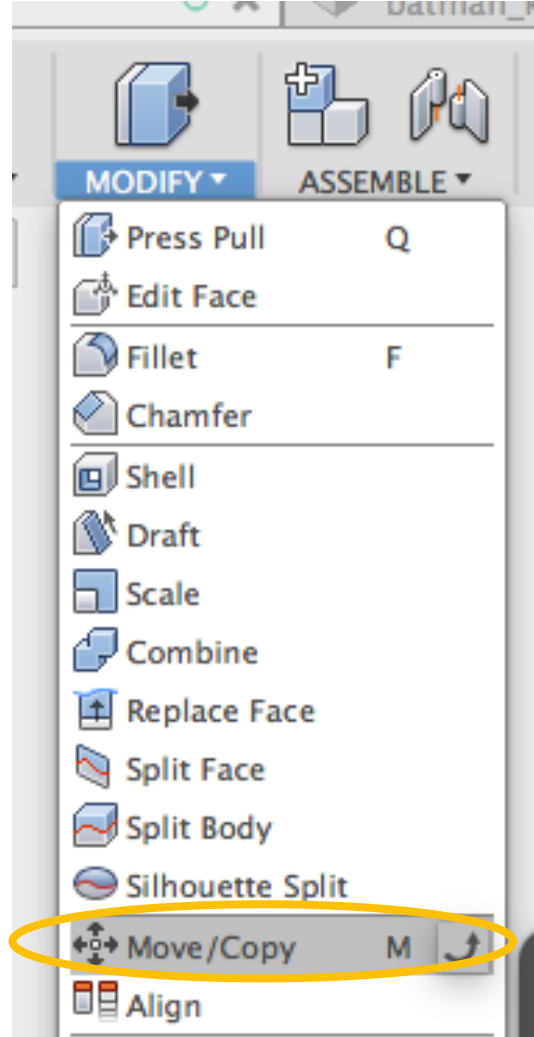
Note: The mask has been scaled down to 2/10 from its original size. The following steps are to move the mask to combine with the clip.



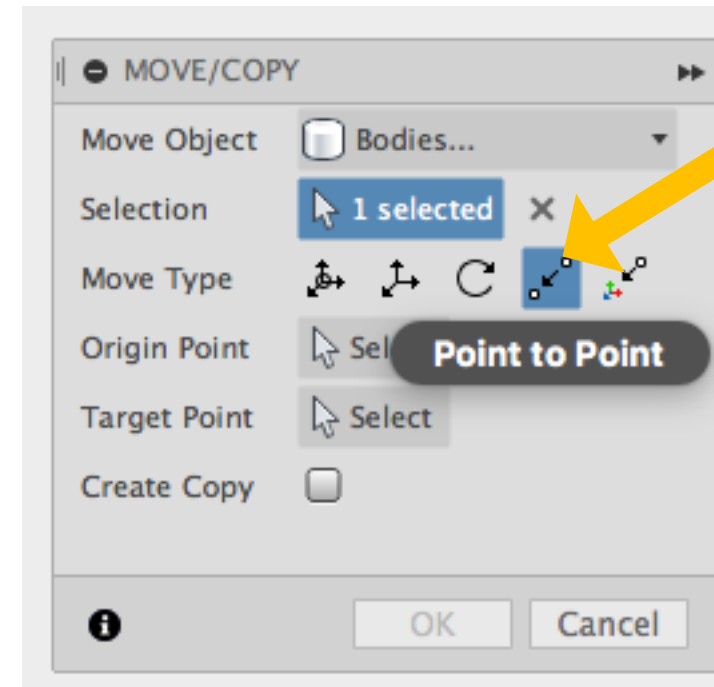
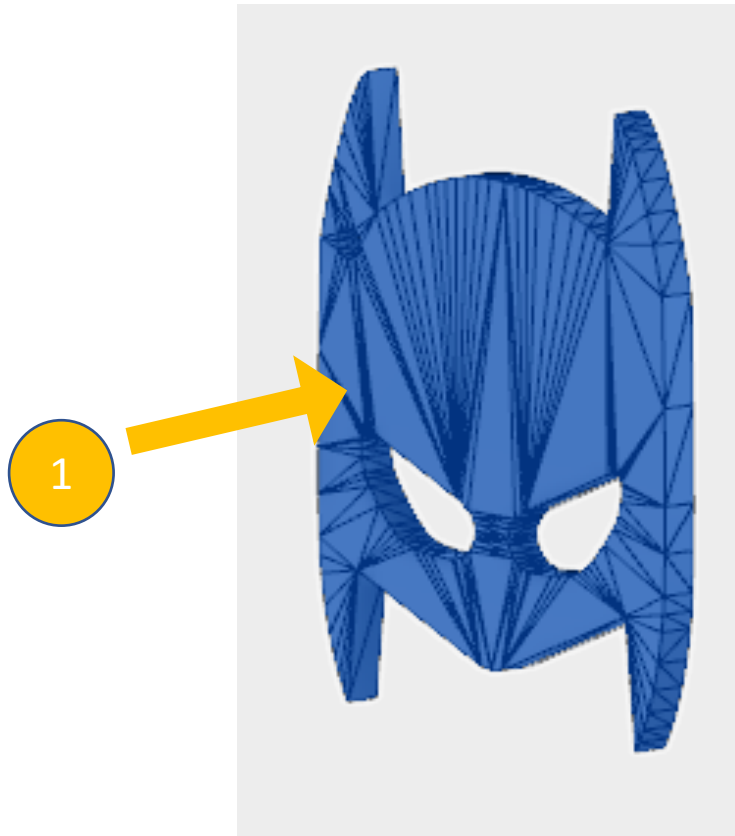


reero

Step 32: First, go to “Modify” > “Move/Copy”.

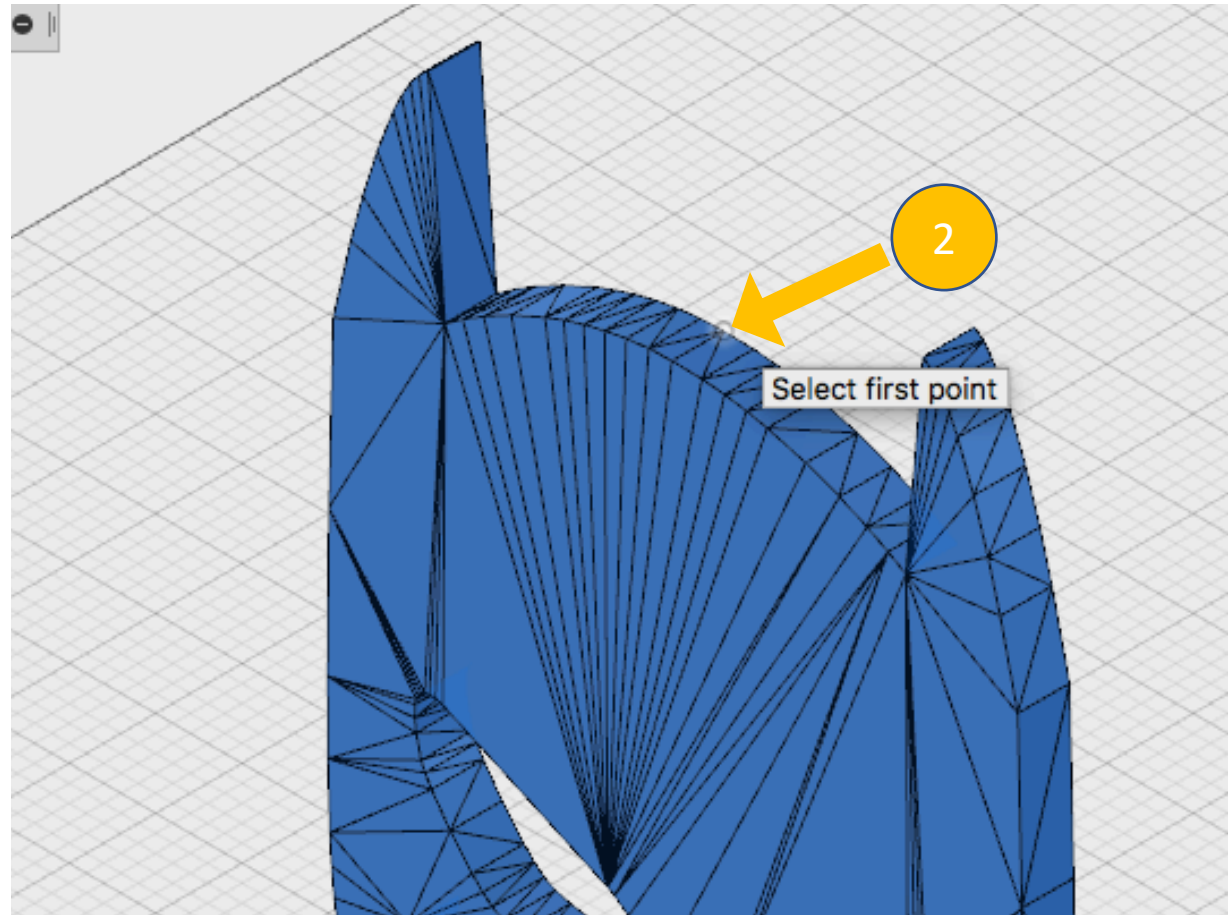
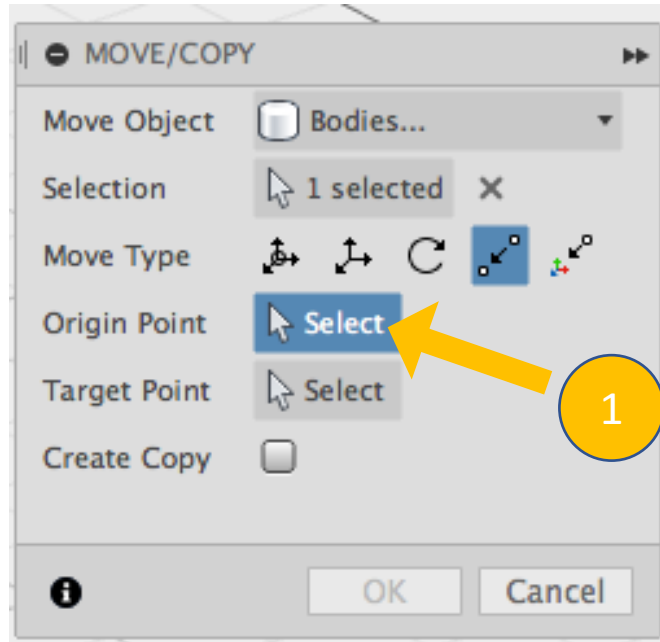


Step 33: Select the Batman mask, then click “Point-to-Point” in the property box.



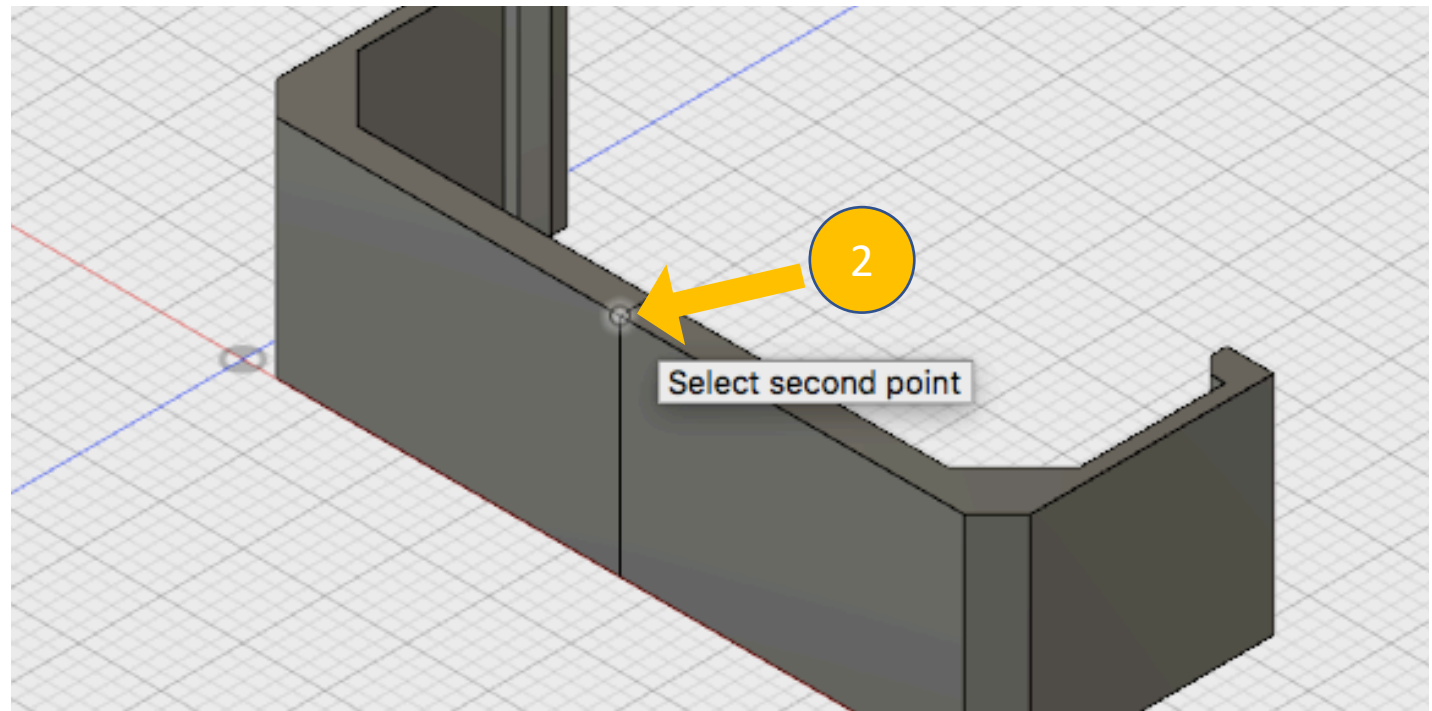
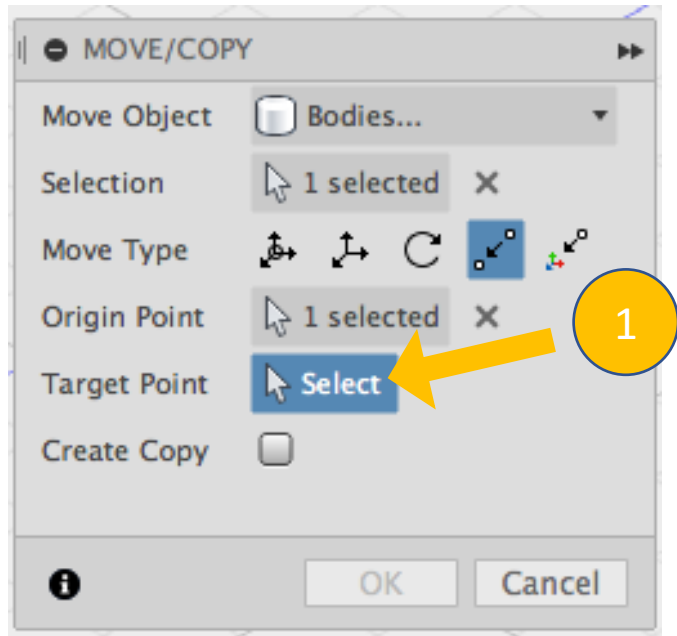


Step 34: Next, click on “Origin Point” button, then select the top-center point of the mask as the origin point.



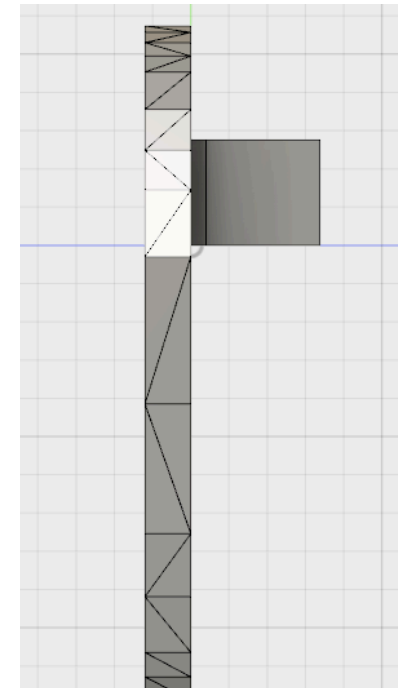
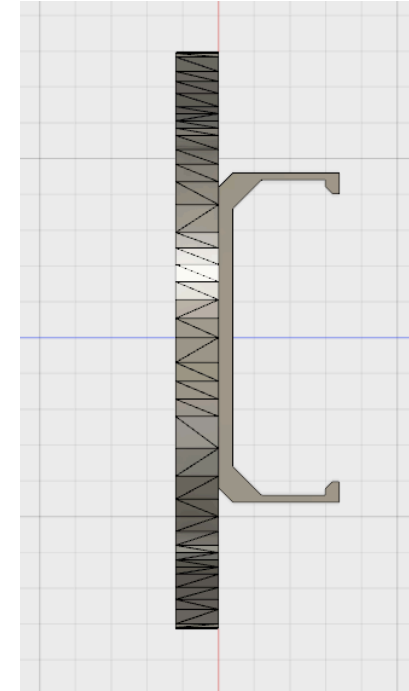
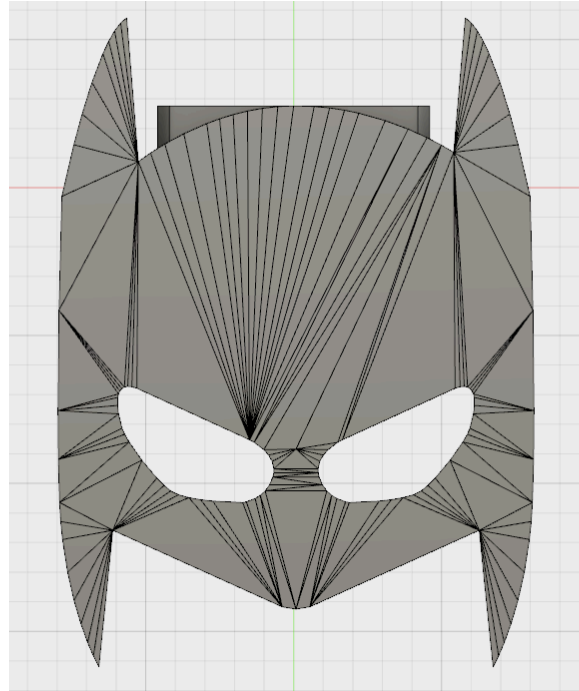
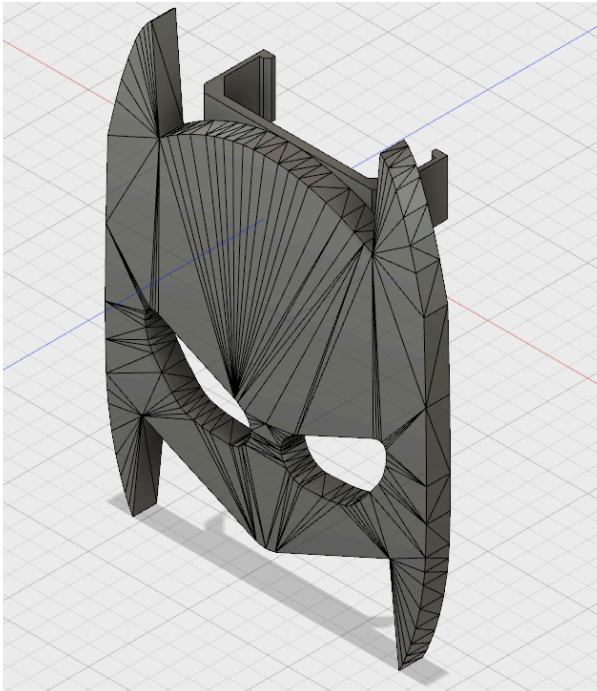


Step 35: Then, click on the “Target Point” button. Select the top-center point of the clip. Then hit “Enter”.



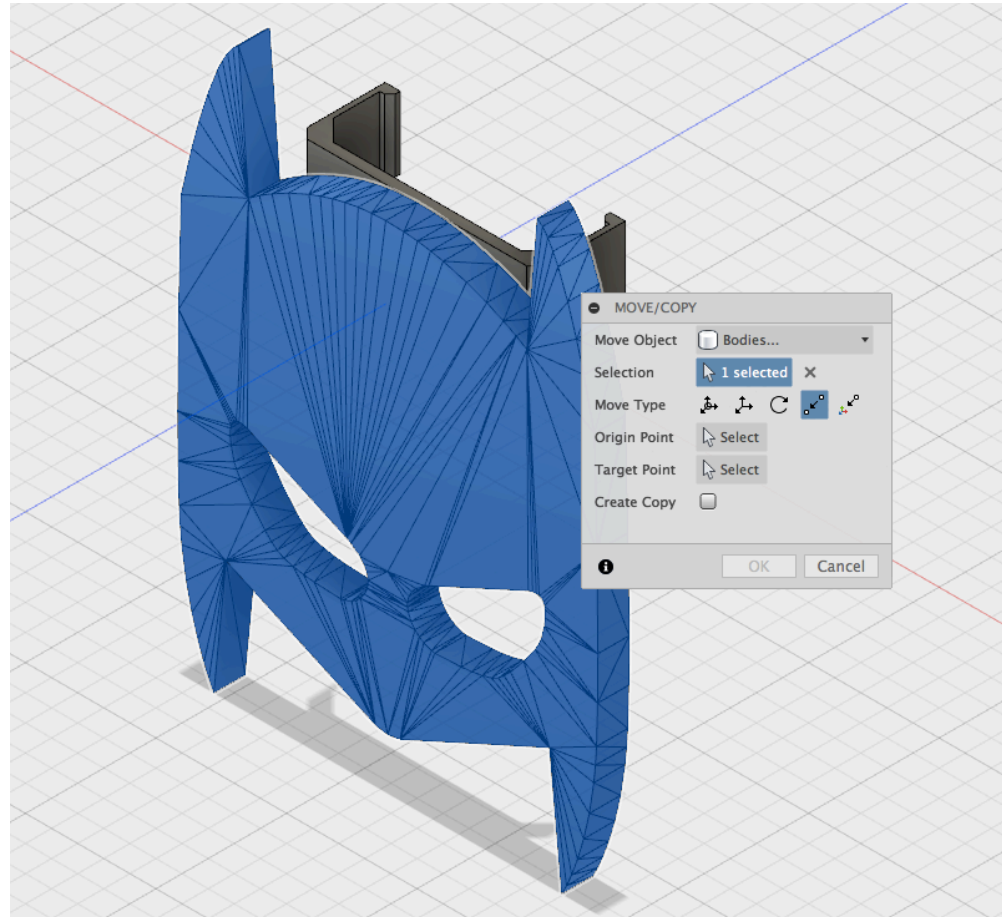
Note: You may need to use the zoom tool to zoom in/out to get the correct point precisely.


# Step 36: The Batman mask is now placed exactly on the side surface of the clip.

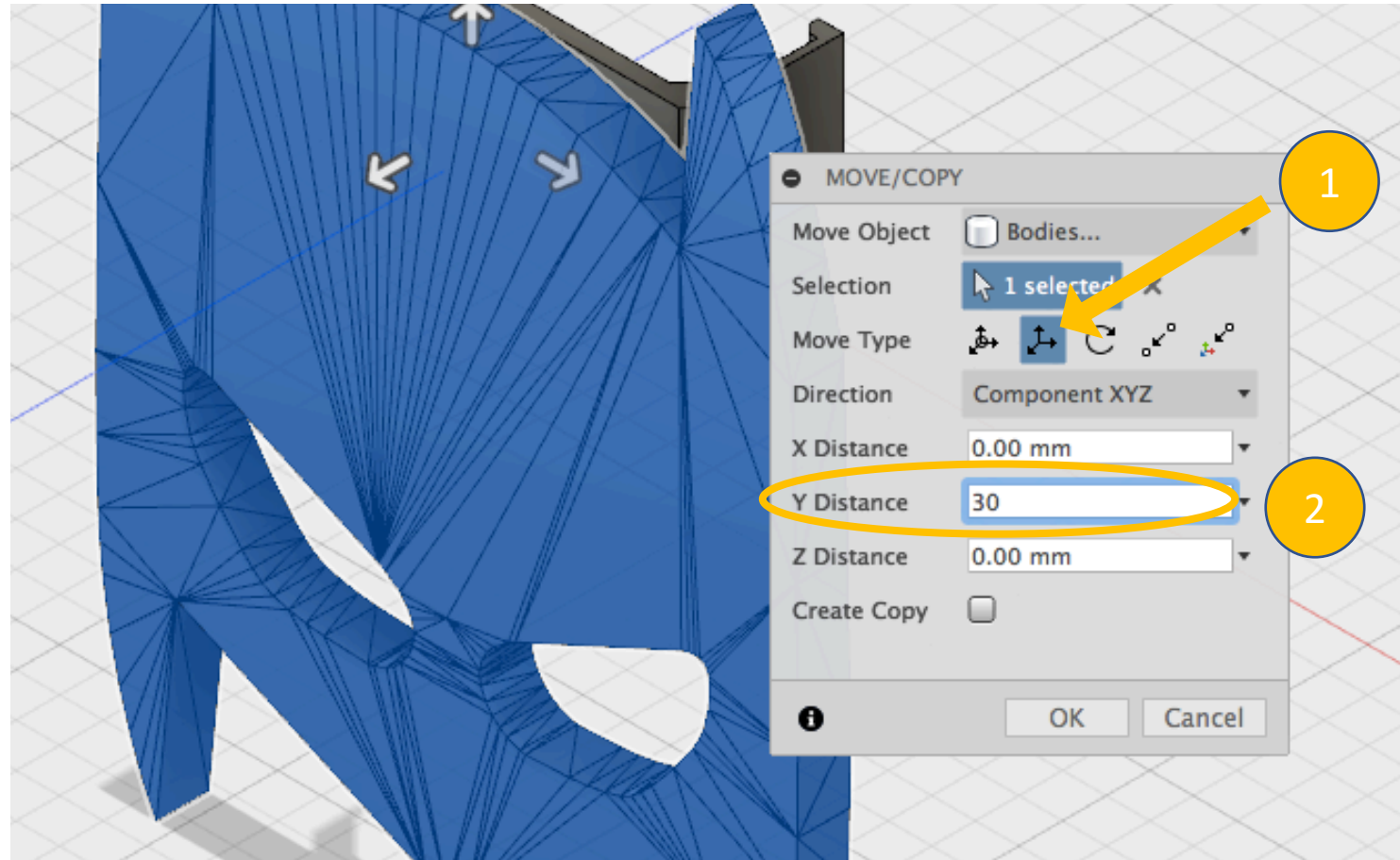


Note: You need to ensure that the mask is placed exactly at the center of the clip, not overlapping the clip and does not have a gap in between. Otherwise, you will need to redo until you get the desired result.

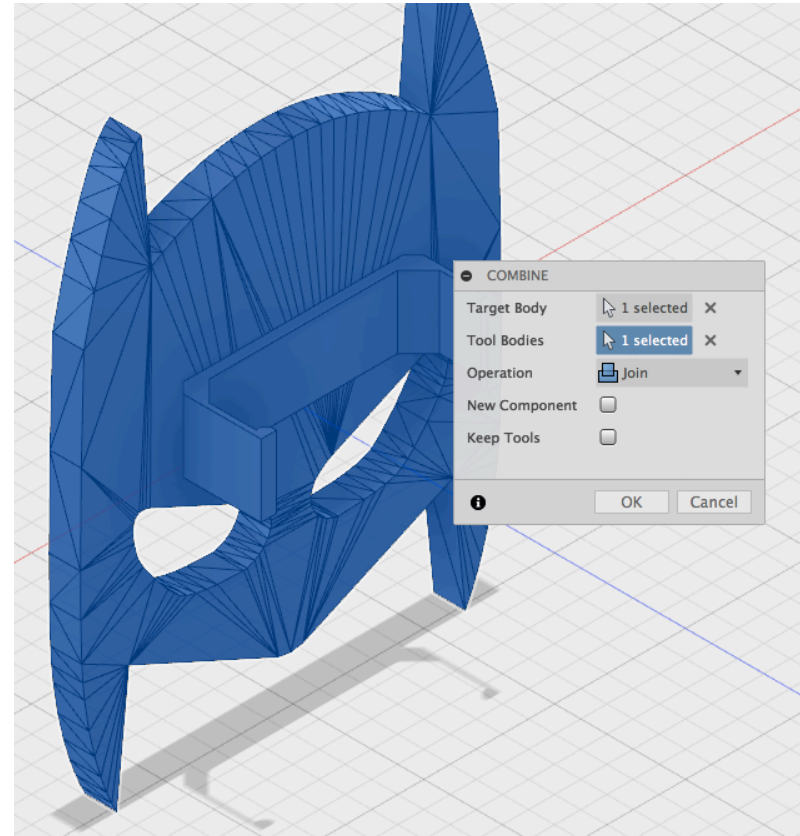
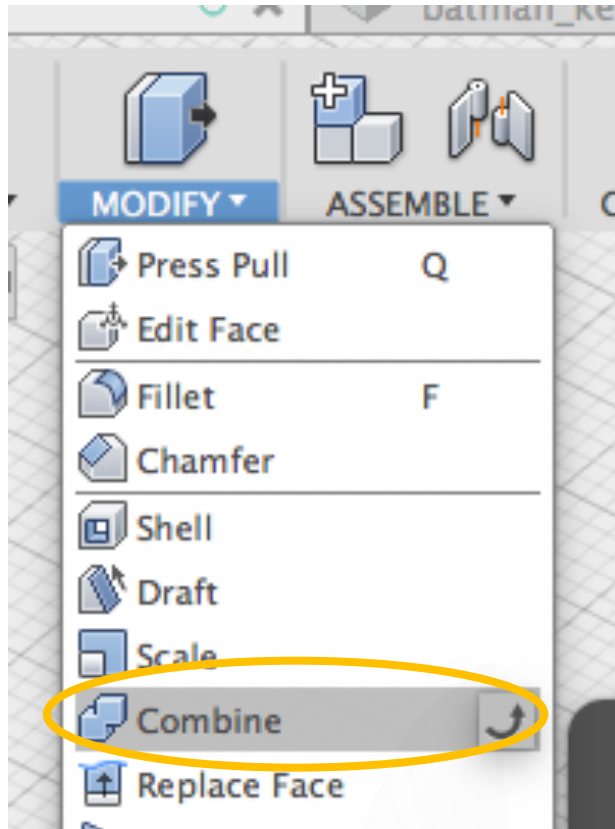
Step 37: Next, go to “Modify” > “Move/Copy” again. Select the mask as the object to move.



Step 38: Click on  then key in “30” at “Y-Distance” to move the mask up by 30mm.

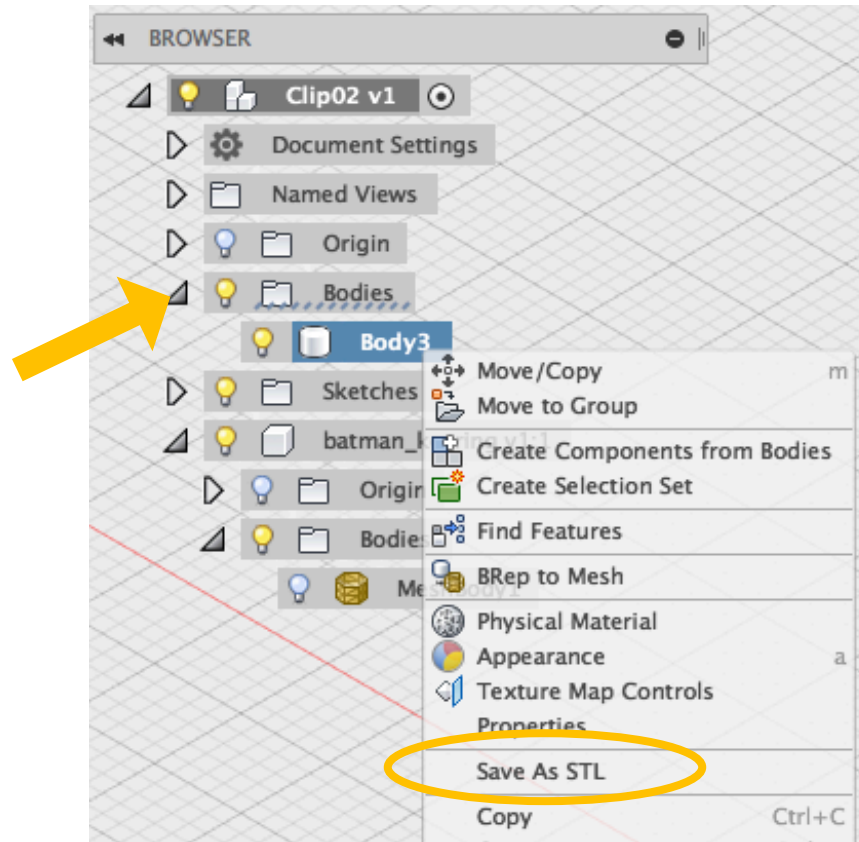


Step 39: Next, go to “Modify” > “Combine”, select both the mask and the clip then hit “Enter”.

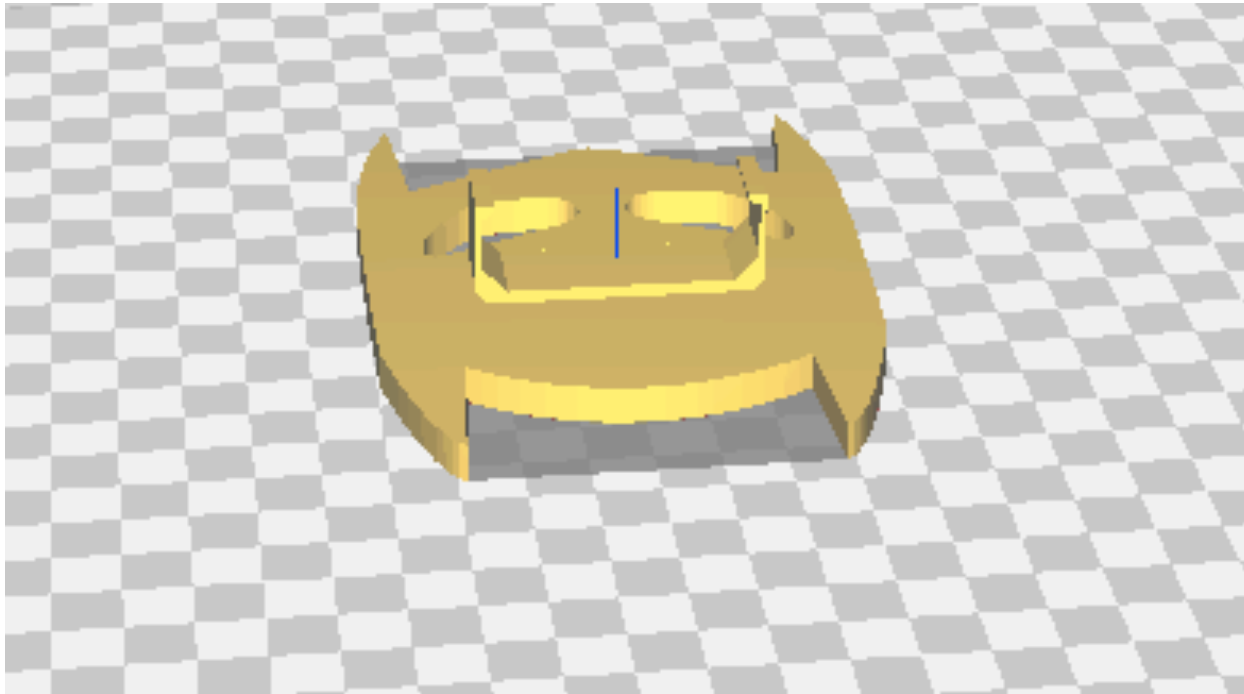




Step 40: Lastly, go to the browser, click ► to expand “Bodies” tab, right-click on “Body3” then select “Save as STL”.



Step 41: As usual, import the STL file into Cura.  
Ensure the printing orientation is correct.





Step 42: Follow this printing setting then save the “G-code” file into a SD card before you send it to your 3D printer.



Profile: Low Quality - 0.15mm ★ ▼

---

**Print Setup** Recommended ☒ Custom

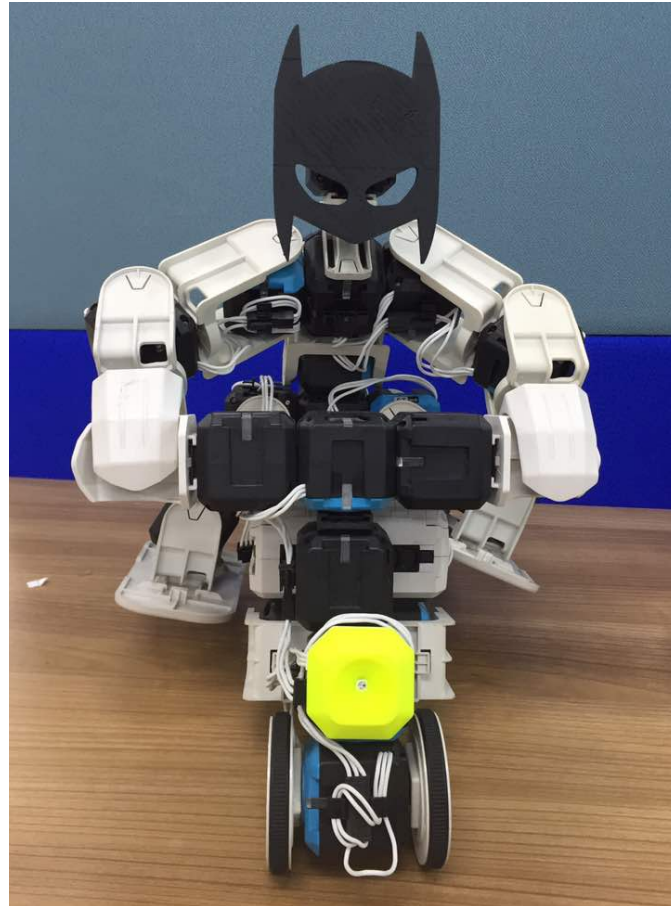
Infill ☐ 0% ☒ 20% ☐ 50% ☐ 100% ☐ Gradual

Generate Support ☐

Build Plate Adhesion ☐

Need help improving your prints?  
Read the [Ultimaker Troubleshooting Guides](#)

Step 43: Once you are done, replace it with the rero Head Module!



# Challenge:



- Try search for a sword from [www.thingiverse.com](http://www.thingiverse.com)
- Combine the sword with the “clip” that you drawn.