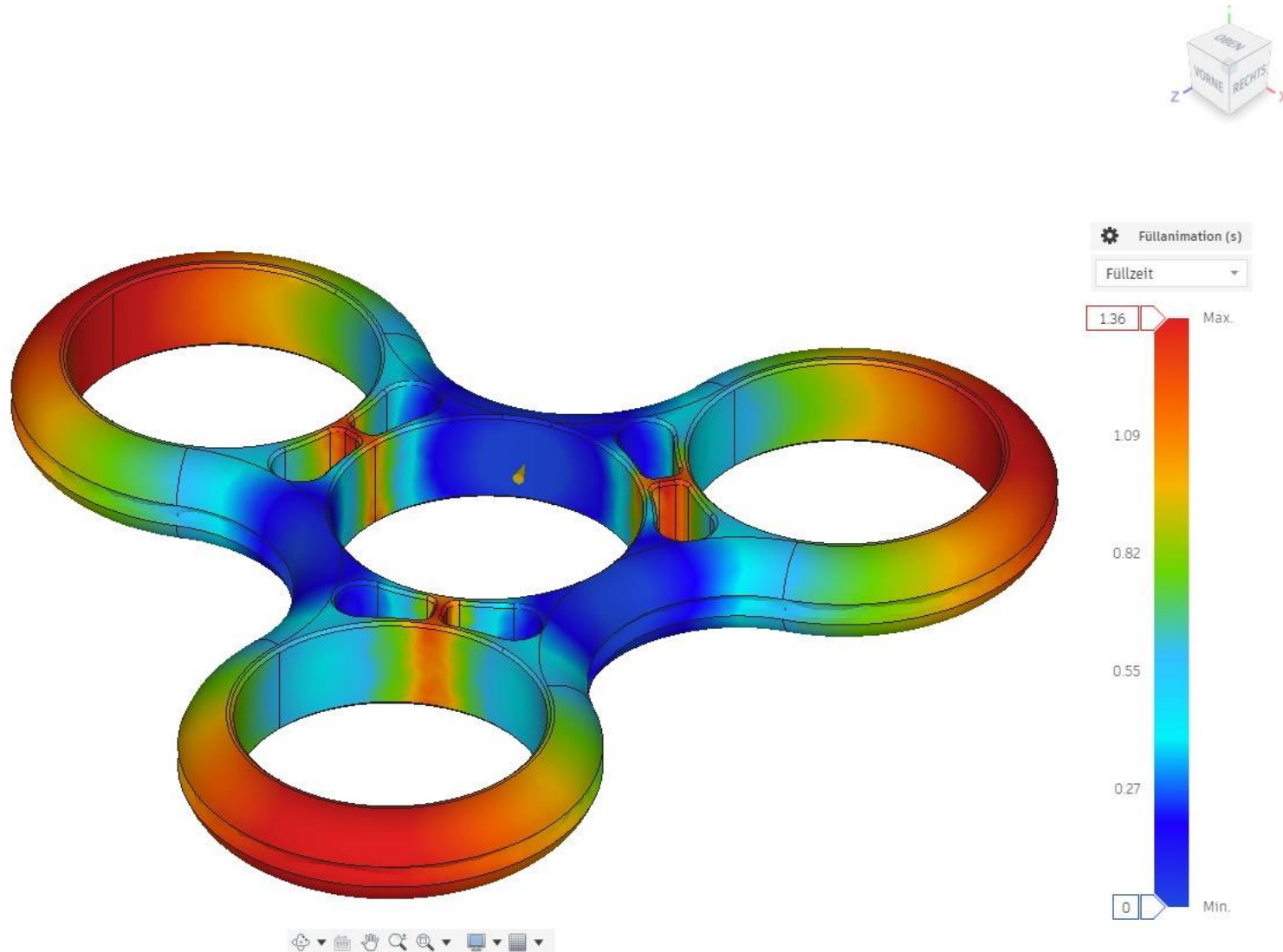


INTRODUCTION TO AUTODESK FUSION



TO GET AUTODESK FUSION



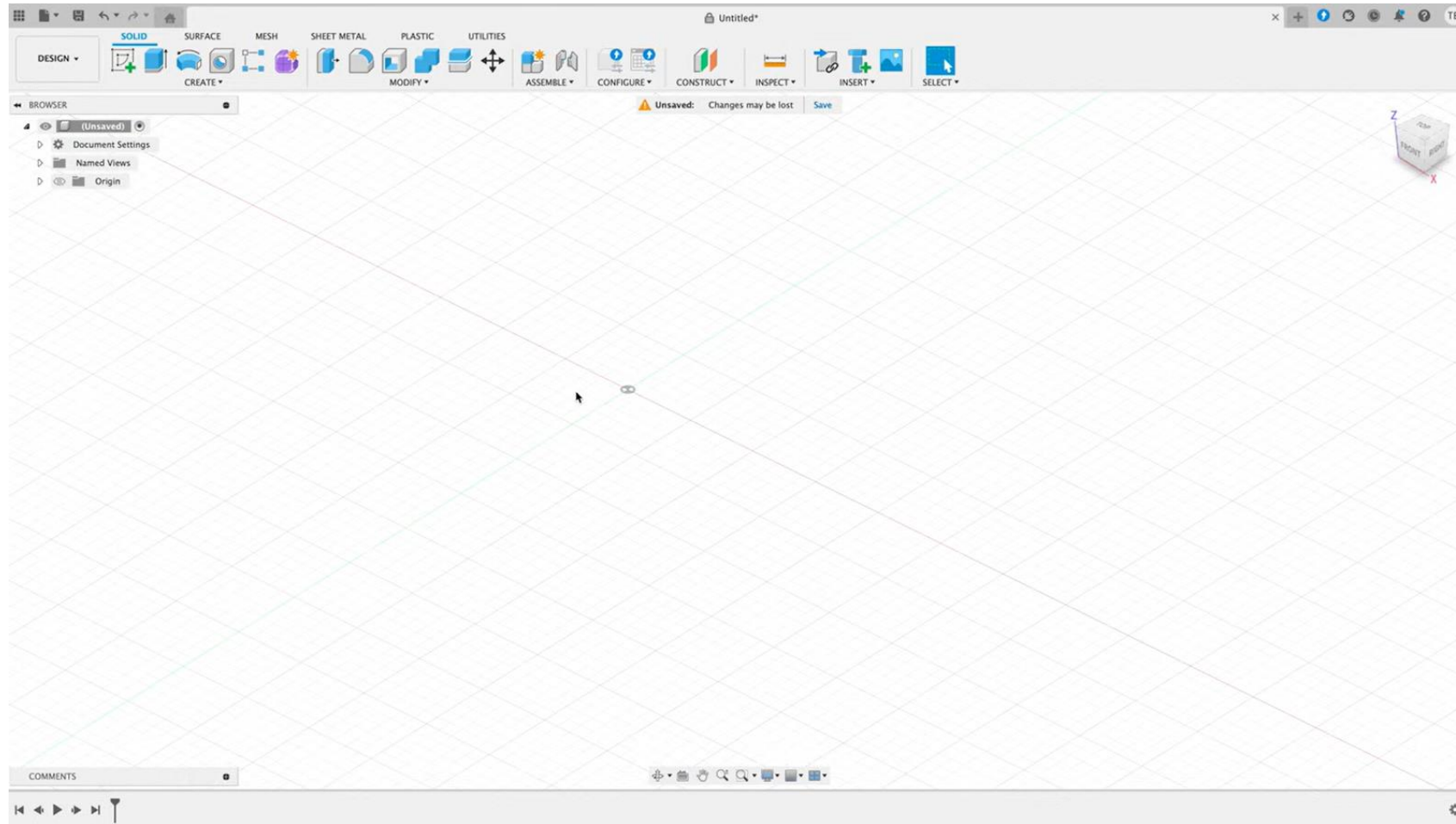
The screenshot shows the Autodesk Fusion website for personal use. The navigation bar at the top includes links for Products, Support, Learn, Community, and Education. Below this, a secondary bar has the Fusion logo (an orange square with a white 'F') and links for Overview, Solutions, and Plans and Pricing. The main content area features a background image of a 3D printed part on a wooden surface. Text on the page includes: "FREE, LIMITED FUNCTIONALITY FOR HOBBYIST USERS", "Autodesk Fusion for personal use" in large bold letters, a paragraph stating it's a limited version for home-based projects, and "Special Terms and conditions for use: For personal, non-commercial projects only. Limited to individuals generating less than \$1,000 USD annually and not for use in primary employment, company environments, or commercial training." At the bottom, there are two buttons: "Get Autodesk Fusion for personal use" and "Try full functionality for free".

- Free, limited functionality for hobbyist users

The screenshot shows the Autodesk Fusion website for education. The navigation bar at the top includes links for Products, Support, Learn, Community, and Education. Below this, a secondary bar has the Fusion logo and links for Education, Products, Students, Educators, Administrators, and Get Help. The main content area features a dark background. Text on the page includes: "Autodesk Fusion for education" in large bold letters, a paragraph stating it brings next-generation workflows into courses with an intuitive, modern 3D modeling, CAD, CAM, CAE, and PCB software platform that's easy to learn and teach, and that Fusion is free for education and available on PC, Mac, and Chromebook. At the bottom, there is a button labeled "Download Fusion installation guide".

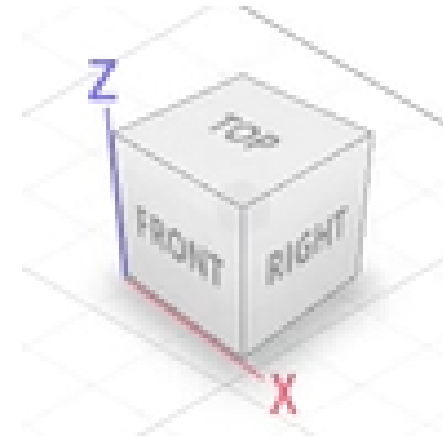
- One-year, free license for students

THE INTERFACE



MOVING AROUND VIEWPORT

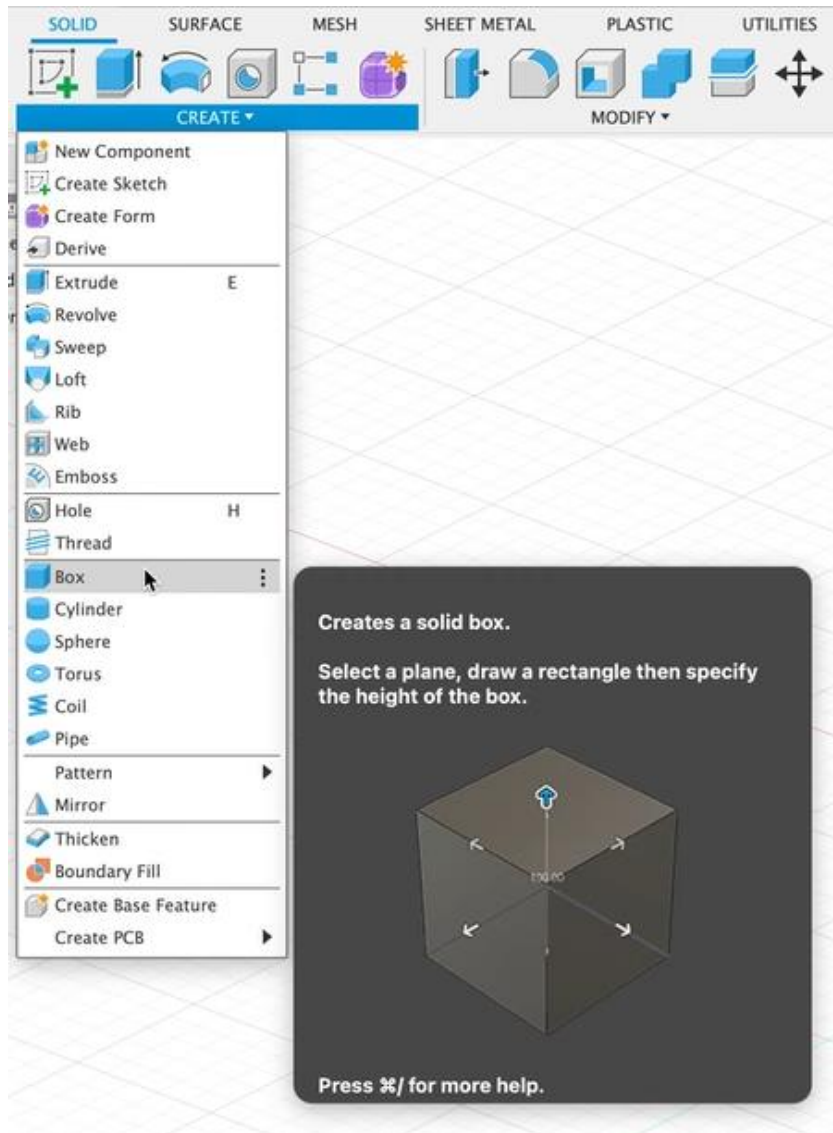
	Trackpad	Mouse
Pan		
Zoom		
Orbit		



- Important to keep in mind how to navigate through the 3D view.
- Remember to use **the shift key** to rotate the view.



HOW TO CREATE A OBJECT – PREMADE SHAPE



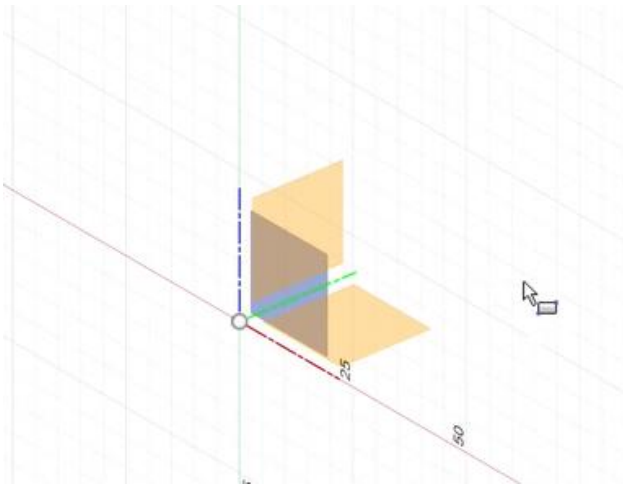
- Box
- Cylinder
- Sphere
- Torus
- Coil
- Pipe

Follow the instruction:

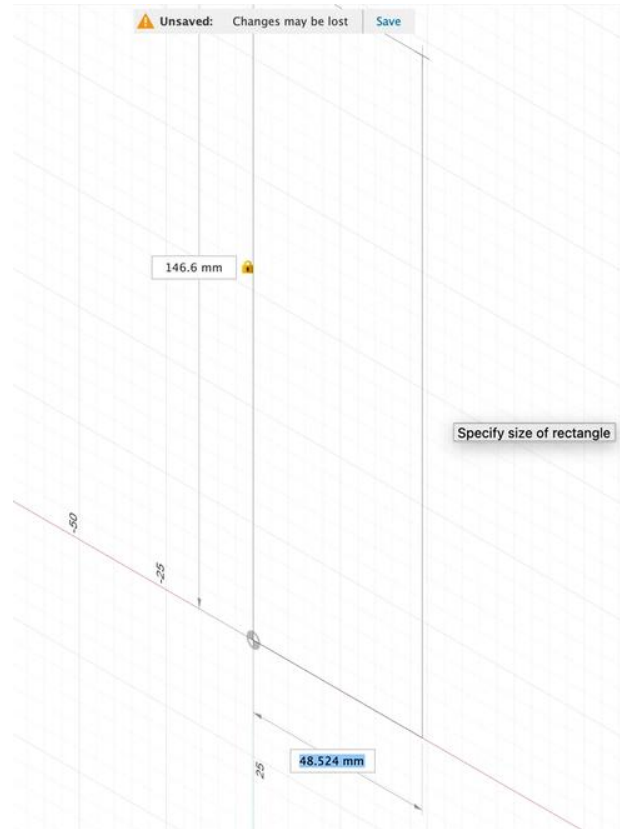
“Select a plane, draw a rectangle then specify the height of the box”



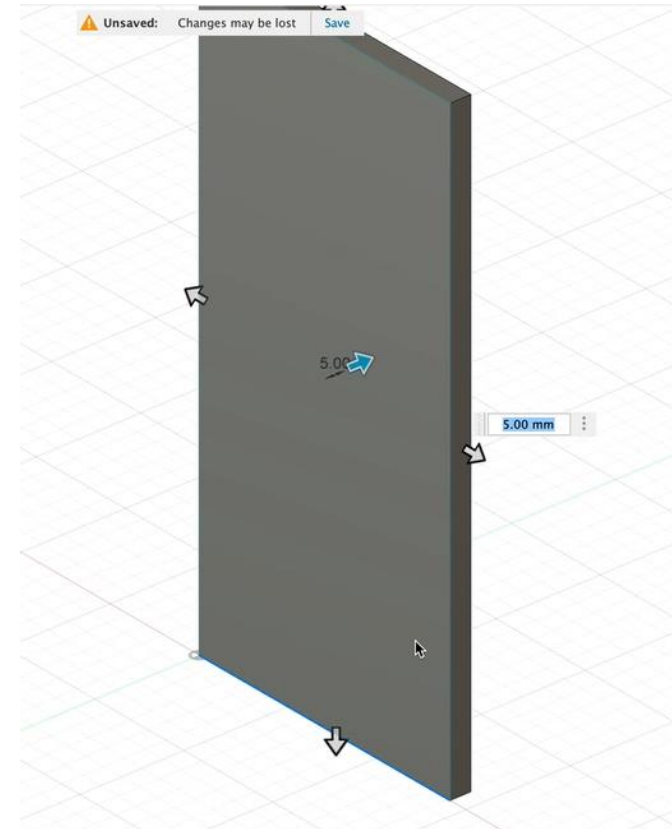
HOW TO CREATE A OBJECT – PREMADE SHAPE



1. Select a plane



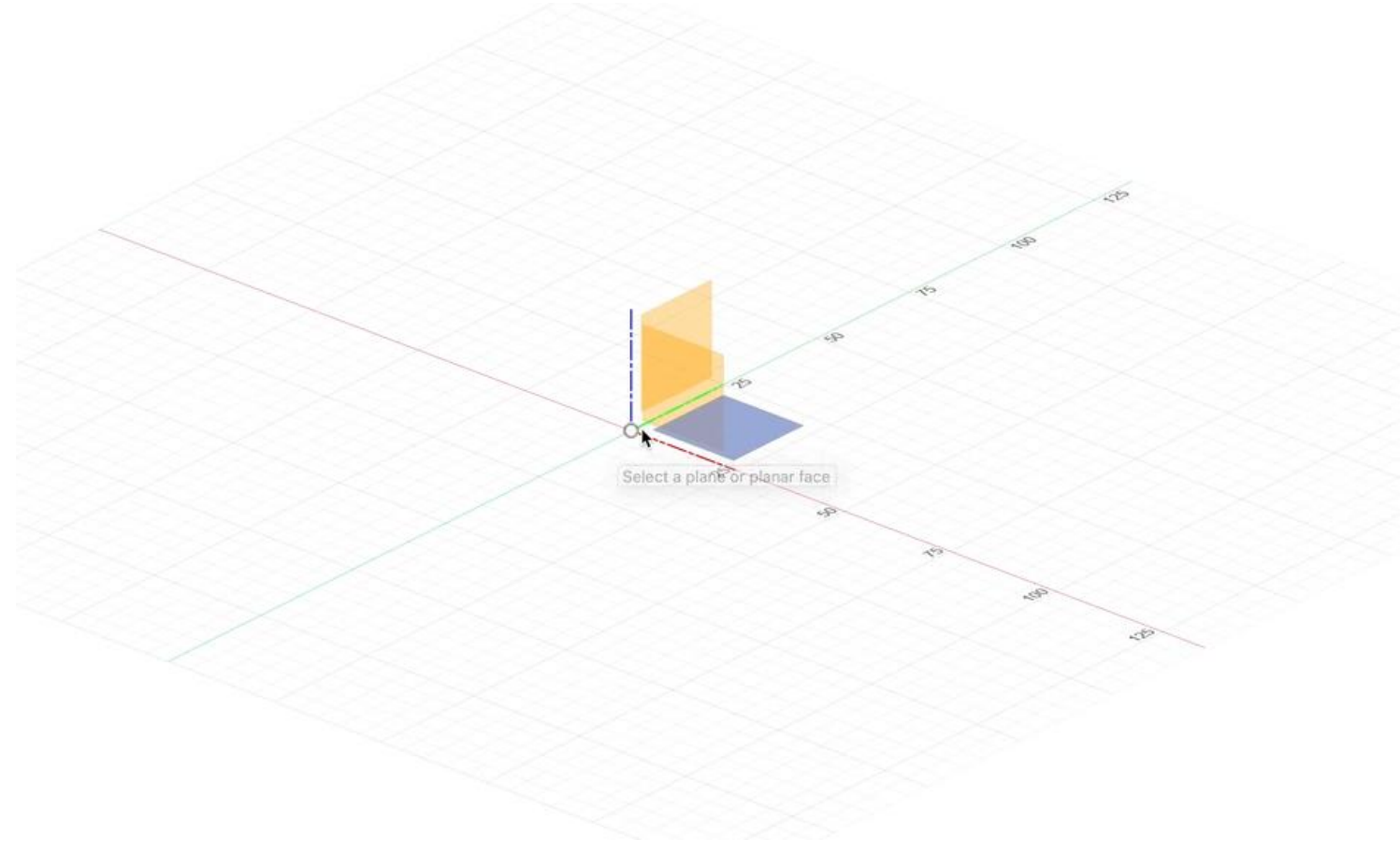
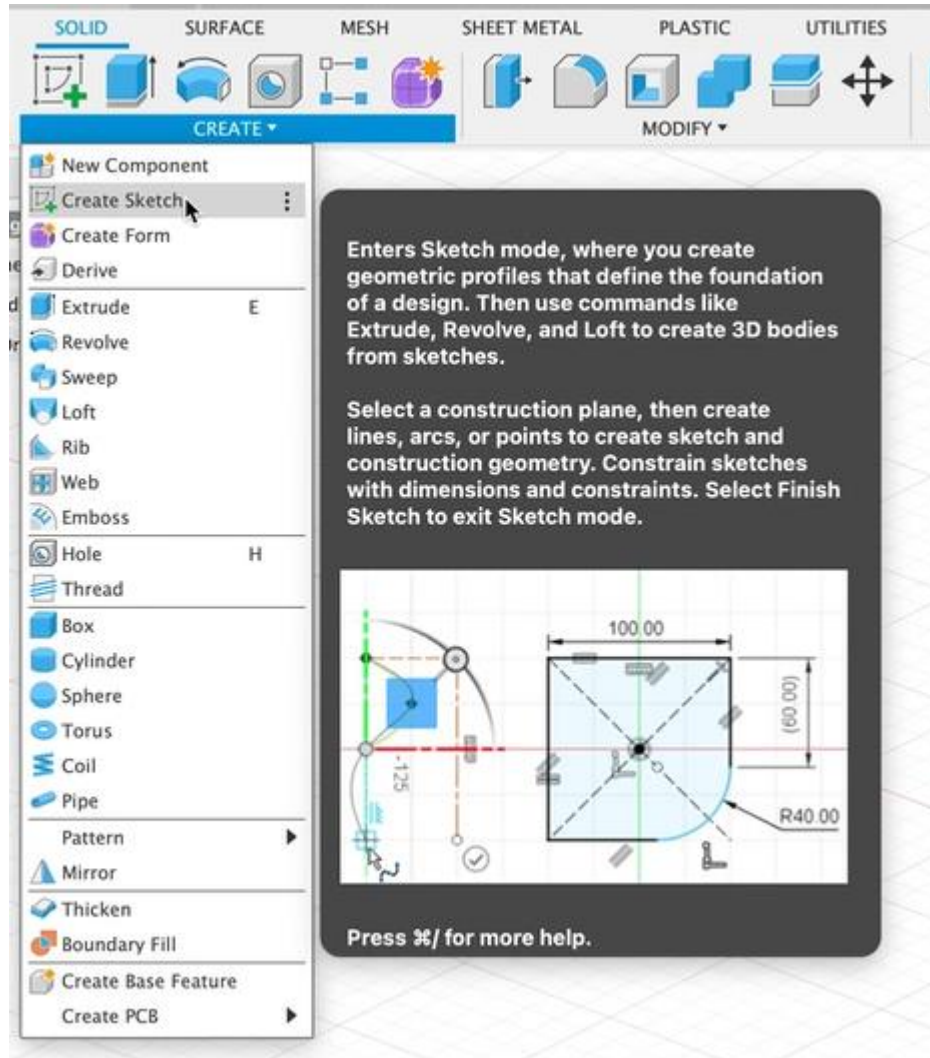
2. Draw a rectangle



3. Specify the height



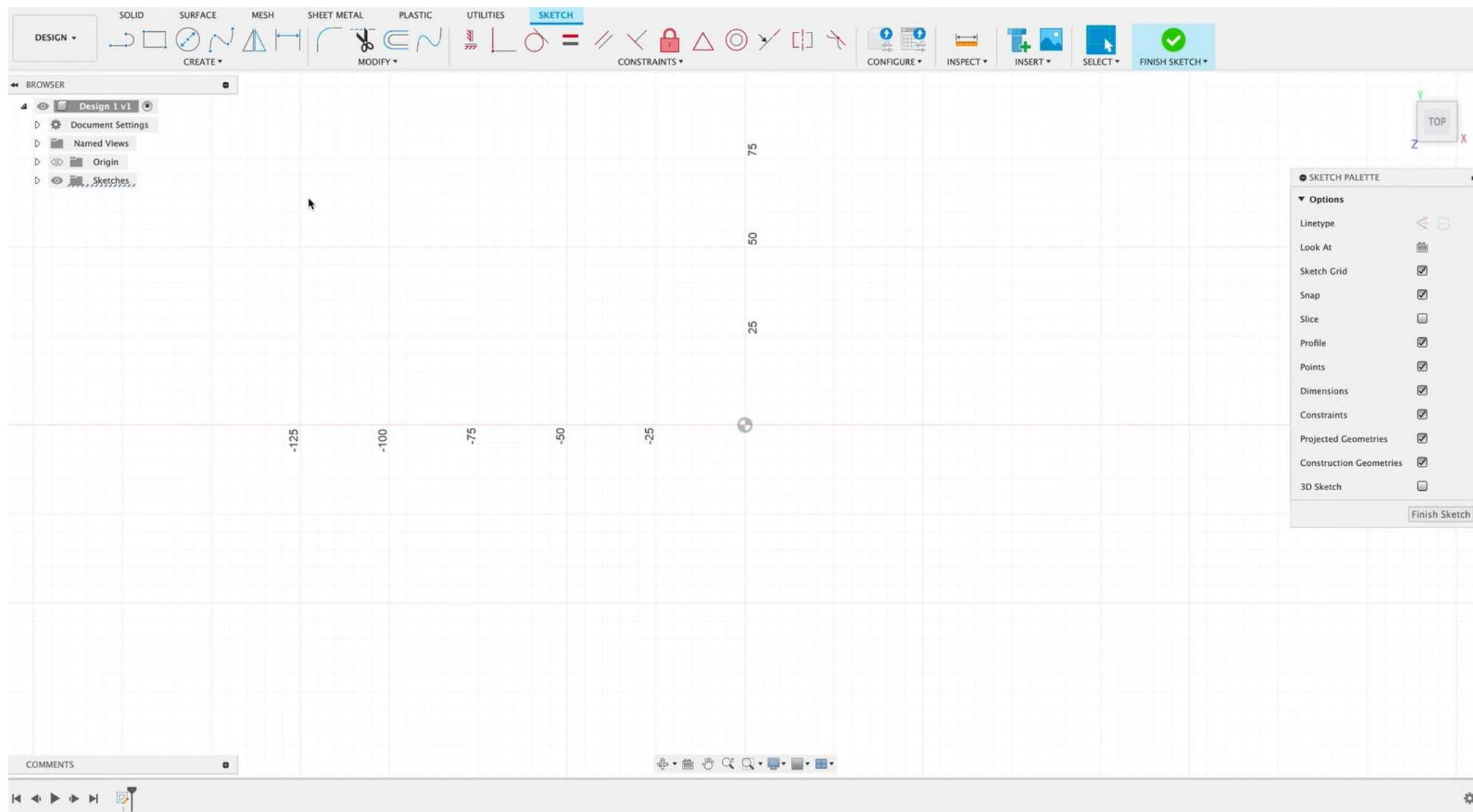
HOW TO CREATE A OBJECT – CREATE A SKETCH



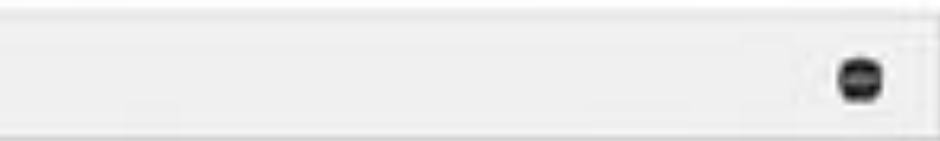
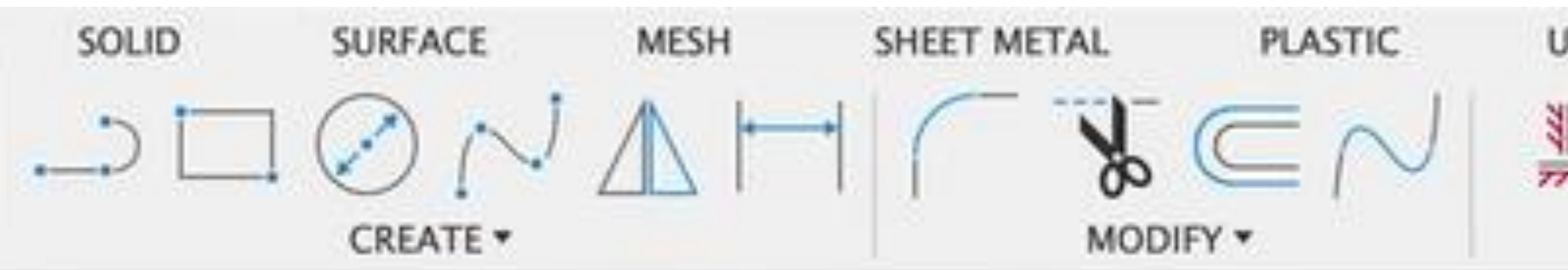
- Select a construction plane



CREATE A 2D SKETCH



CREATE A 2D SKETCH



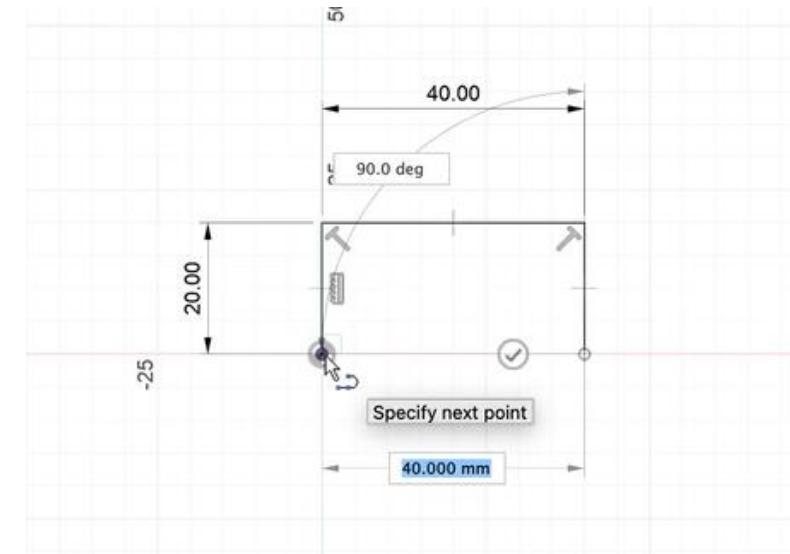
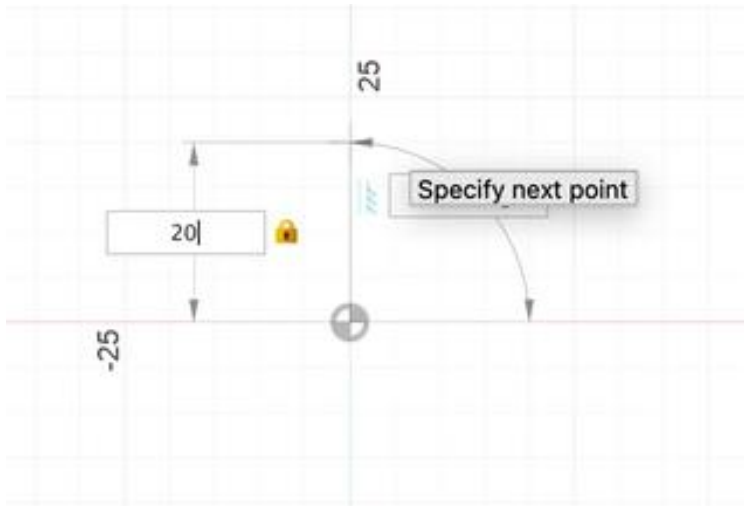
Design 1 v1


Feature Tree

Sketch1



CREATE A BOX



- Click on the  tool or press “L”
 - A start point
 - A distance/angle or next point
-
- Do it multiple time and we can get a closed shape



CREATE A CIRCLE

- Various way to draw a circle

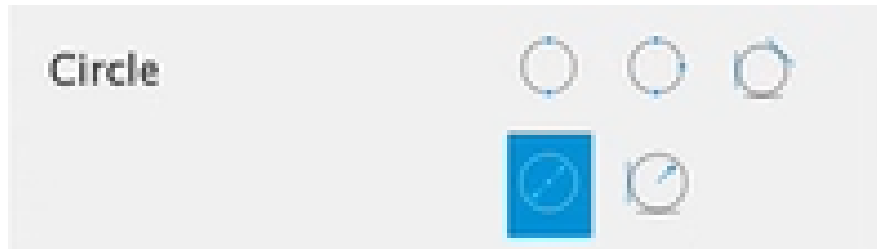
Center Diameter Circle

Two-Point Circle

Three-Point Circle

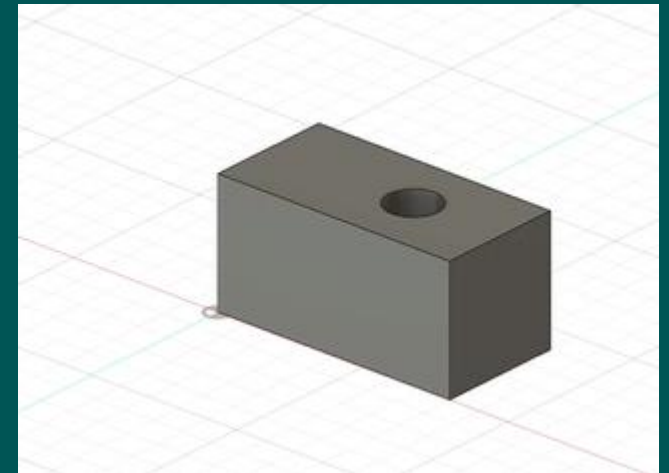
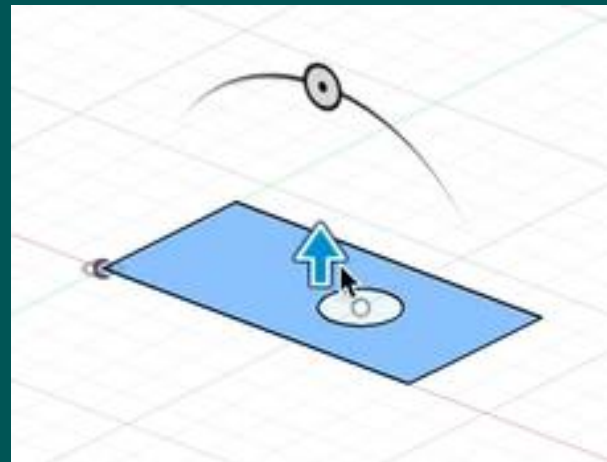
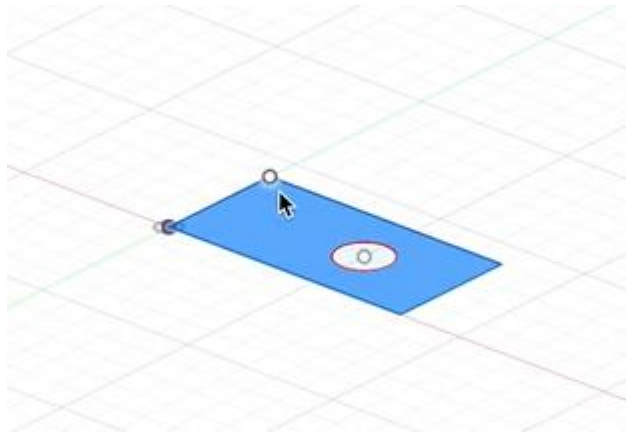
Tangent Circle

- Most common one: center diameter circle



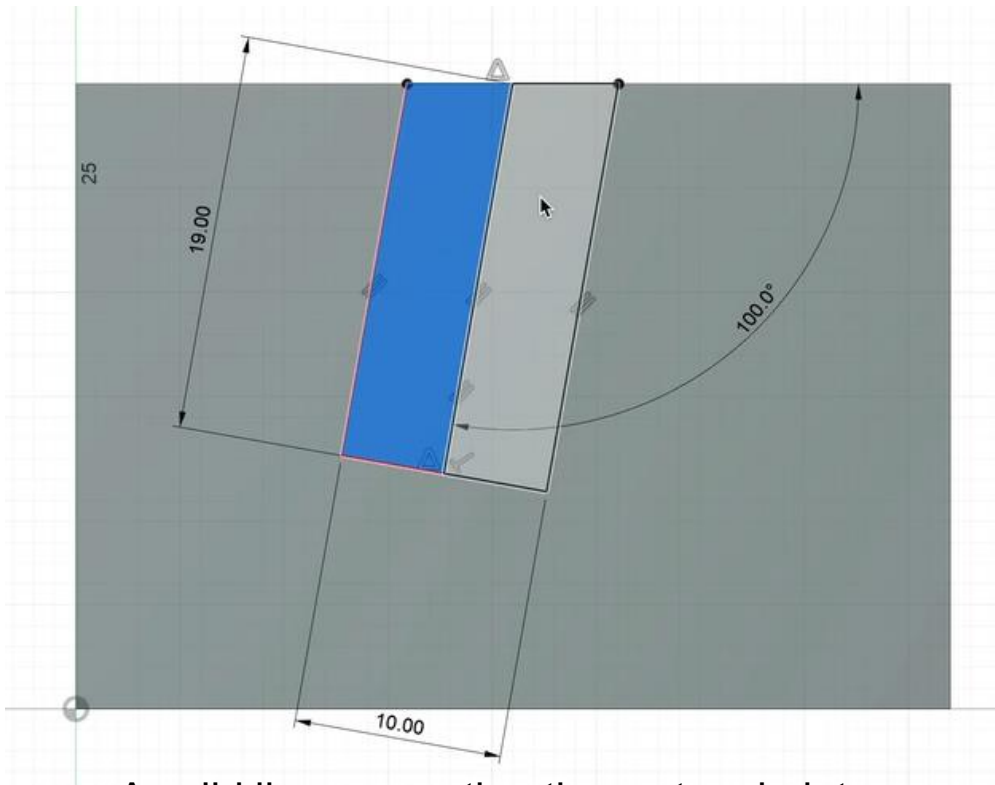
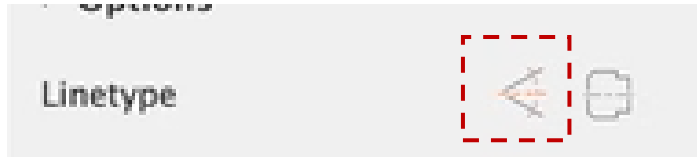


USE THE EXTRUDE TOOL



- Extrude

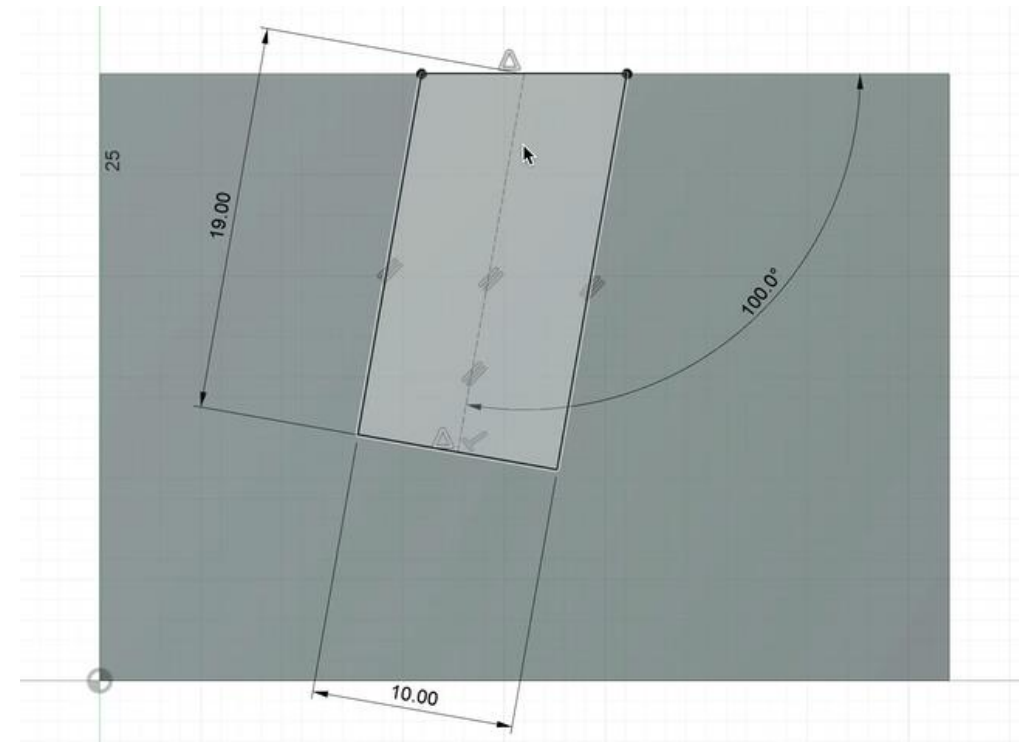
CONSTRUCTION LINE



A solid line separating the rectangle into two rectangles

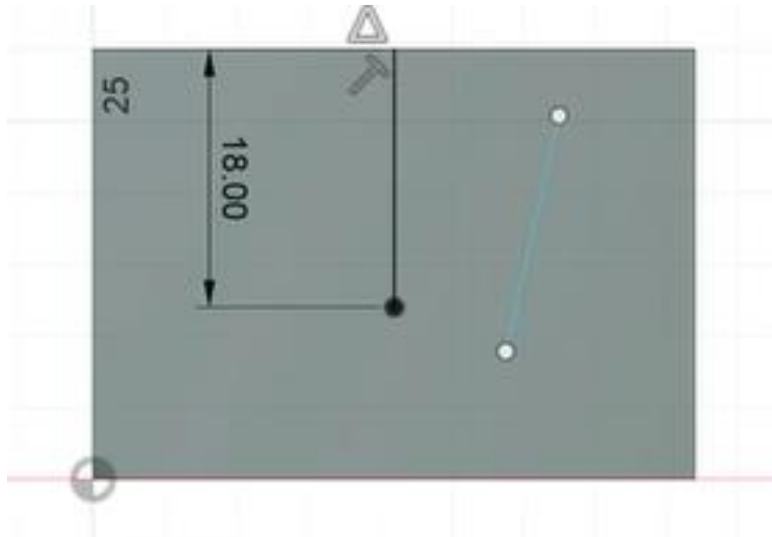


Changing the center line into a construction line



A construction line in the middle but the shape as a whole

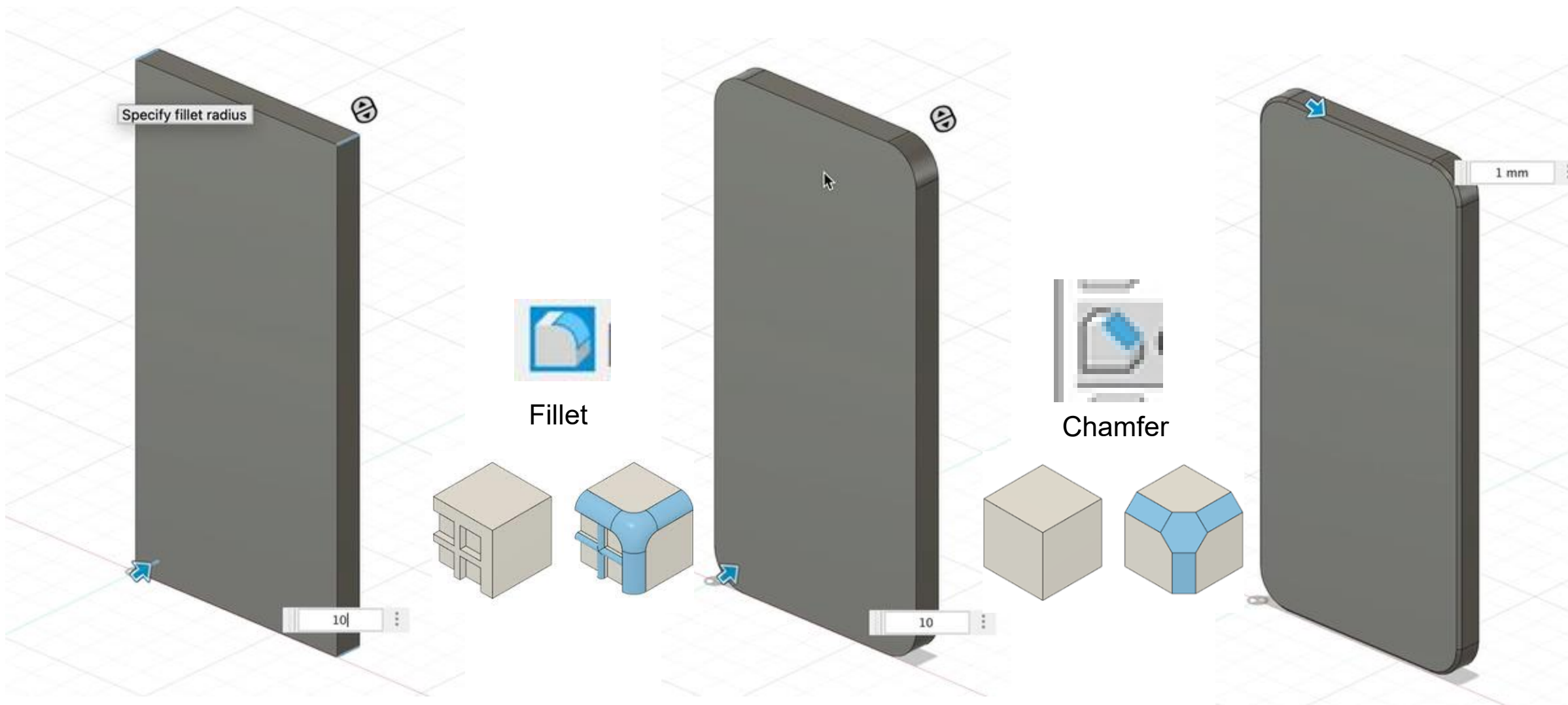
CONSTRAINTS



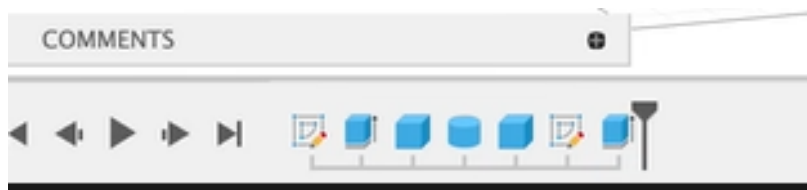
- Black line: constrained line
in this case: a perpendicular constraint
and a midpoint constraint
- Blue line: free line
- Always have you sketch constrained!



FILLET AND CHAMFER

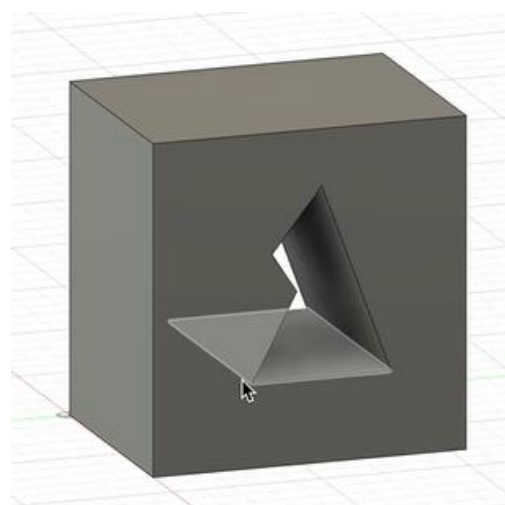


TIMELINE

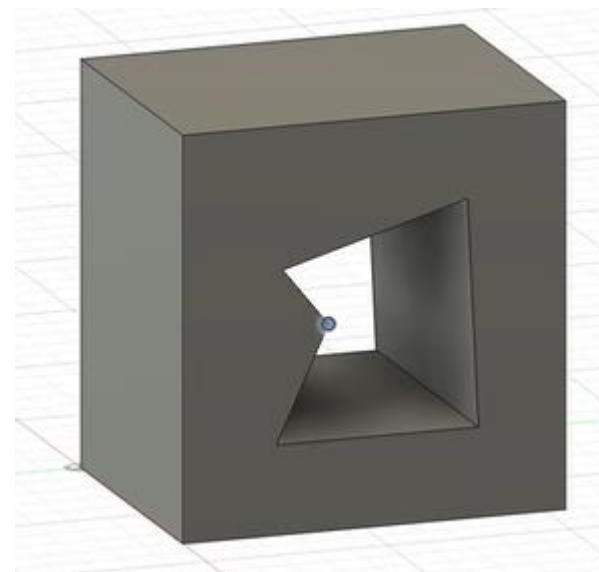
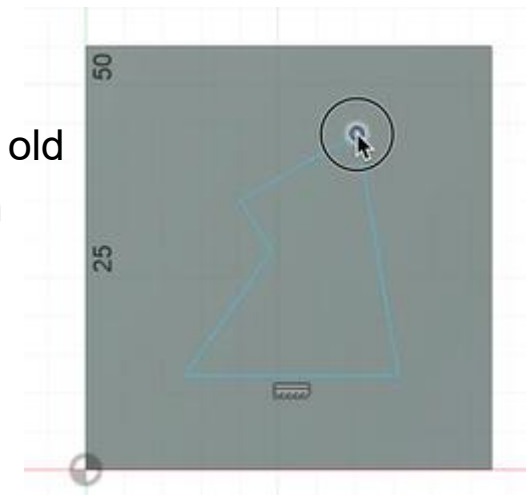


- Bring you back to specific actions

You can easily change the dimensions you set before and have the final results change as well

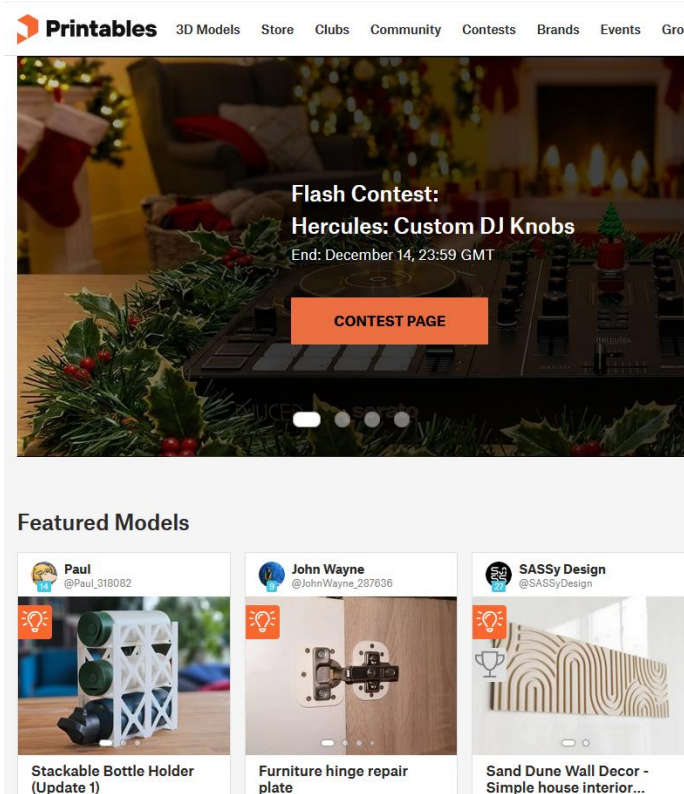


Go back to a old sketch action



The final shape is also changed

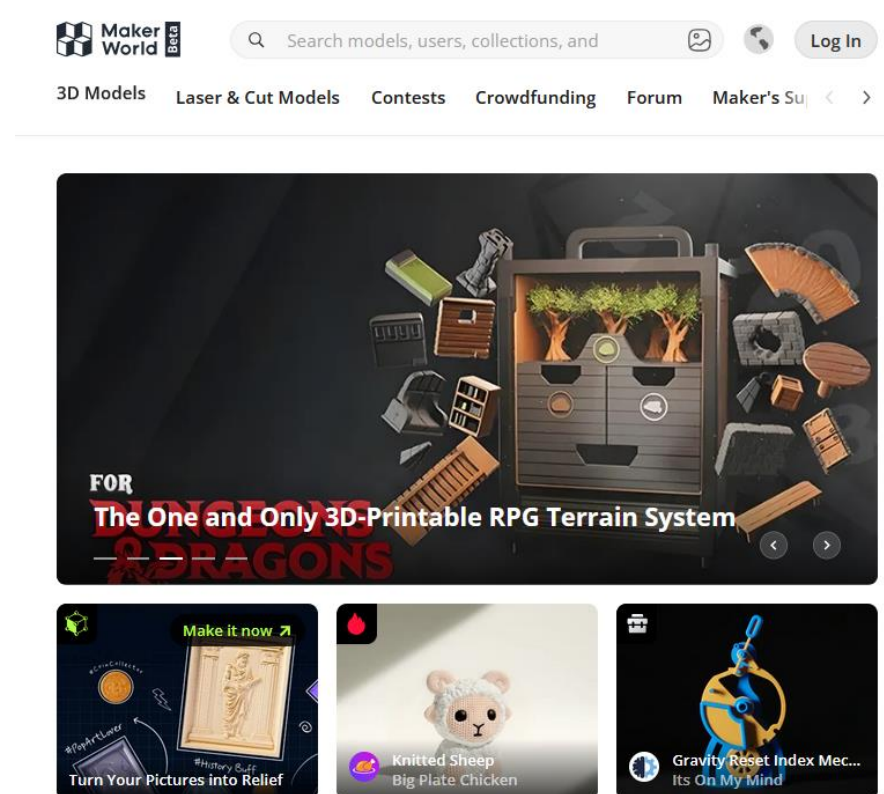
WHERE YOU CAN GET NICE 3D PRINTABLE MODELS



<https://www.printables.com/>

Printables

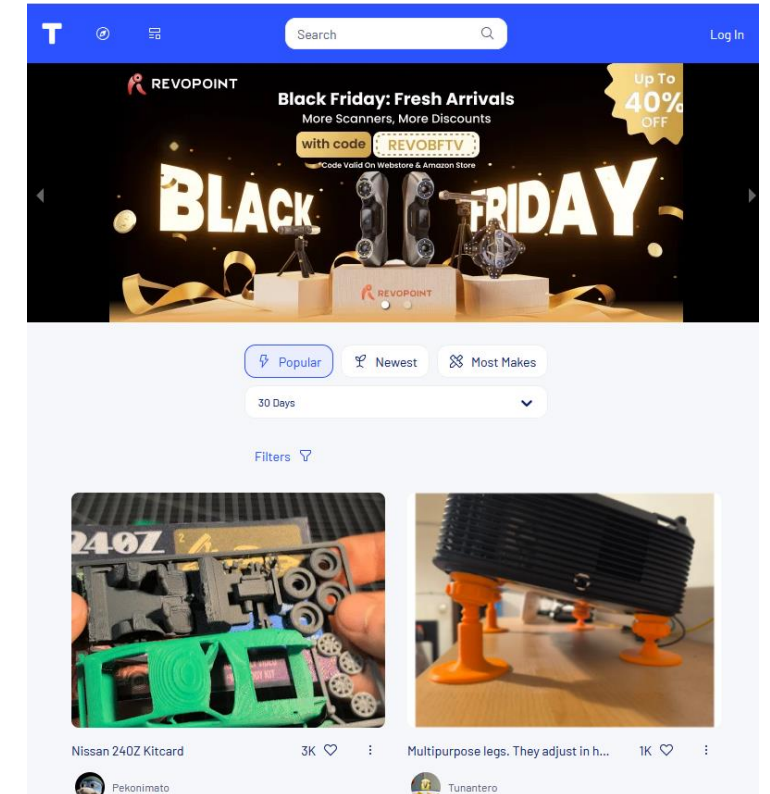
From Prusa



<https://makerworld.com/en>

Maker world

From Bambu lab



<https://www.thingiverse.com/>

Thingiverse

From Ultimaker



BIOFABRICATION AND BIOMATERIALS INNOVATION

Włodarczyk-Biegun,
Biomaterials 2017

