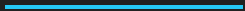


Features

Are applied to 2D sketches to produce 3D parts

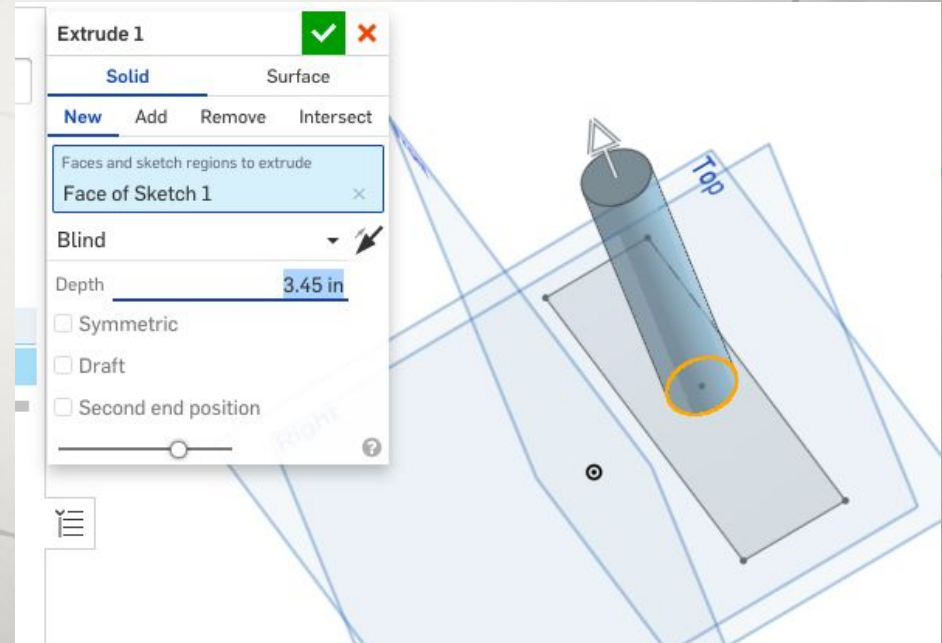
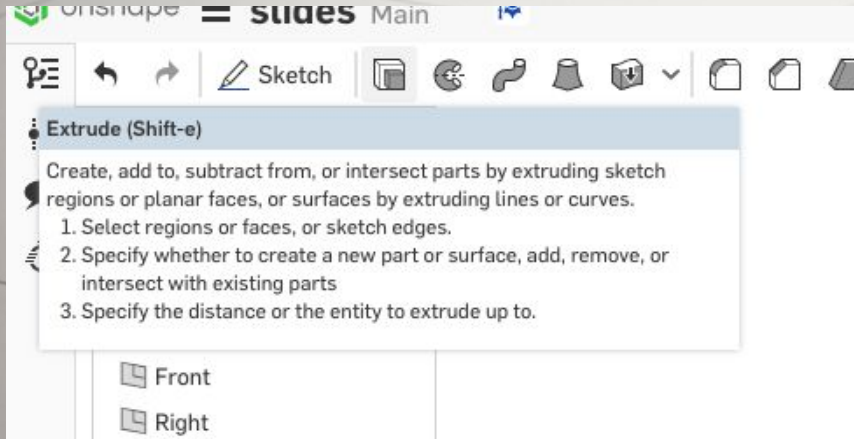




Extrude

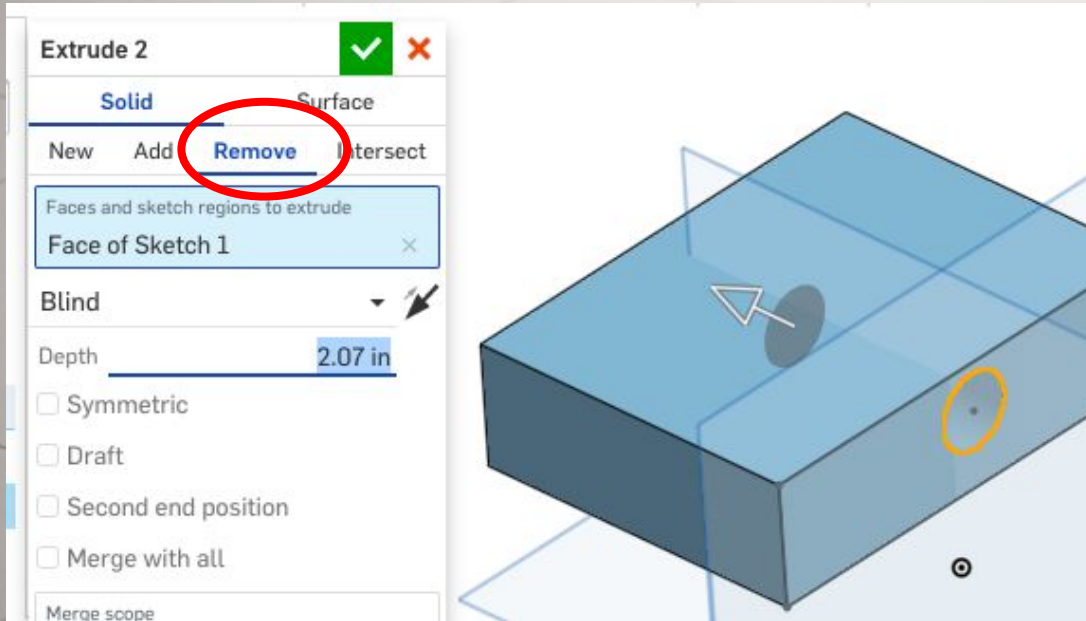
Extrude

AFTER you leave your sketch, click extrude in the top left then select shapes from your sketch. You do not have to select all of them. Change the depth by typing it in manually, or pulling the arrow at the top.



Extrude

The extrude is added to your features list and the sketch you used automatically becomes hidden.



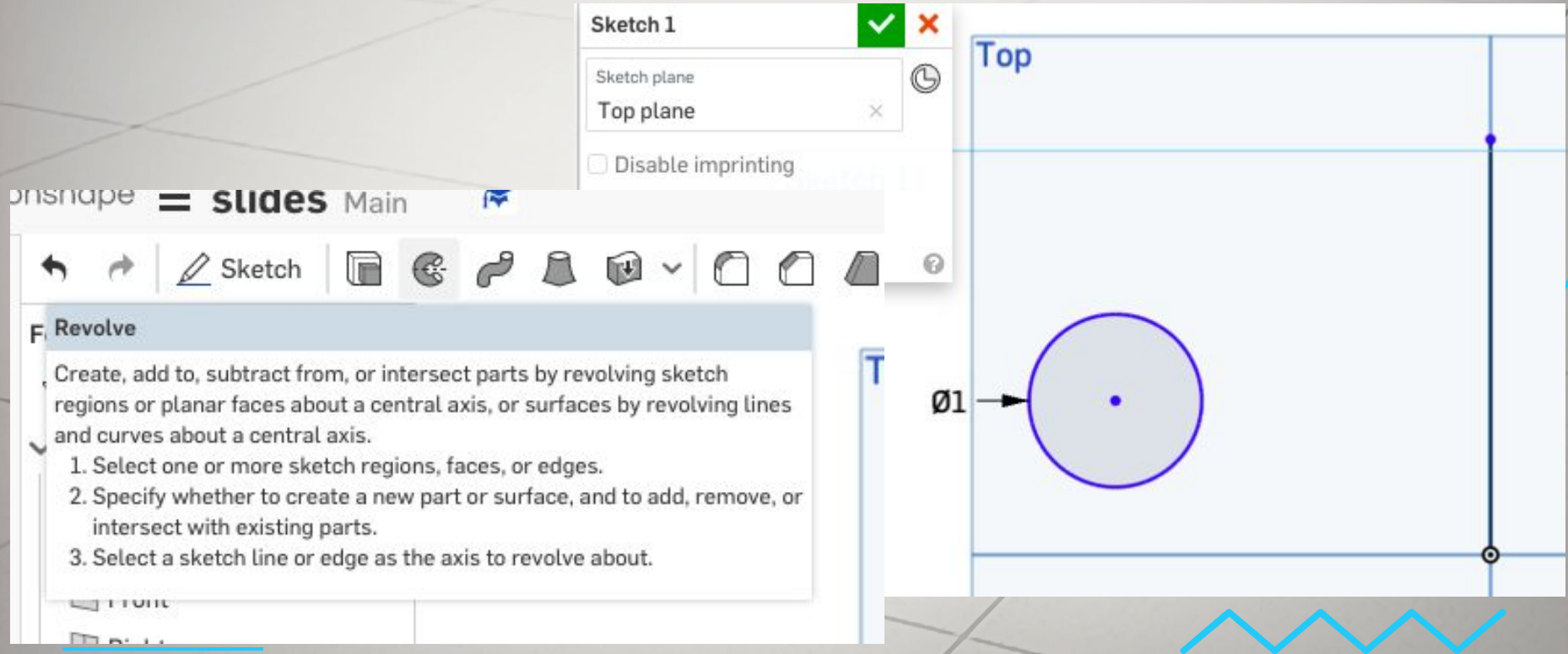
To remove material instead of adding it just press remove at the top of the extrude panel that appears. You still need to select one or more shapes from sketch.



Revolve

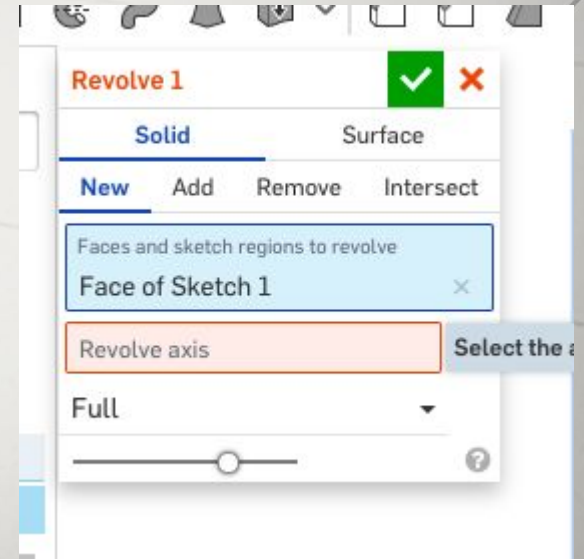
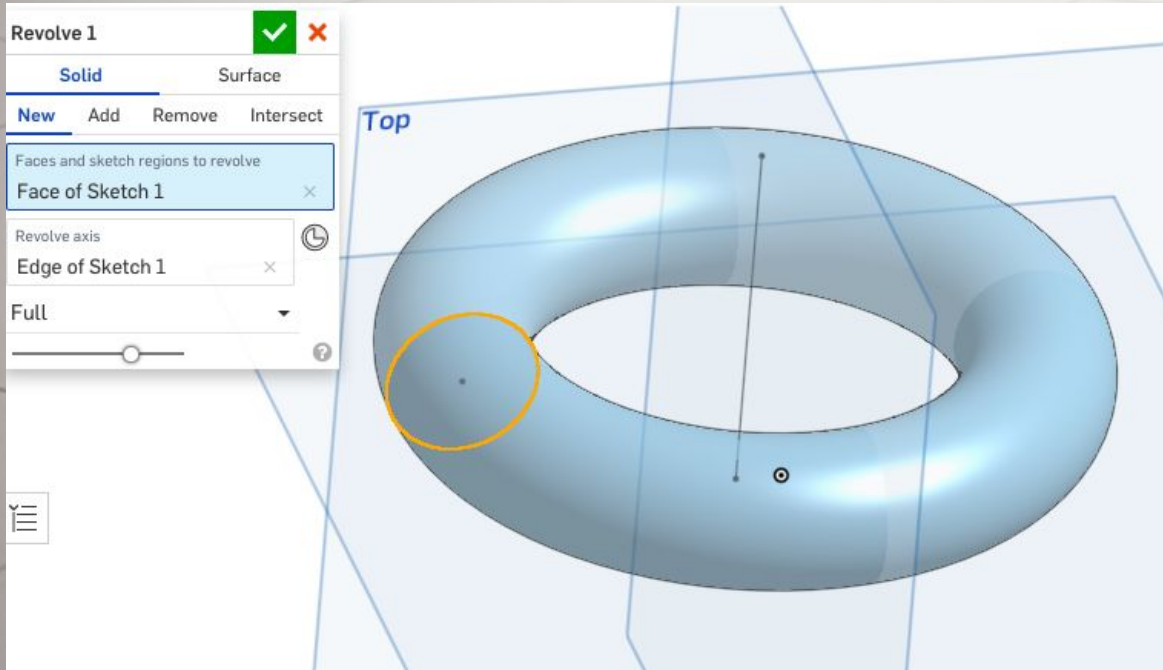
Revolve

Spins a shape around an axis. We have created a shape to be 'spun' and a line that will be the axis.



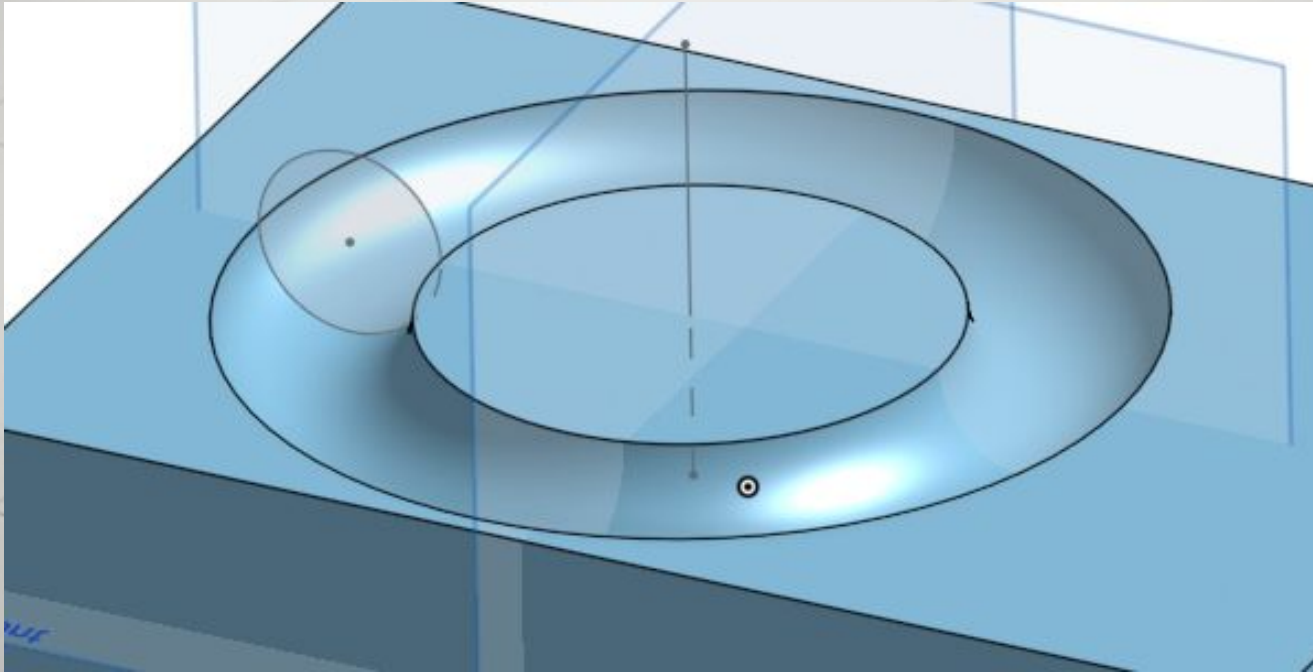
Revolve

Select the revolve tool in the top left and choose a shape to be revolved. Then click on the revolve axis block on the revolve panel, and select the line that you want the shape to revolve around.



Revolve

Like extrude you can select remove to remove that shape from another one.

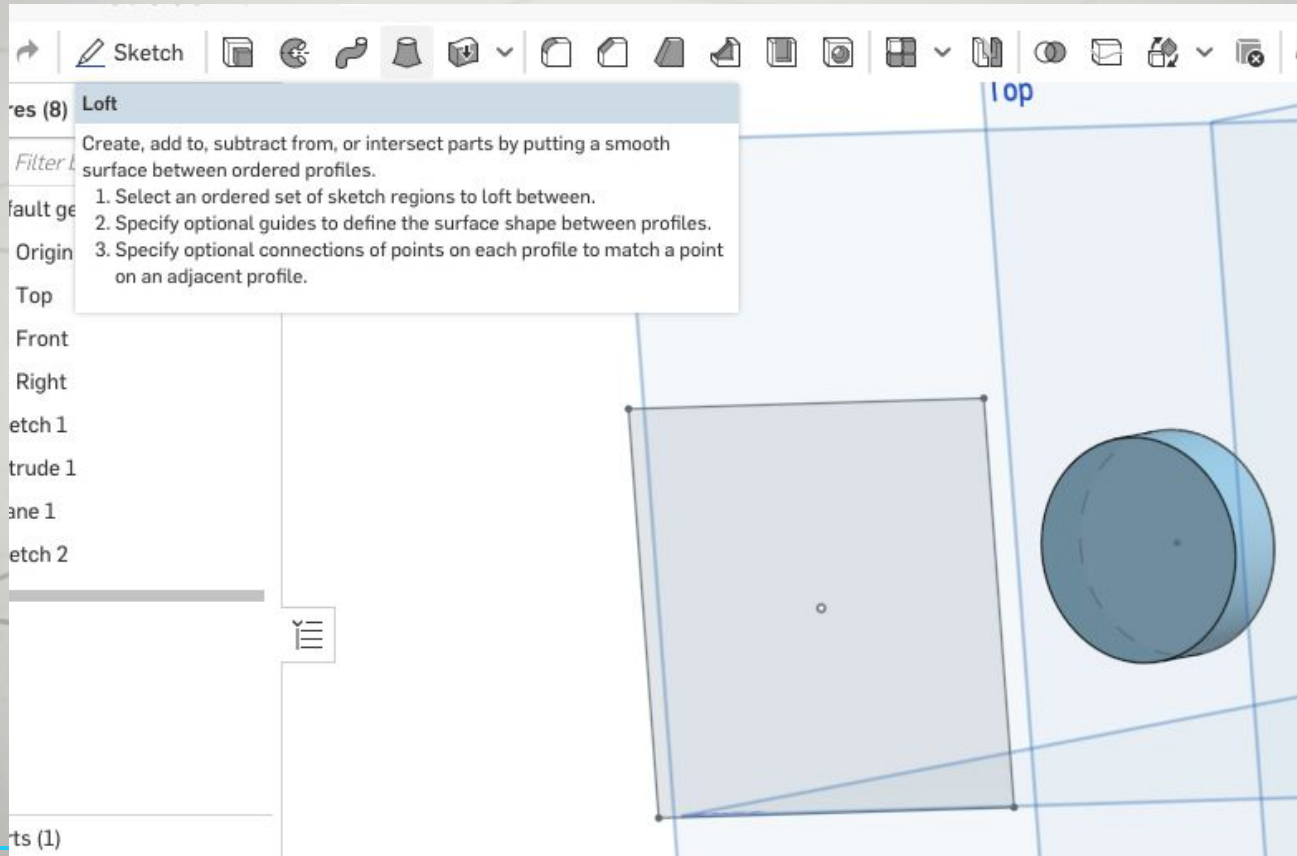




Loft

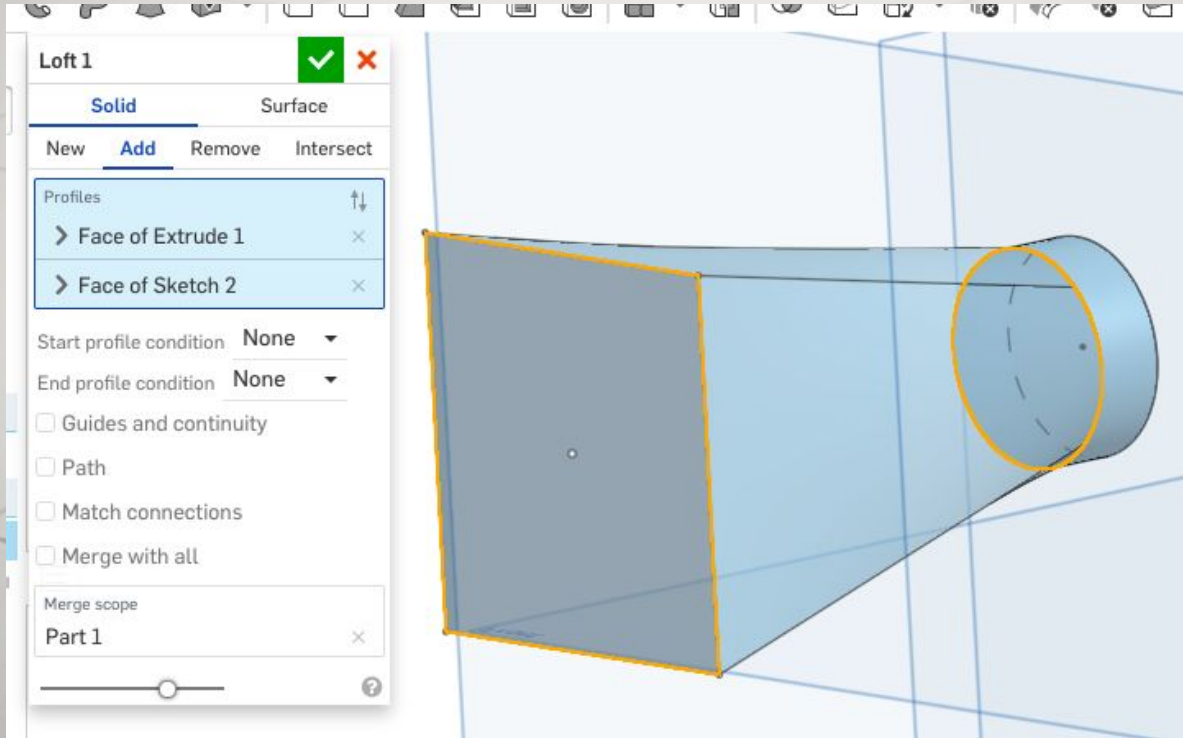
Loft

Used to connect two different shapes (ex: circle and square)



Loft

Click the loft tool then select the faces you want to connect. Once again you can click remove instead.





Sweep

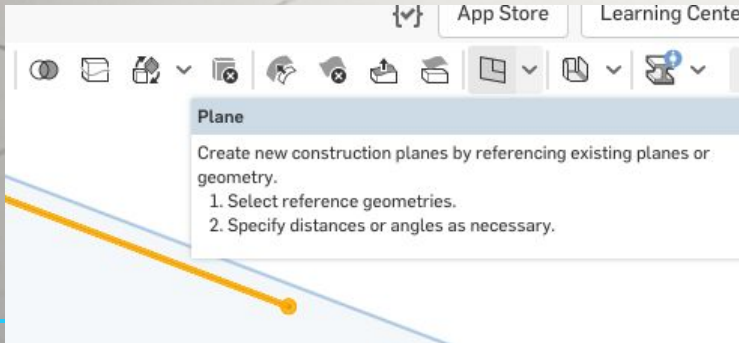
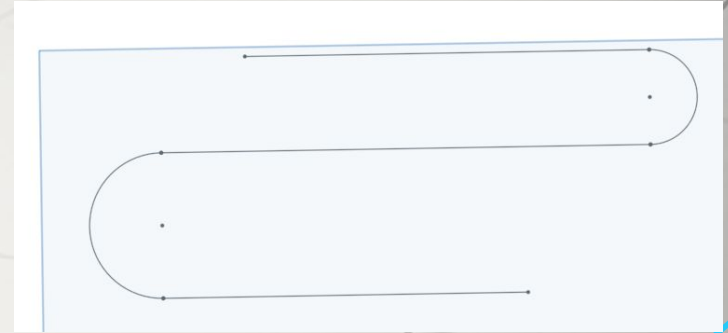
Sweep

Similar to revolve, but instead of going around an axis, it follows a path.

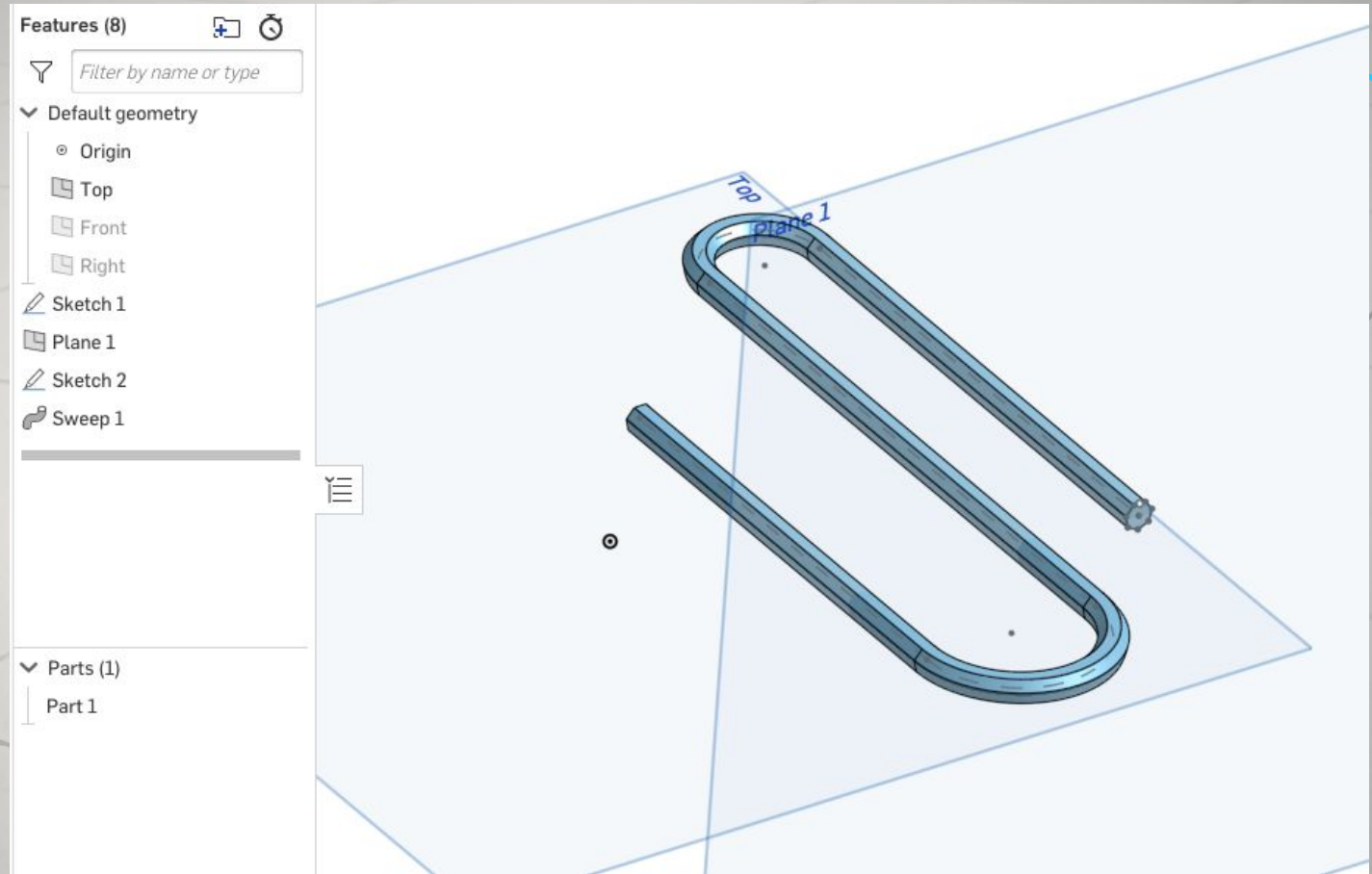
Use lines to create a path in a sketch.

Click the line and end point you want to start at.

Click the plane tool to create a new plane at that location (slide 20 is about creating planes)



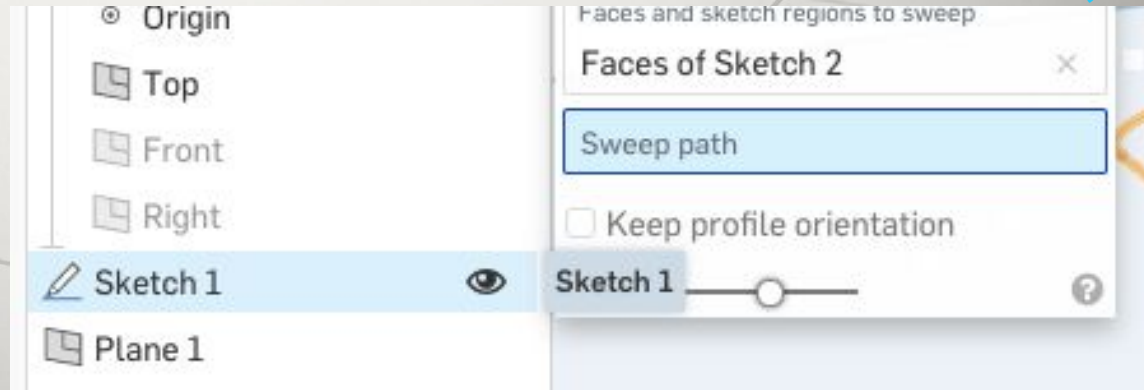
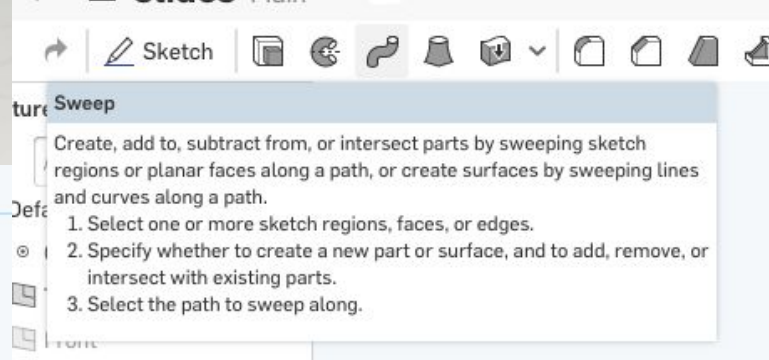
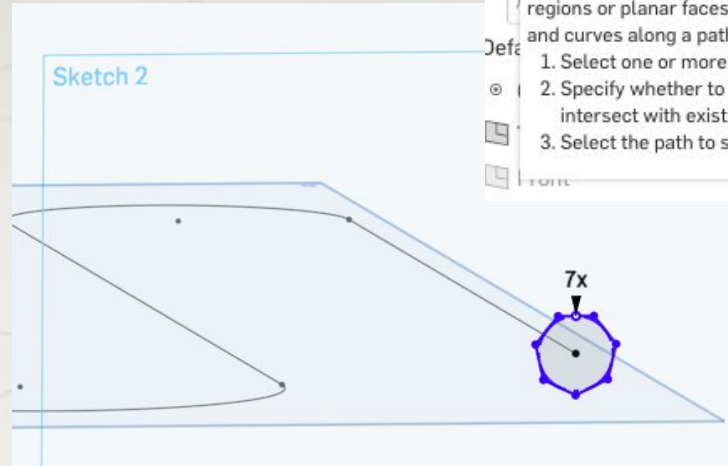
Sweep



Sweep

On the plane you just created (it will be added to your list of features) create a sketch. Create a shape touching the 'starting point' you used to make your plane.

Exit the sketch and click sweep in the top left. Choose your shape, then click sweep path and select the sketch containing your path.





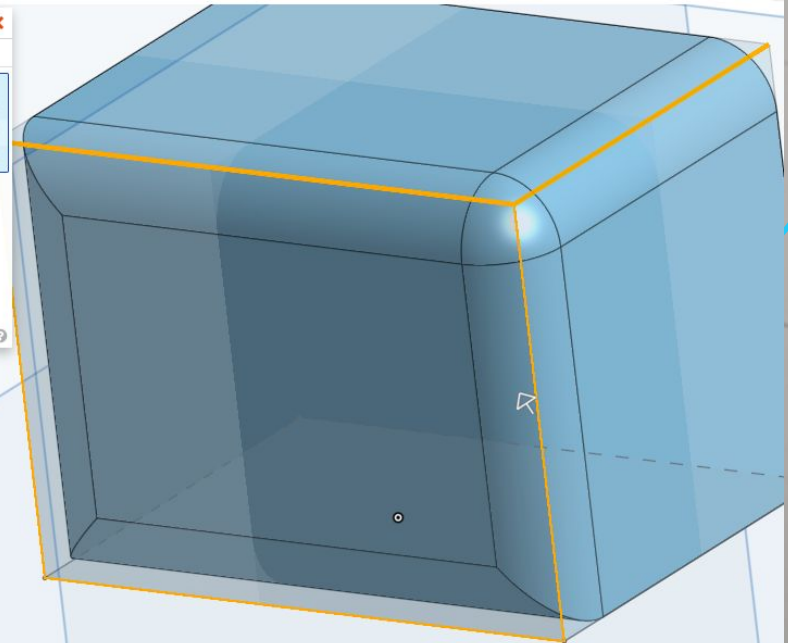
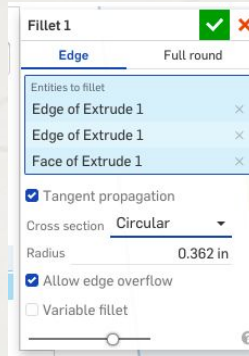
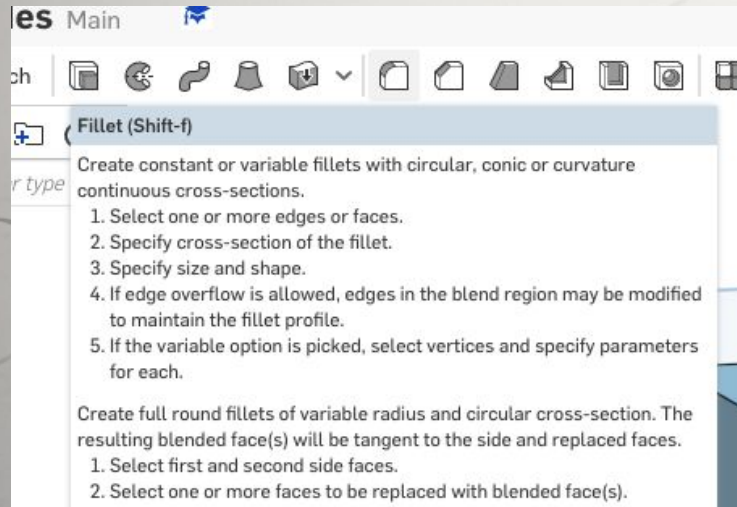
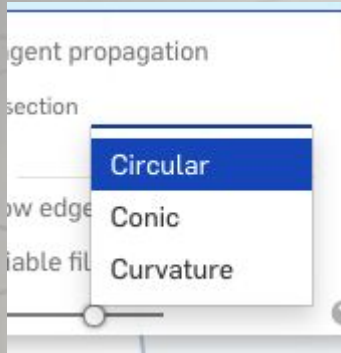
Fillet/Chamfer

Fillet

Round edges on the 3D objects.

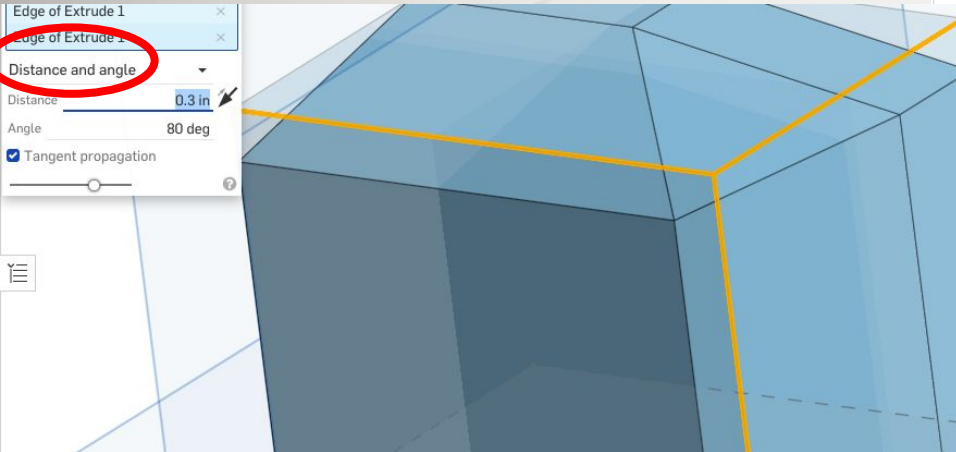
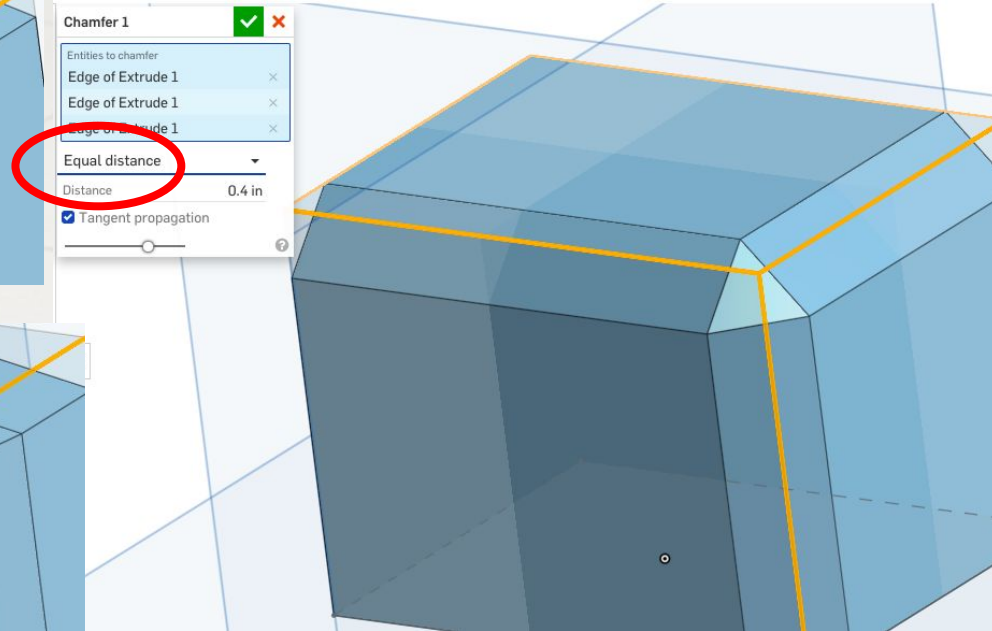
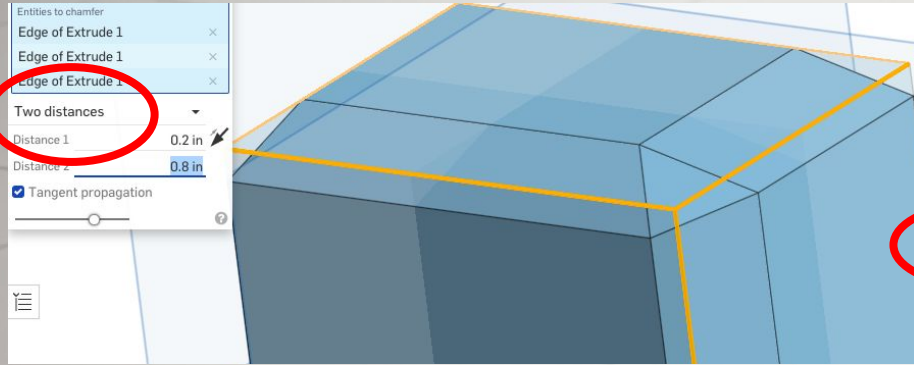
Choose the Fillet tool, and select one or more edges/faces.

Change the radius or pull the arrow to determine how much curves, and you can change the type of curve to circular, conic, and curvature



Chamfer

Chamfer is the same as fillet, but it creates slopes instead of rounded edges. There are three types:





Planes

Planes

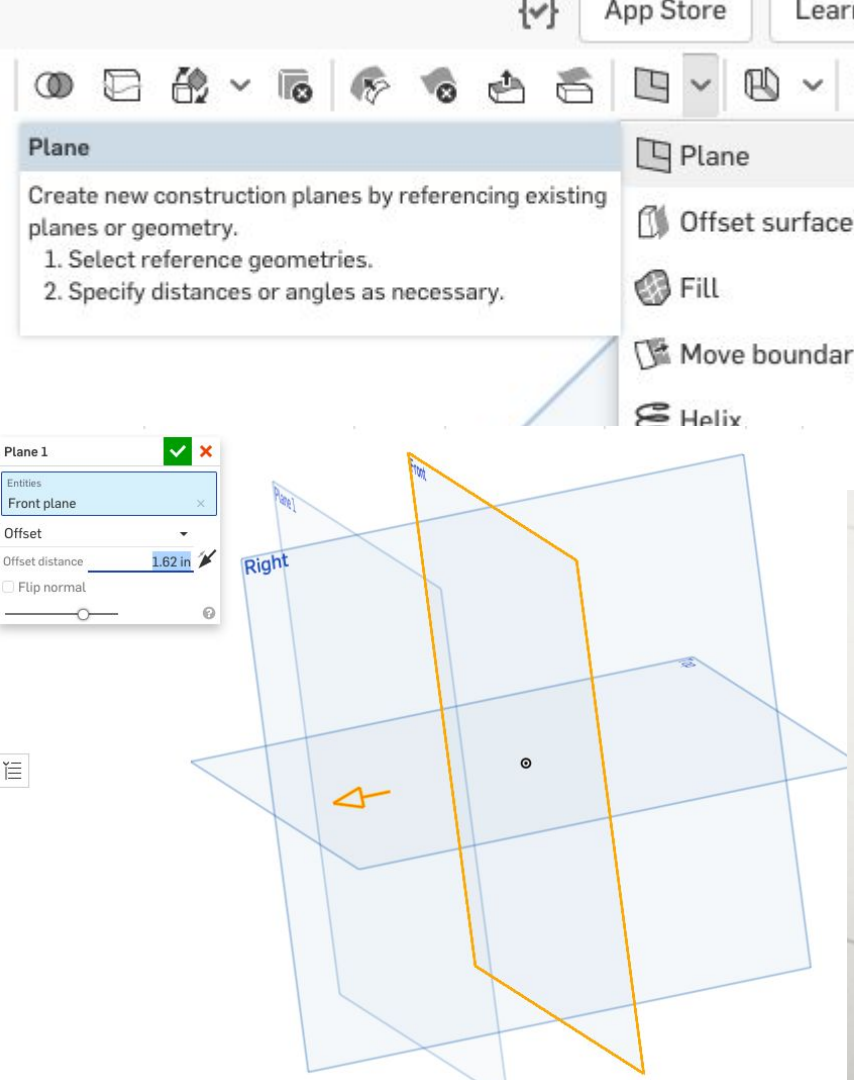
Planes are a flat surface you can make a sketch on.

Onshape has a 3 default planes, Top, Front, and Right. You can see them listed in features under default geometry.

To create your own plane, click the plane button on the top right. You may have to click the arrow on the side and select it if a different tool is currently your default.

Select a face or plane that mimics the direction you want your plane to face. Now move your plane a desired distance using the arrow or type a number into the panel that appears on the left.

Now when you make a sketch, you can use this plane.





Mirror

Mirror

Duplicates a part.

Click on the mirror tool and select what you want to mirror.

Click the Mirror Plane box on the panel and choose a plane or face you want to use to reflect the part(s).

