

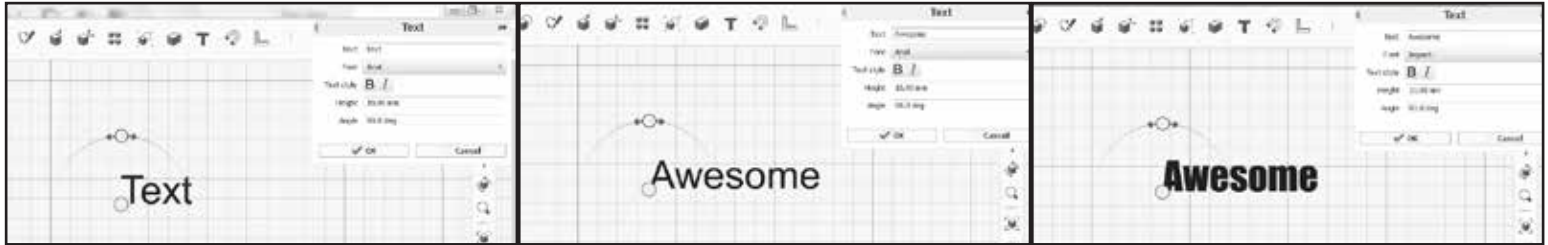
IMPORTANT! PROJECT CAN BE NO LARGER THAN
100 X 100 X 100

3D PRINTING DESIGN LESSON: CREATE A NAME OR WORD TAG USING TEXT & EXTRUDE TOOLS

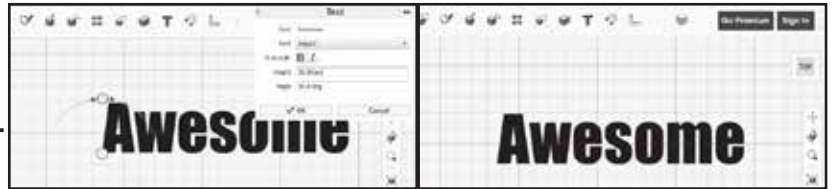
Open "123Design", save a copy to your computer
with today's date and your name.



STEP 1: CREATE TEXT SKETCH OF YOUR NAME OR WORD



- Change your view to the "Top View" by clicking view cube in the top right.
- Using the "Text Tool", found in the menu at the top, click twice on plane.
- In the dialog box, change "Text" field to your name or a word.
- In the dialog box, choose a "Font" and/or "Bold/Italic".
- In the dialog box, set the "Height" value to "20.00mm".
Do Not Change The Angle.
- Click "Ok" button to accept.
- Hit "CMD+S" to save your work.



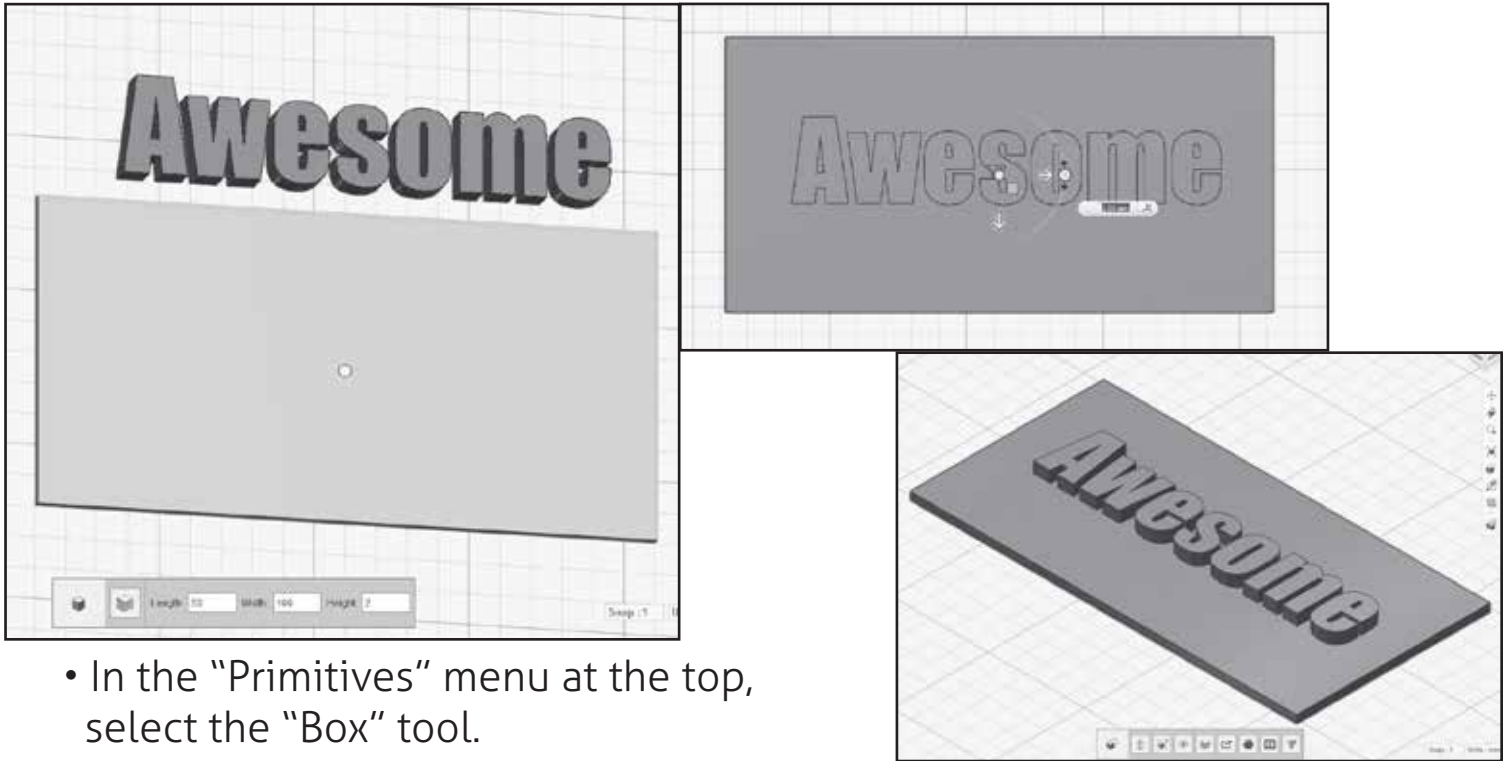
STEP 2: MAKE YOUR TEXT SKETCH 3D



- Click inside "Text Sketch" to select. It will turn orange.
- In the pop-up "Gear" menu, select the "Extrude Text" tool.
- Set the "Extrude" distance to "5.00mm".
- Hit "Enter/Return" to accept.
- In the menu on the right, hover over the "Eye" and click "Hide Sketches".

- Click and drag "Selection Box" over extruded text objects.
- Hit "CMD+G" to group text together.
- Hit "CMD+S" to save your work.

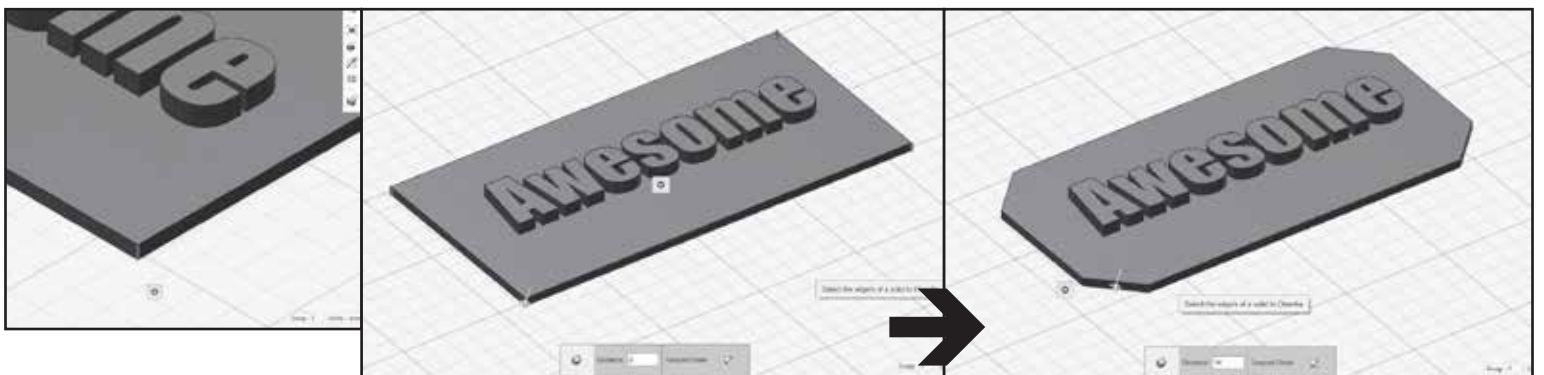
STEP 3: CREATE OBJECT FOR TEXT TO SIT ON



- In the "Primitives" menu at the top, select the "Box" tool.
- Change values of box to:
Length "50mm" Width "100mm" Height "2mm"
- Hit "Enter/Return" to accept.
- Change to "Top View". Click box to select. Using the "Move/Rotate" tool in pop-up "Gear" menu, click the "X and/or Y" arrows to position box centered with text.
- Hit "Enter/Return" to accept.
- Hit "CMD+S" to save your work.

SAVE YOUR WORK!

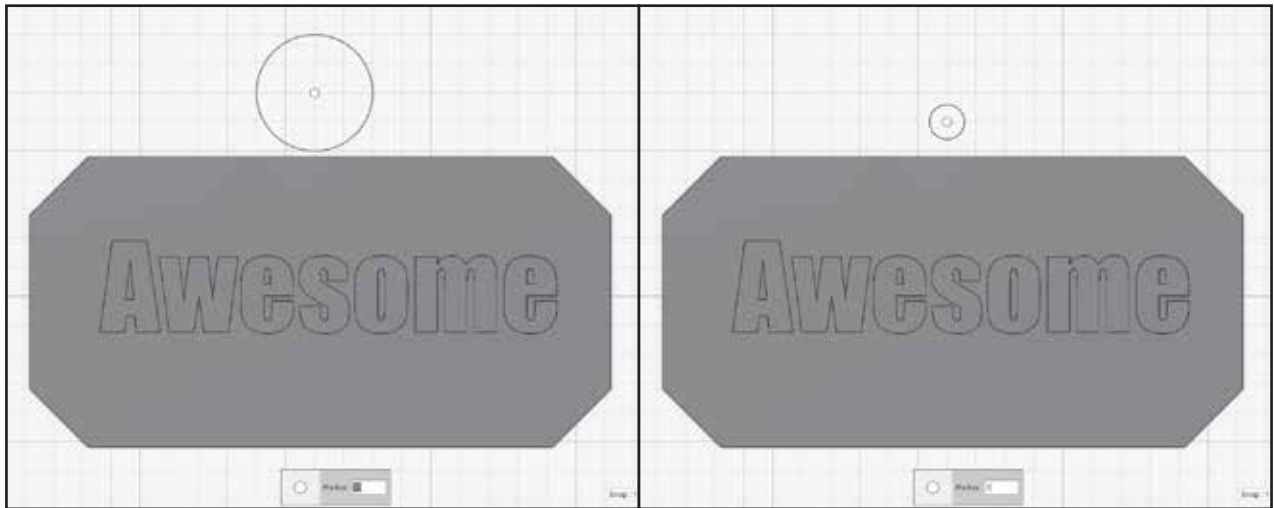
STEP 4: ANGLE THE CORNERS ON BOX



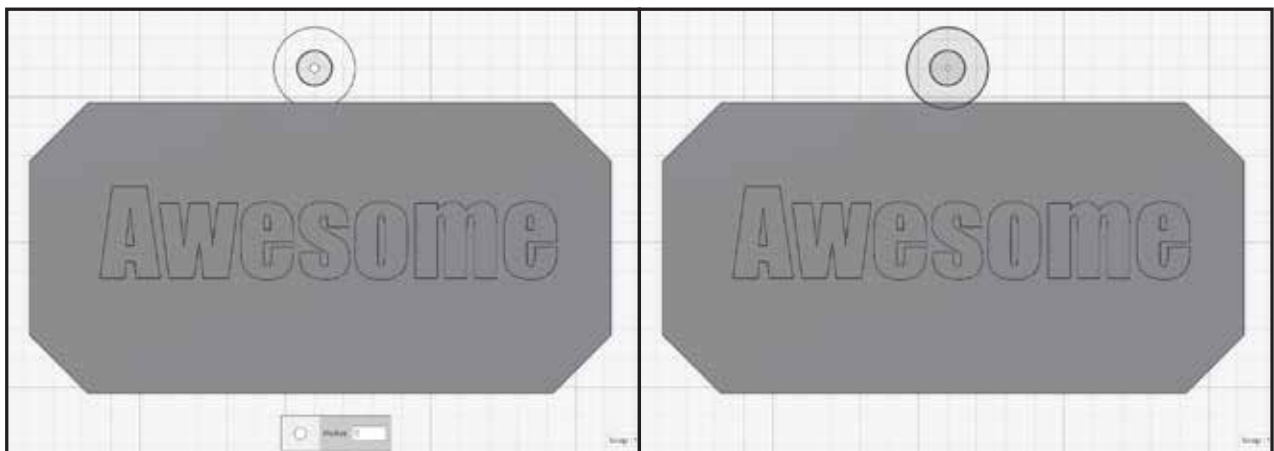
- In the "Top-Front-Right" view, click box to select, slide mouse away and back over edges. (You are now able to edit box.)
- Click the "Vertical Edge" in the "Front-Right" on box.

- In the pop-up “Gear” menu, select the “Chamfer Tool”. (or press “C”)
- Rotate view, click each “Vertical Edge” to select all four “Vertical Edges” on box. (Also can “click and drag” view cube in top right to rotate view.)
- In the “Distance” box, change the value to “10”
(Also can “click and drag” arrow on edge to desired distance value.)
- Hit “Enter/Return” to accept.
- Hit “CMD+S” to save your work.

STEP 5: ADD LOOP SKETCH FOR TAG TO HANG ON



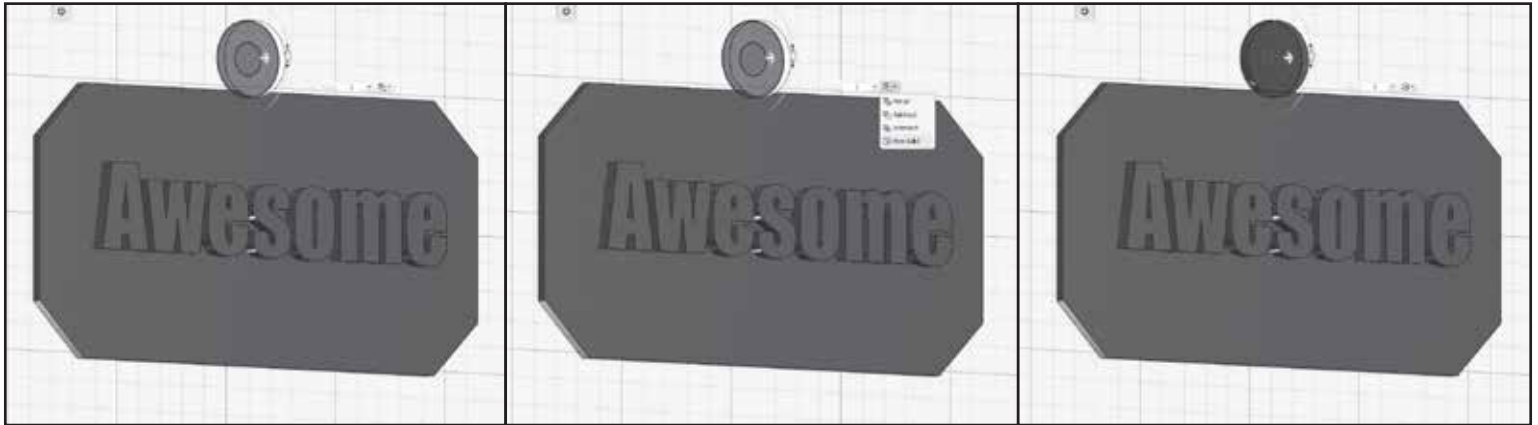
- Viewing from “Top View”, in the “Primitives” menu at the top, select the “Circle Tool”.
- Hover mouse over top area of box. Change “Radius” value to “3.00mm”.
- Hit “Enter/Return” to accept.



- Go back to the “Primitives” menu at the top, select “Circle Tool” again.
- Hover mouse over top of first circle, snap to center and change “Radius” value to “7.00mm”.
- Hit “Enter/Return” to accept.
- Hit “CMD+S” to save your work.

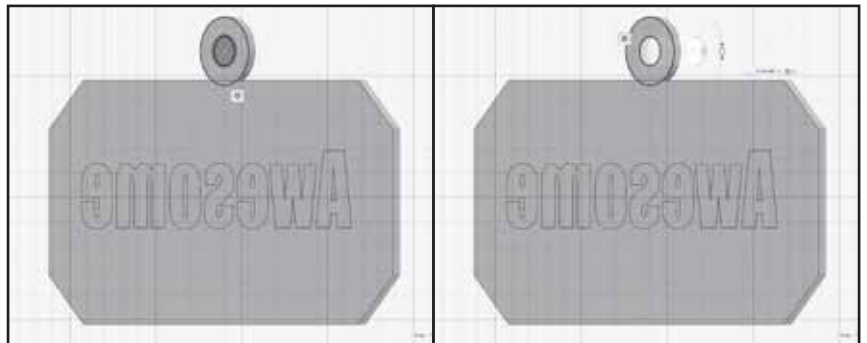


STEP 6: MAKE LOOP SKETCH 3D

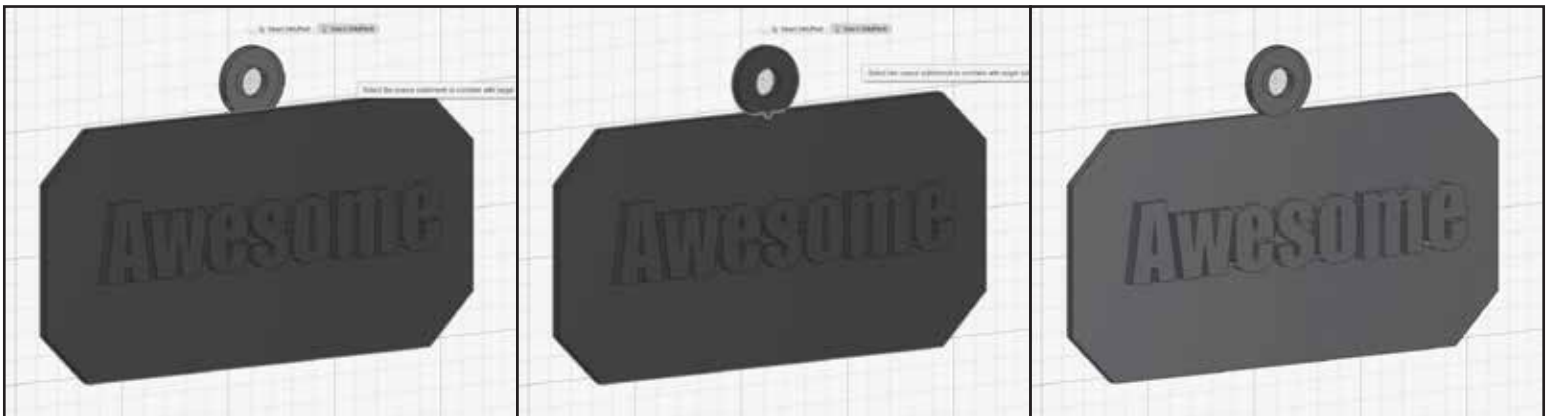


- Click inside bigger circle sketch to select.
- In the pop-up "Gear" menu, select the "Extrude Tool".
- Set the "Extrude Distance" to "2.00mm".
- In the drop down menu at the side of the input box, change the "Extrude Type" to "New Solid".
- Hit "Enter/Return" to accept.

- In the "Bottom-Left" view, click inside small circle sketch to select.
- In the pop-up "Gear" menu, select the "Extrude Tool".
- Click the arrow and drag small circle through big circle. (Geometry will turn red at the small circle cut out.)
- Hit "Enter/Return" to accept.

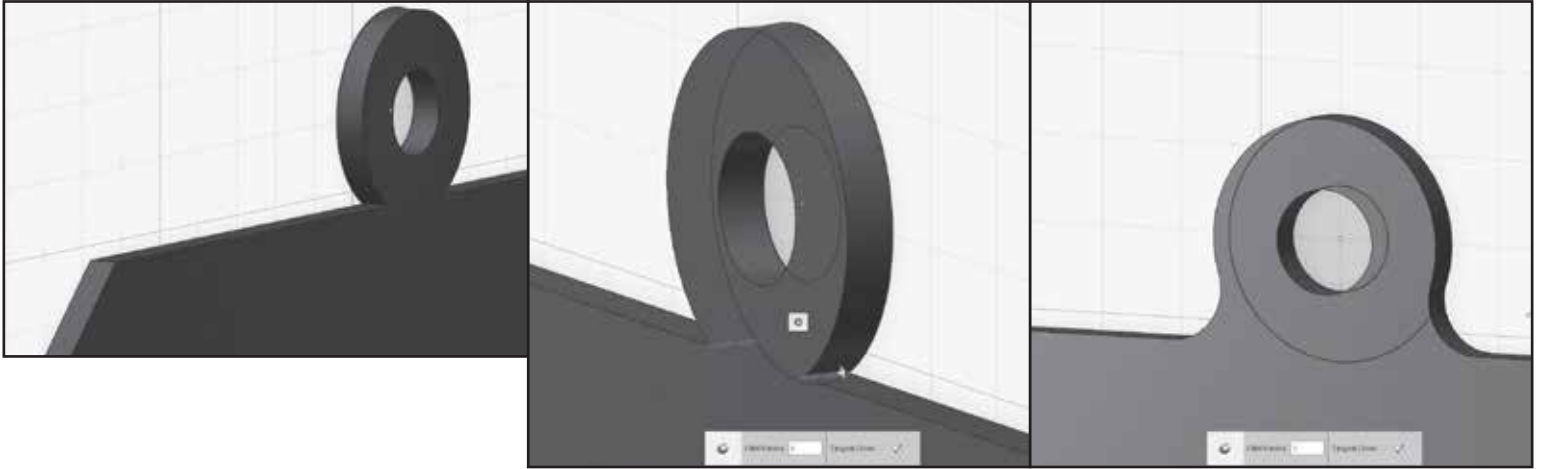


STEP 7: ATTACH LOOP TO NAME TAG BOX



- In the "Combine" menu at the top, select the "Merge Tool".
- Click the "Name Tag Box" first and then click the "Loop" object.
- Hit "Enter/Return" to accept.

STEP 3: REINFORCE LOOP ON NAME TAG



- Position viewport so inside edge on loop is visible.
- Click the name tag box to select, slide mouse away and then click on inside "Vertical Edge" of "Loop".
- In the pop-up "Gear" menu, select the "Fillet Tool". (Or press "E".)
- Click the "Opposite Vertical Edge" to select.
- Change the "Fillet Radius" to "3.00mm".
(Or "Click and Drag" the arrow to desired radius.)
- Hit "Enter/Return" to accept.



NAME TAG IS READY TO PRINT!

Further edit or make a new tag using any of the tools we just learned. Make your name tag more unique and creative as possible! You can add more text, angle more corners, and/or add more curves. Keep in mind FFF printing guidelines including printability and max build size for project(100mm x 100mm x 10mm).

Tools you learned today: Basic Primitives, Text Sketch, Move/Rotate, Primitive Sketches, Extrude Text, Extrude, Chamfer, Fillet, and Combine Merge.