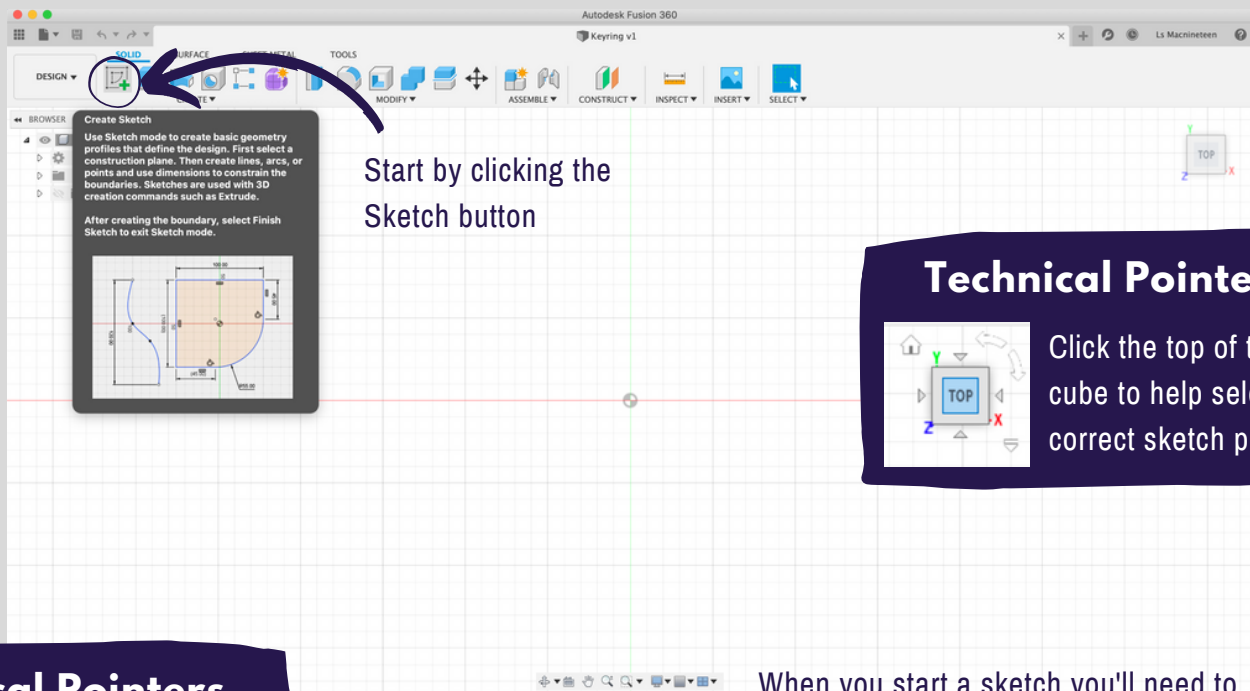


LET'S GET STARTED



Start by clicking the Sketch button

Technical Pointers



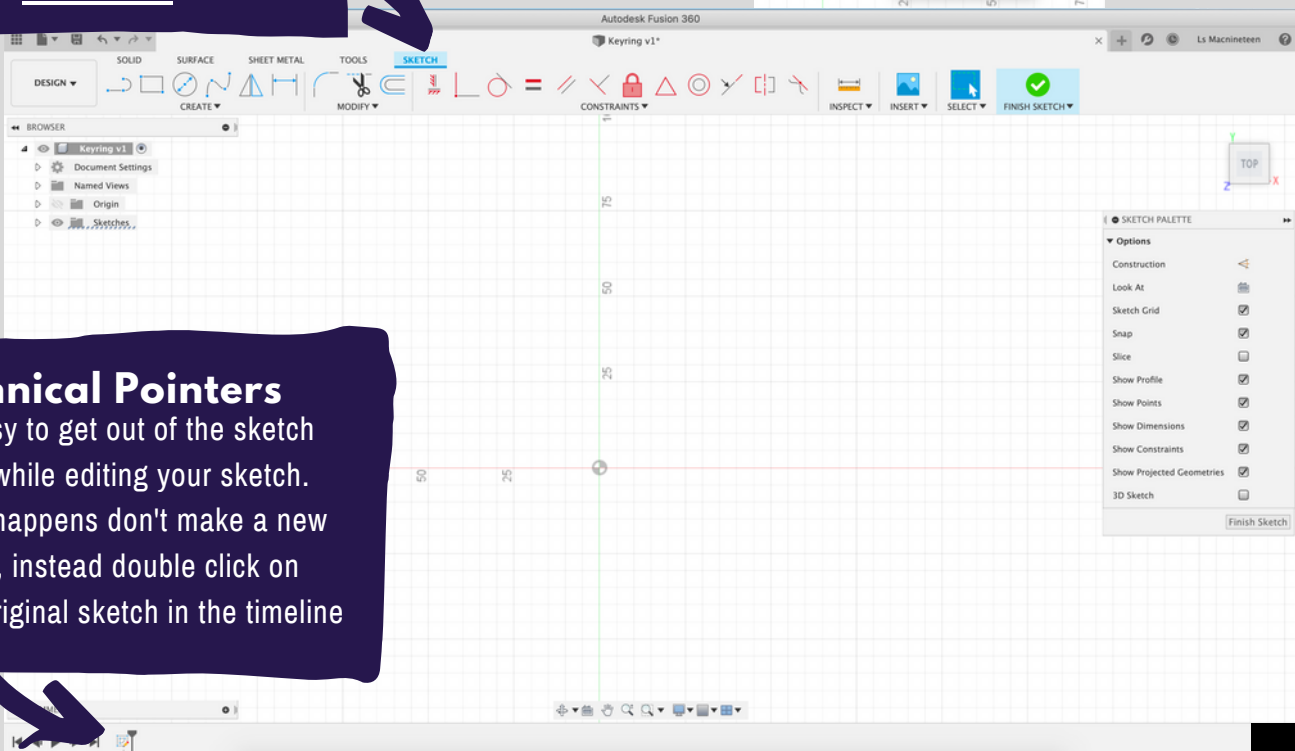
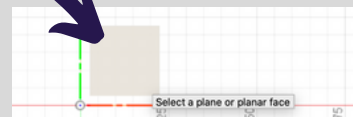
Click the top of the view cube to help select the correct sketch plane

Technical Pointers

When you start Fusion, you'll open in the Design Workspace and the Solid Tab.

When you start a sketch, you'll enter the Sketch Tab.

When you start a sketch you'll need to select a plane to work on. Select the plane by hovering over it and clicking.

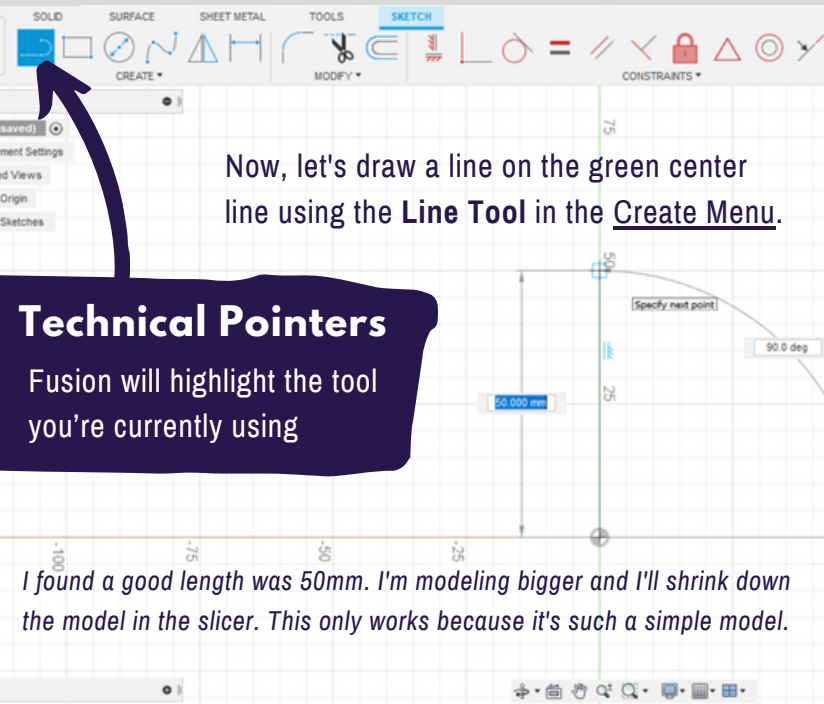


Technical Pointers

It's easy to get out of the sketch menu while editing your sketch. If this happens don't make a new sketch, instead double click on your original sketch in the timeline



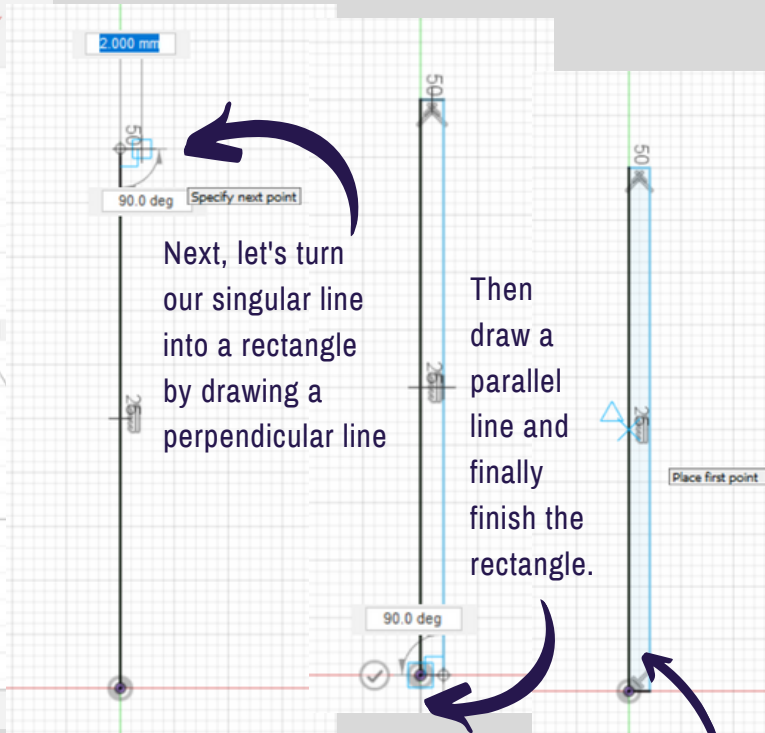
CREATE A MIDPOINT



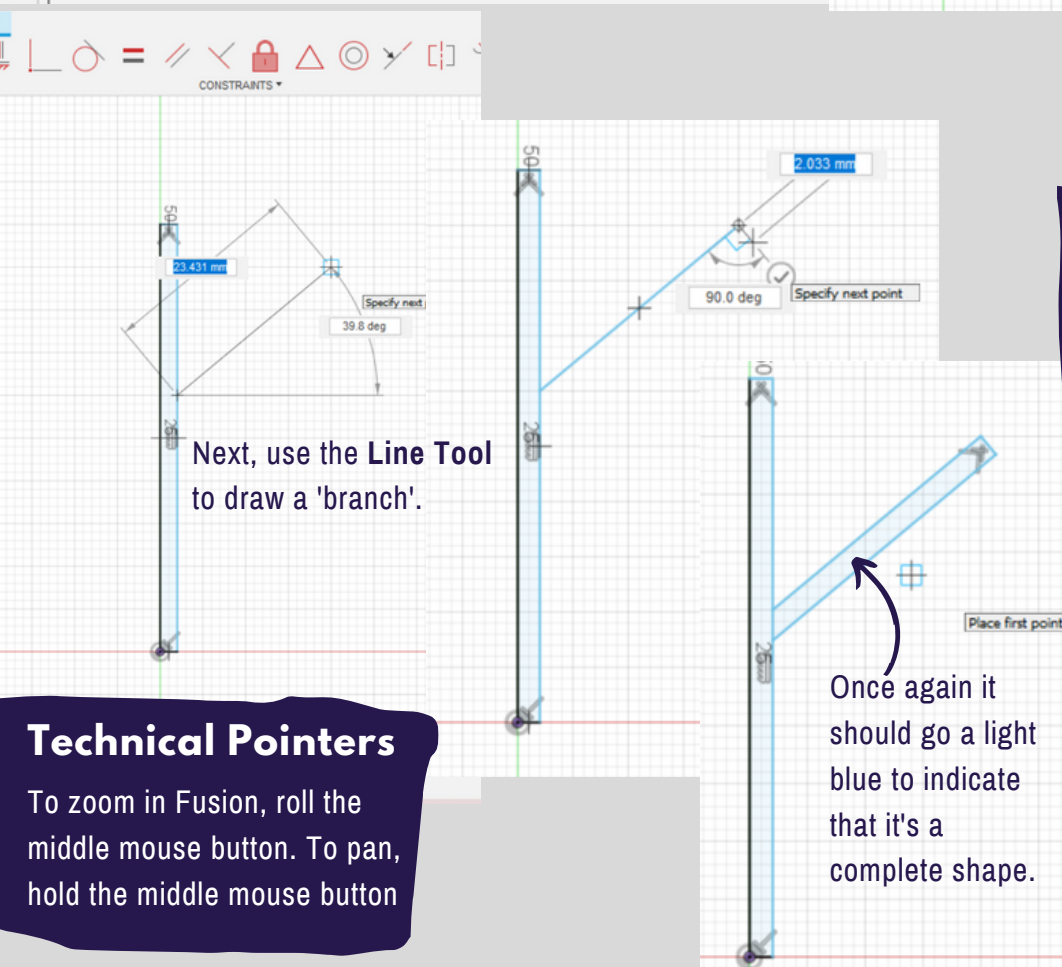
Technical Pointers

Fusion will highlight the tool you're currently using

I found a good length was 50mm. I'm modeling bigger and I'll shrink down the model in the slicer. This only works because it's such a simple model.



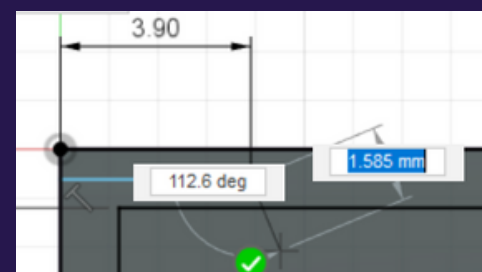
The shape will go blue once you've 'completed' it.



Technical Pointers

To zoom in Fusion, roll the middle mouse button. To pan, hold the middle mouse button

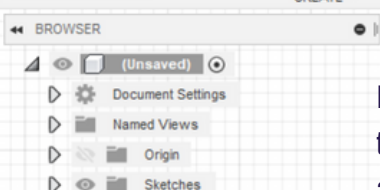
Technical Pointers



How do I finish a line?

When drawing lines - unless you close the shape, Fusion will assume you want to keep on drawing. To finish just press the **green tick** or press the **escape** button.

CHOOSE YOUR DESIGN

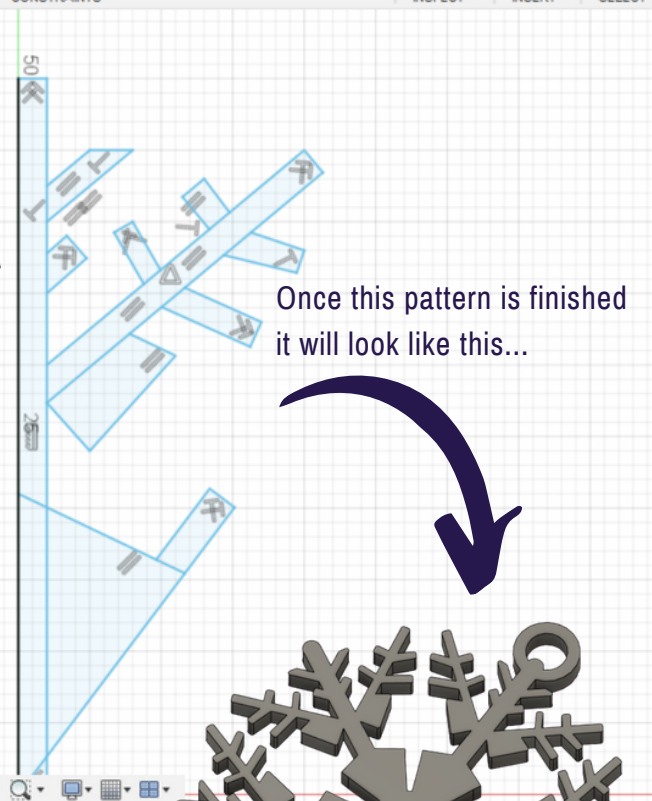


Now, create a pattern to your liking using the **Line Tool**. This pattern will be mirrored and then repeated to create the snowflake.

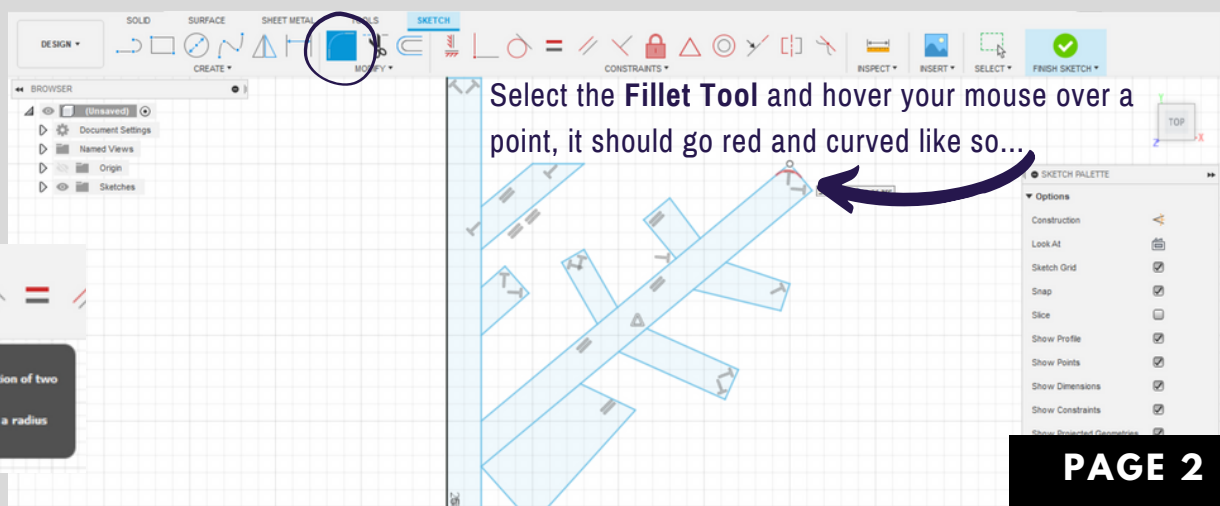
If you're unsure what you want your snowflake to look like you may want to look to real snowflakes for inspiration...



Photographs taken by Wilson Bentley (1865–1931)

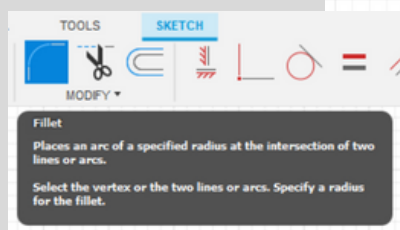


Once this pattern is finished it will look like this...



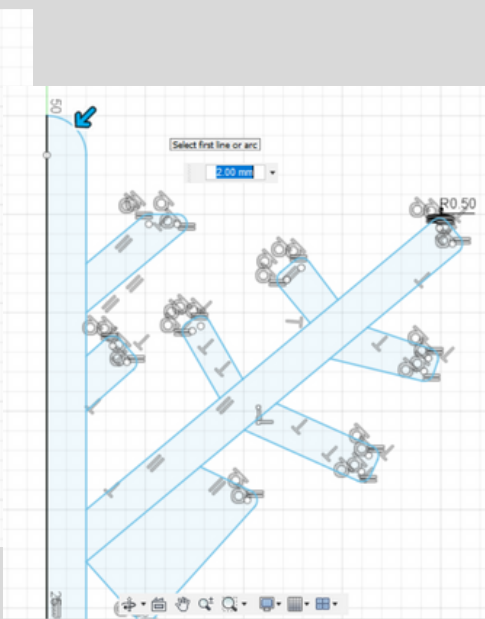
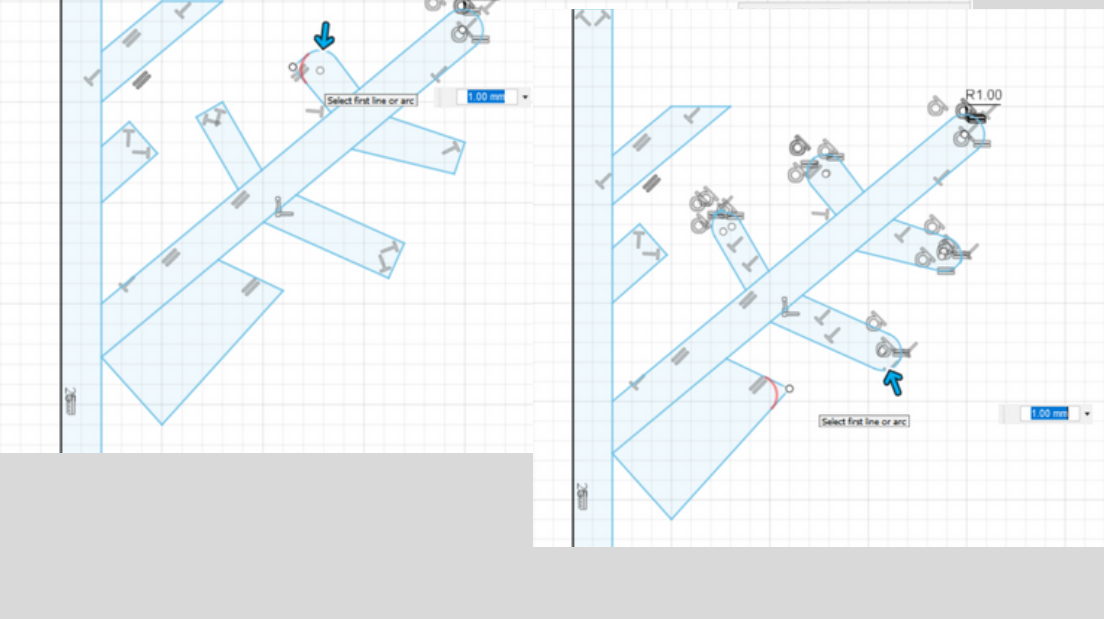
Select the **Fillet Tool** and hover your mouse over a point, it should go red and curved like so...

Before we mirror this pattern let's fillet the edges so they are a little softer.



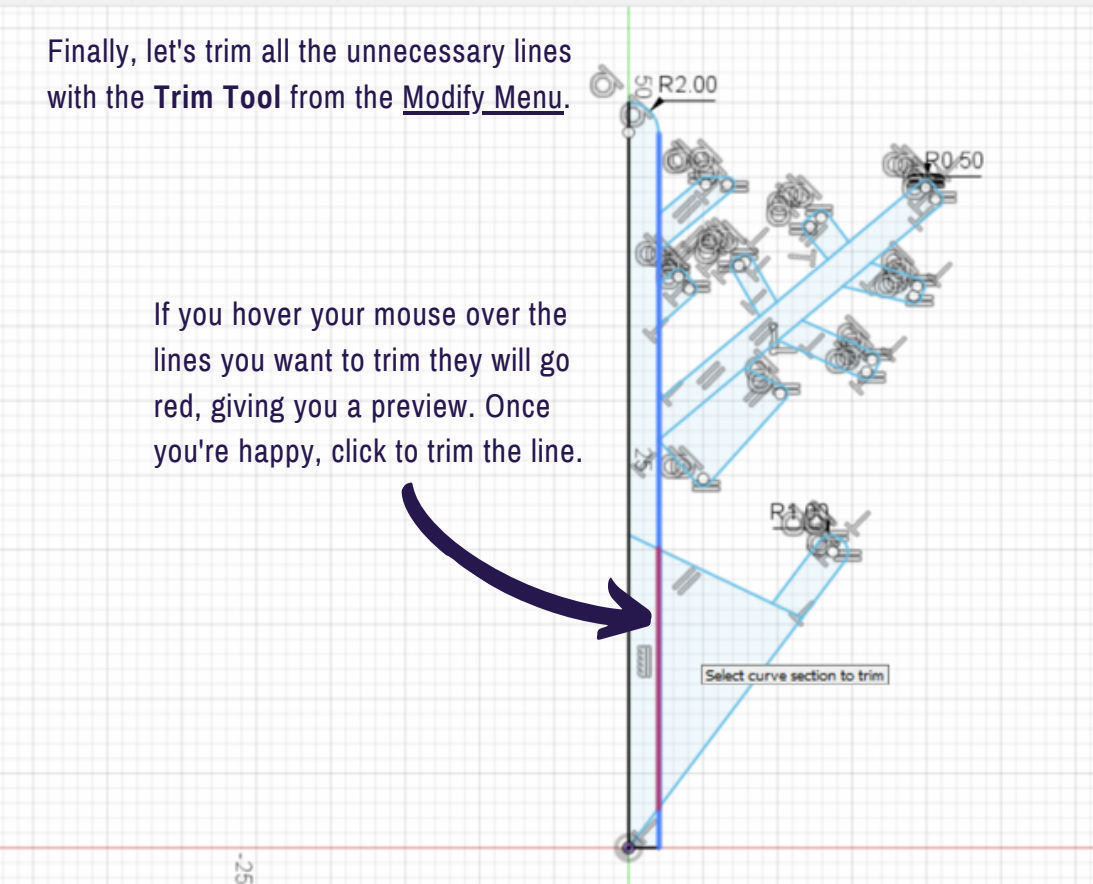
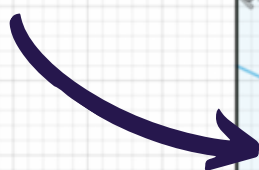
CLEAN THE SKETCH

Now while the **Fillet Tool** is selected click all the sharp edges to fillet them.



Finally, let's trim all the unnecessary lines with the **Trim Tool** from the Modify Menu.

If you hover your mouse over the lines you want to trim they will go red, giving you a preview. Once you're happy, click to trim the line



Your finished shape should look a little like this.

MIRROR IT

Next, select all the lines of your pattern by double clicking anywhere on the pattern and open the **Mirror Tool** in the Create Menu.

Technical Pointers

To select multiple lines hold shift and select each one OR double click to select all connected lines

Click the middle line again to unselect it.

Next, press the **Select** button for Mirror Line.

Now click the middle line, this will make that line the mirror line.

Technical Pointers

Fusion will show what the mirror will produce with black lines

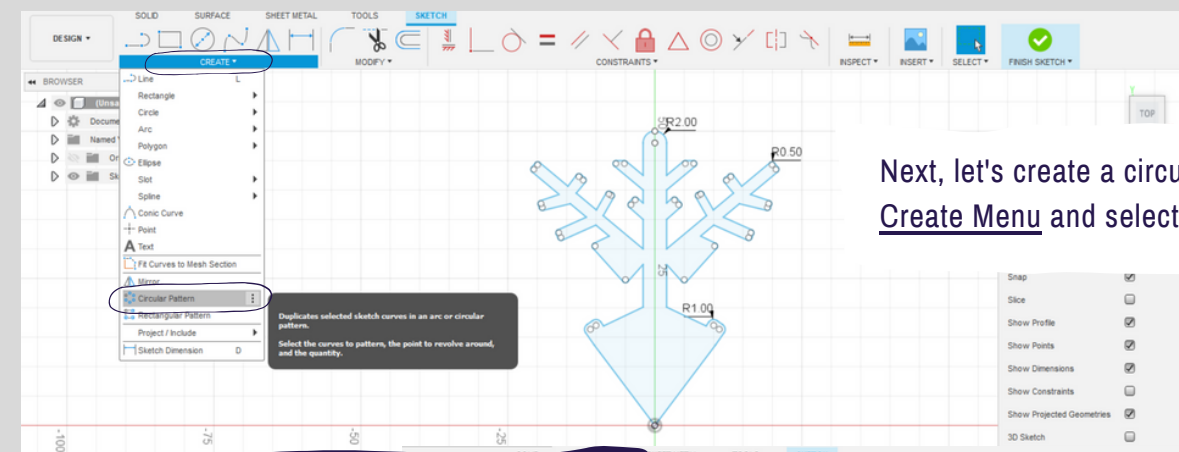
If you've done it correctly the pattern should be mirrored with a black line preview.

When you've finished, you may want to turn off constraints so you can see your shape better.

Just untick this box here



CIRCULAR PATTERN



Next, let's create a circular pattern. Head to the Create Menu and select the **Circular Pattern Tool**.

Technical Pointers

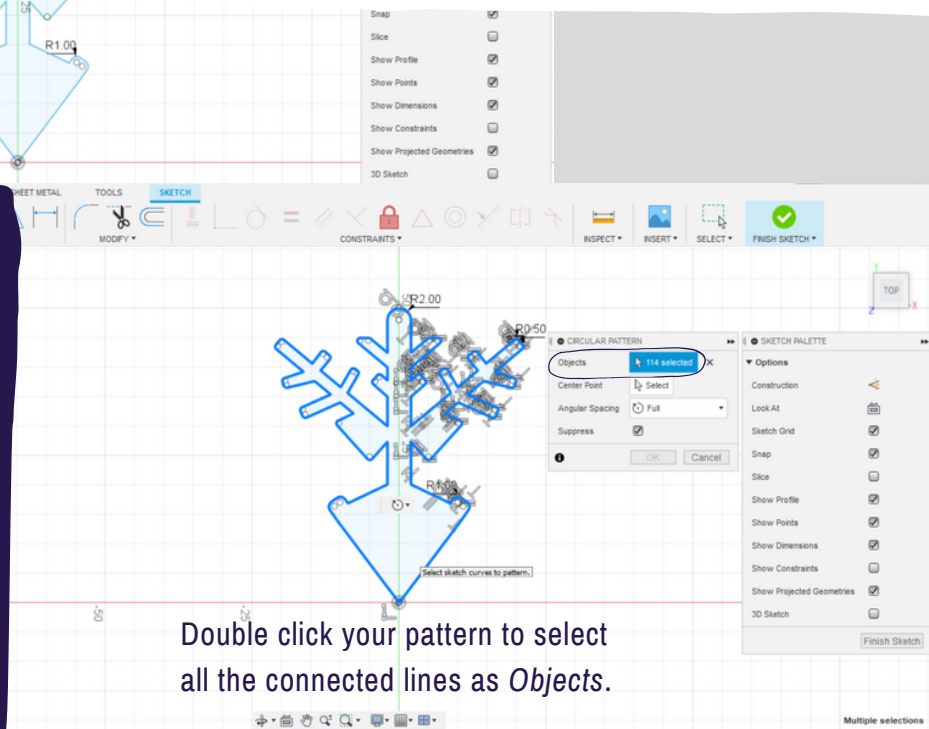
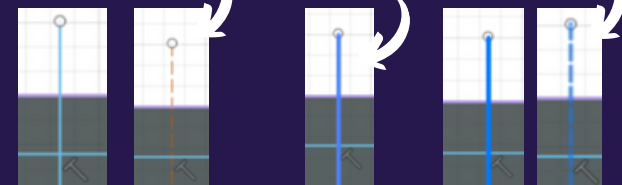
Is it selected?

It's easy to select the wrong line while working, a selected line will go dark blue, even a construction line.

Unselected

Mouse over

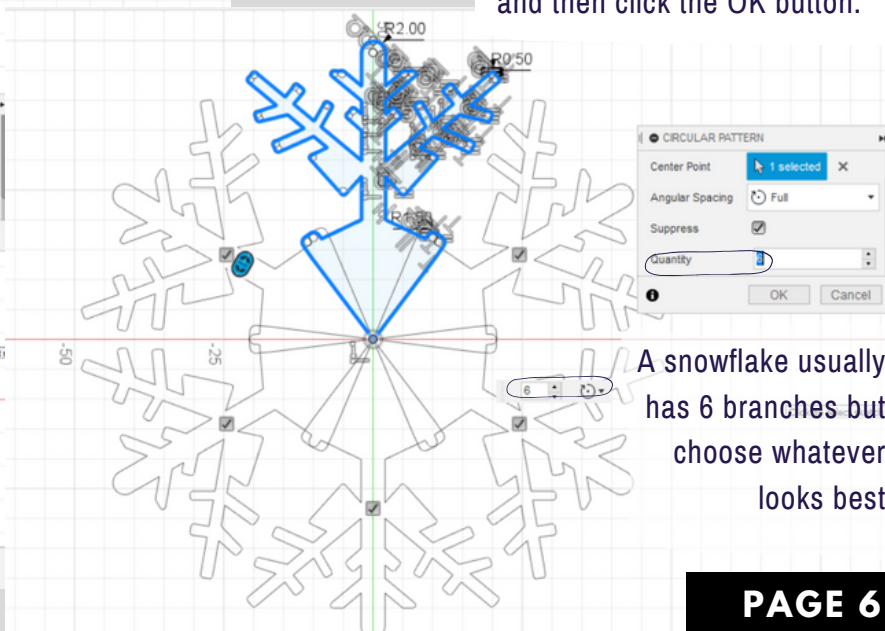
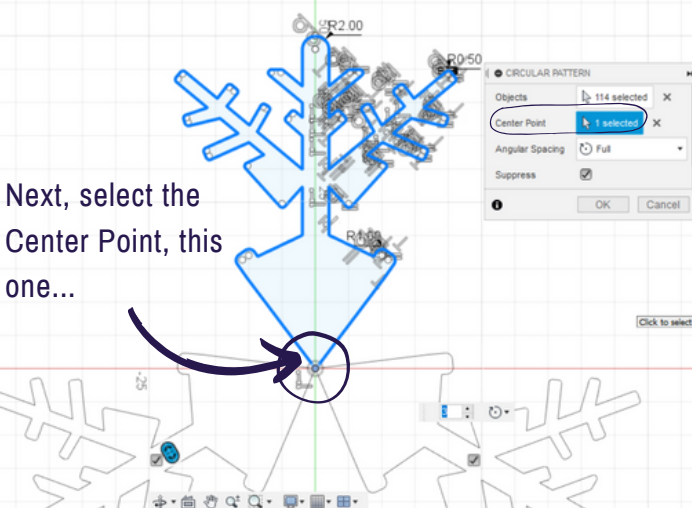
Selected



Double click your pattern to select all the connected lines as **Objects**.

Now pick a quantity of 'clones' and then click the OK button.

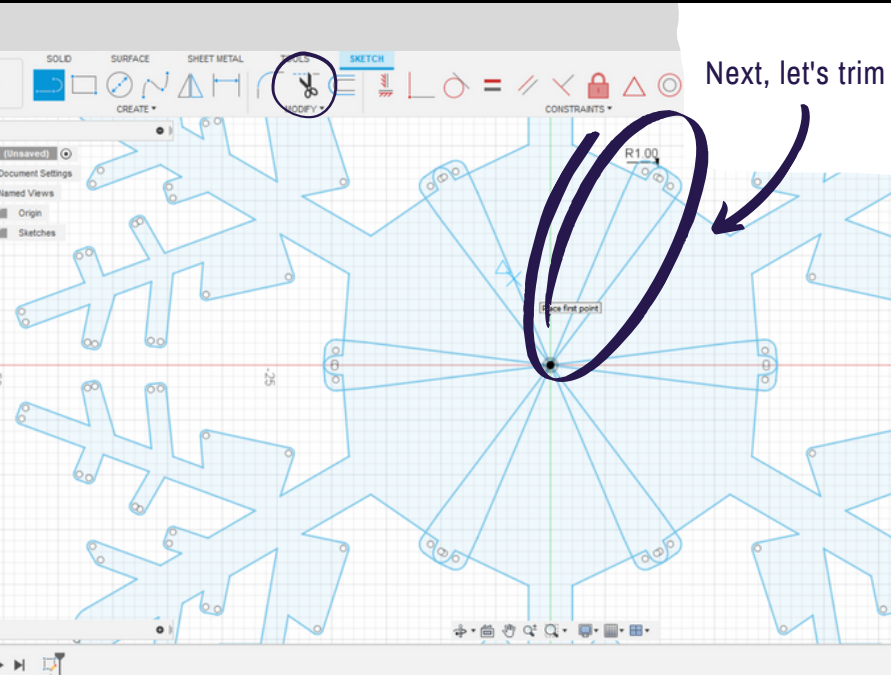
Next, select the Center Point, this one...



A snowflake usually has 6 branches but choose whatever looks best

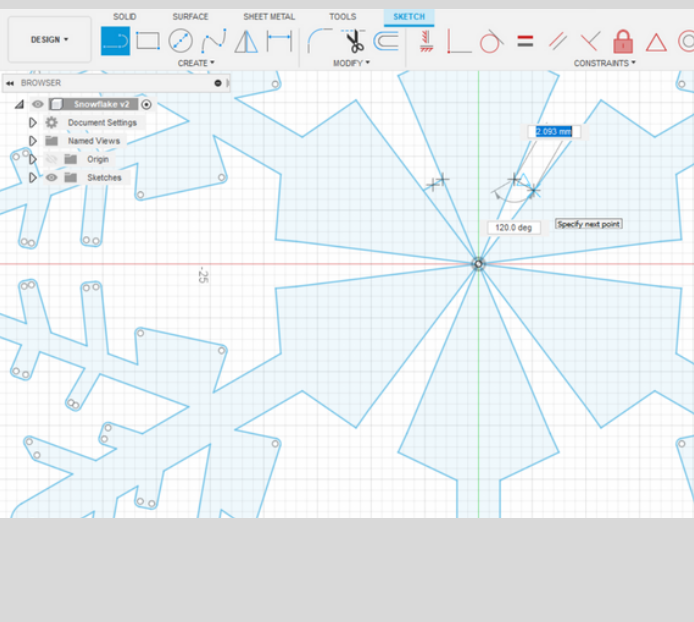
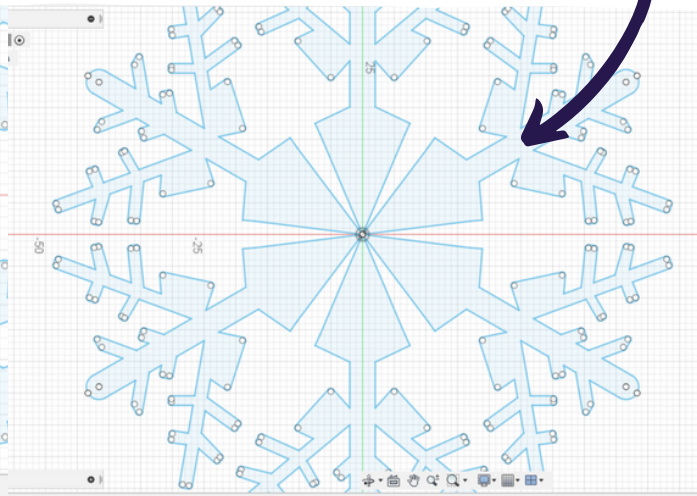


TRIM THE SKETCH

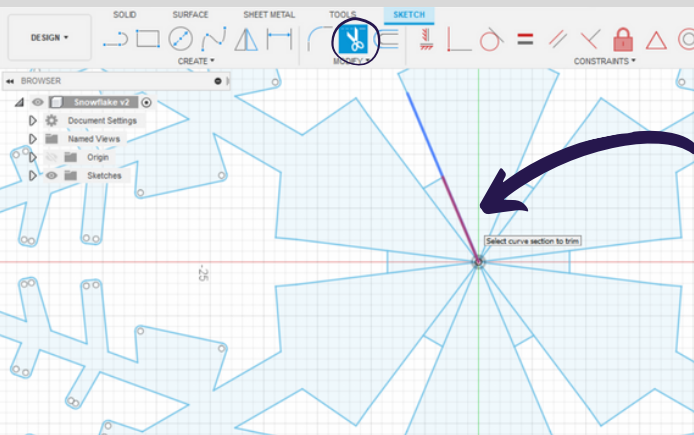
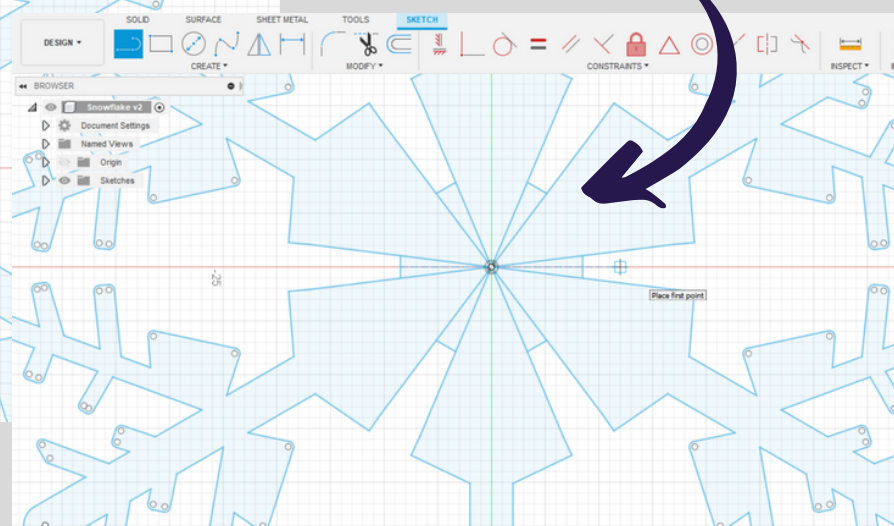


Next, let's trim the overlapping lines...

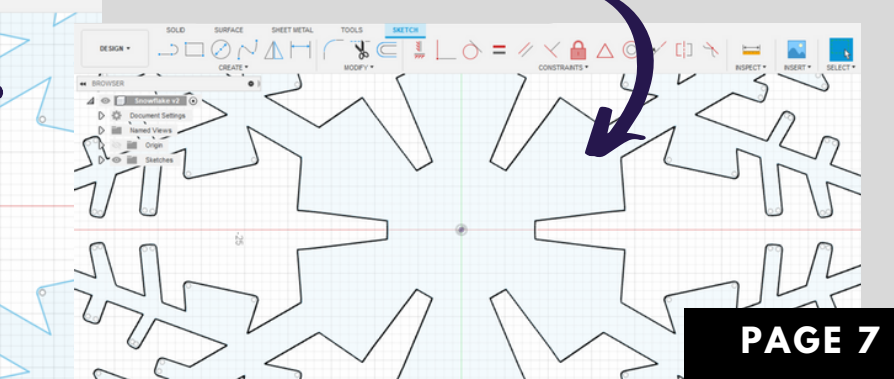
to get something that looks like this



Next, use the line tool to connect the middle of the snowflake like so

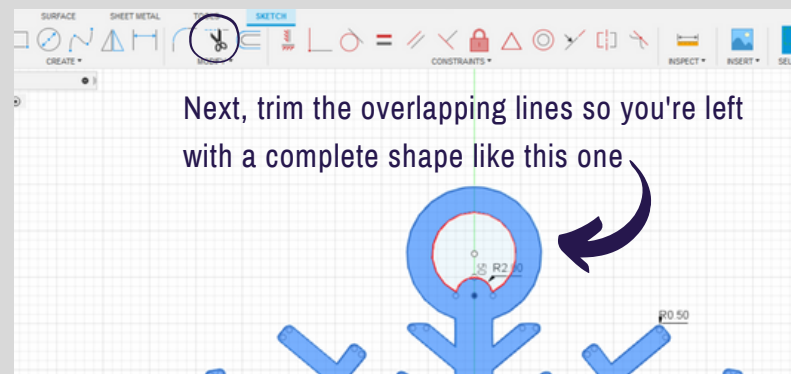
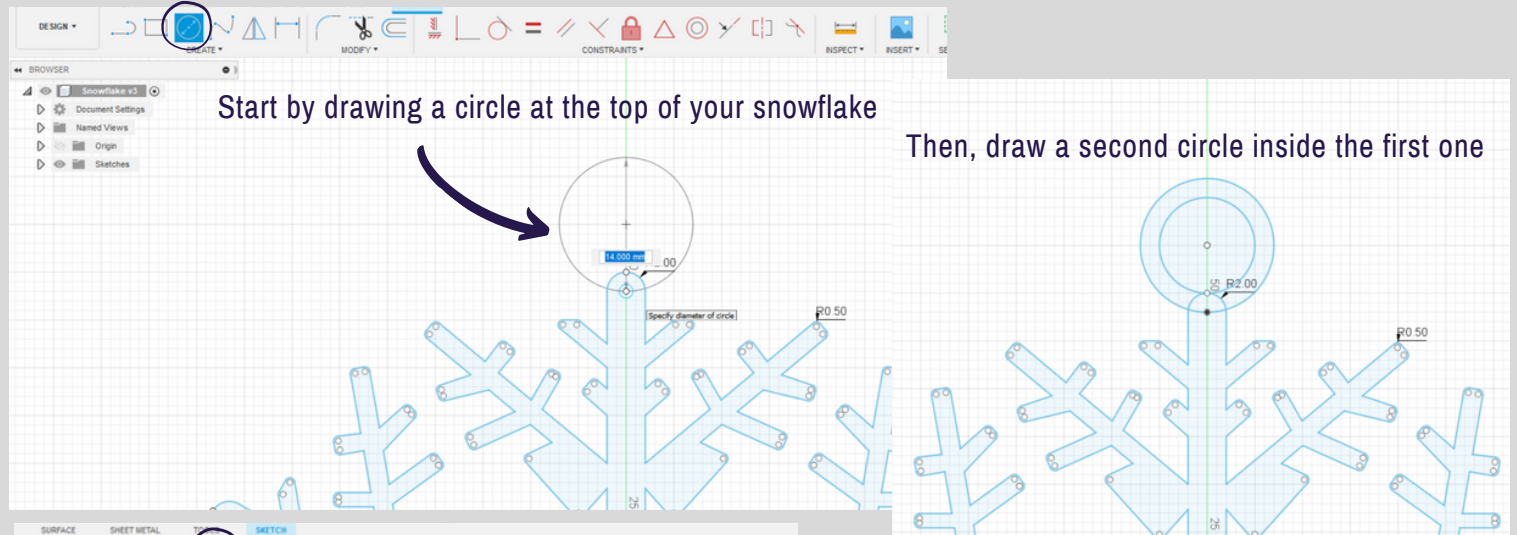


Then trim the middle lines like so...

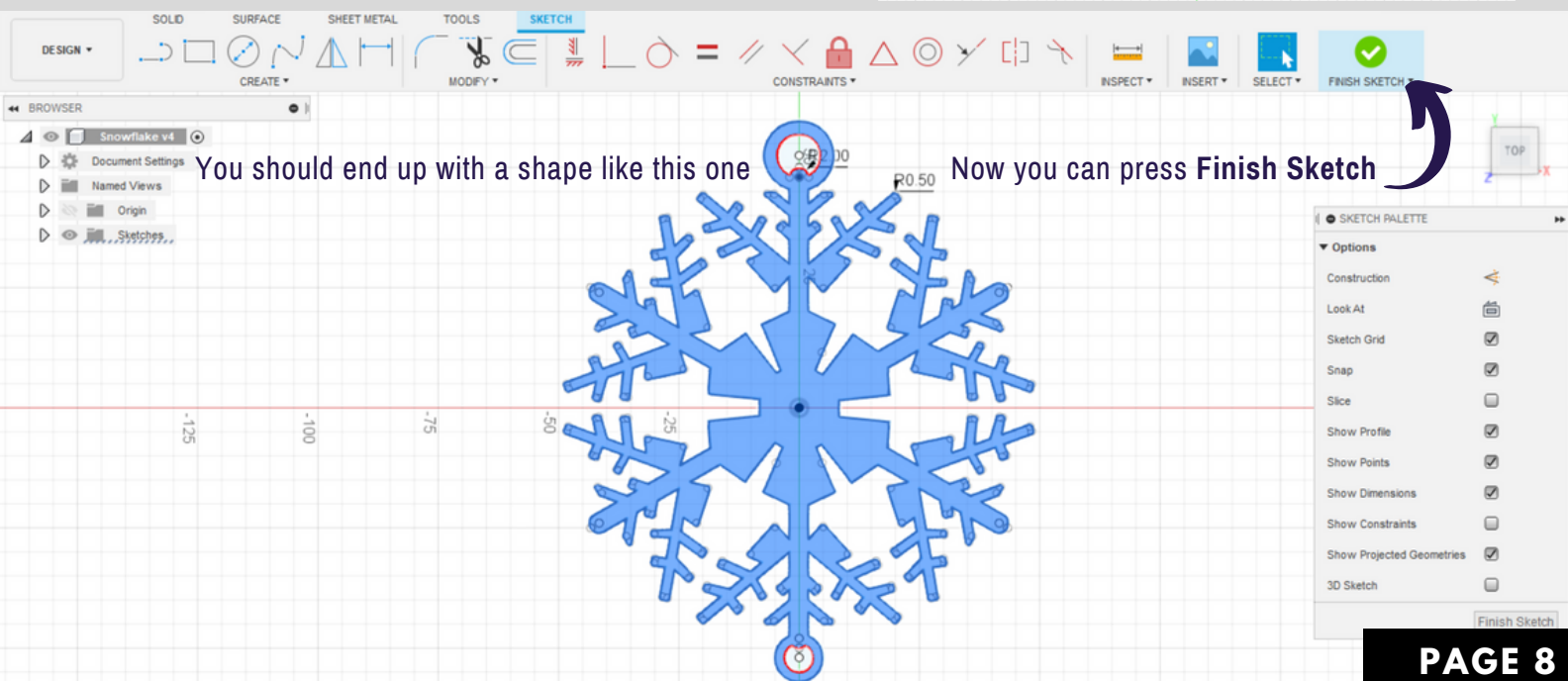
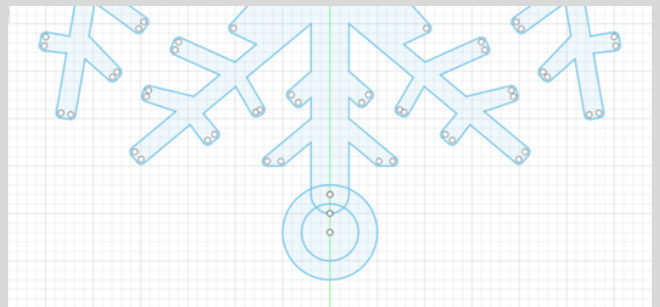


FINISHING THE DESIGN

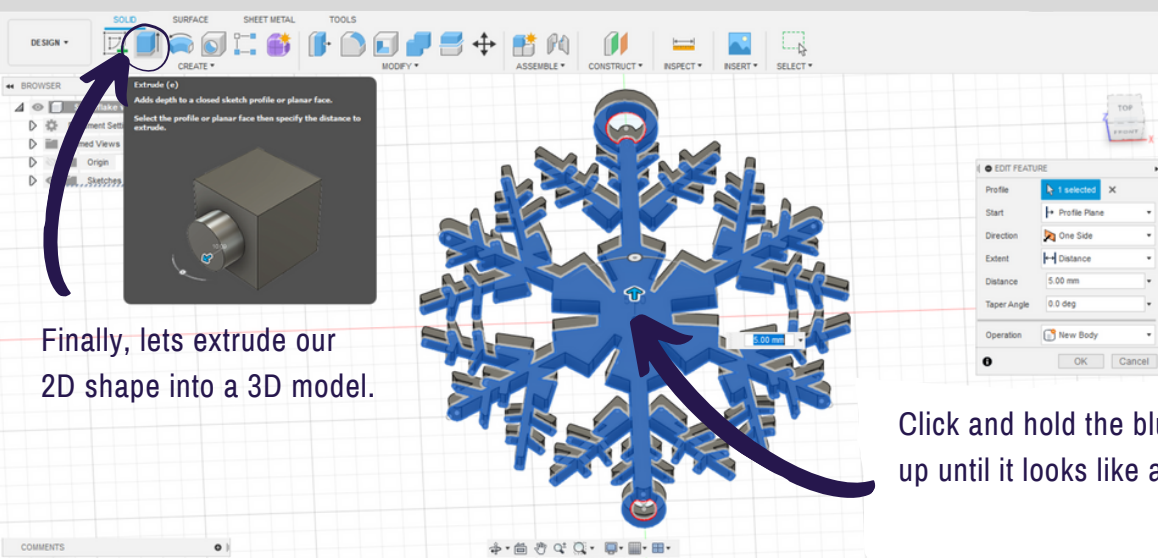
Finally, let's add a hole to tie the decoration to the Christmas tree.



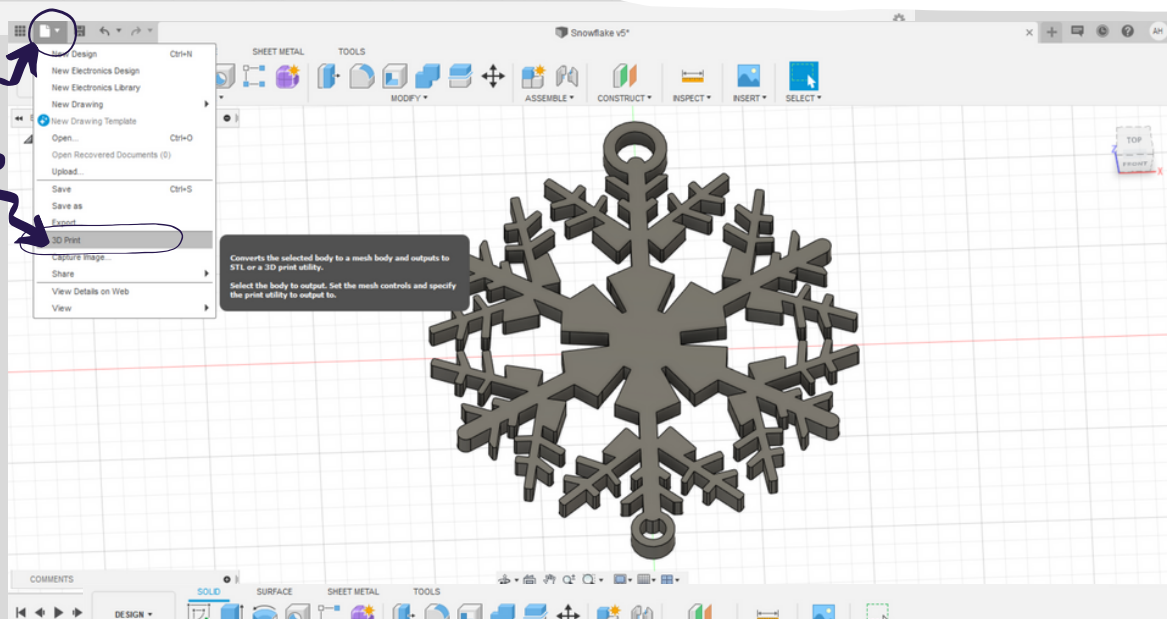
Now repeat this on the bottom if you'd like a place to hang a bell or other accessory



EXTRUDE AND PRINT



Head to the File Menu and click **3D Print**



Now click your model so it turns blue

