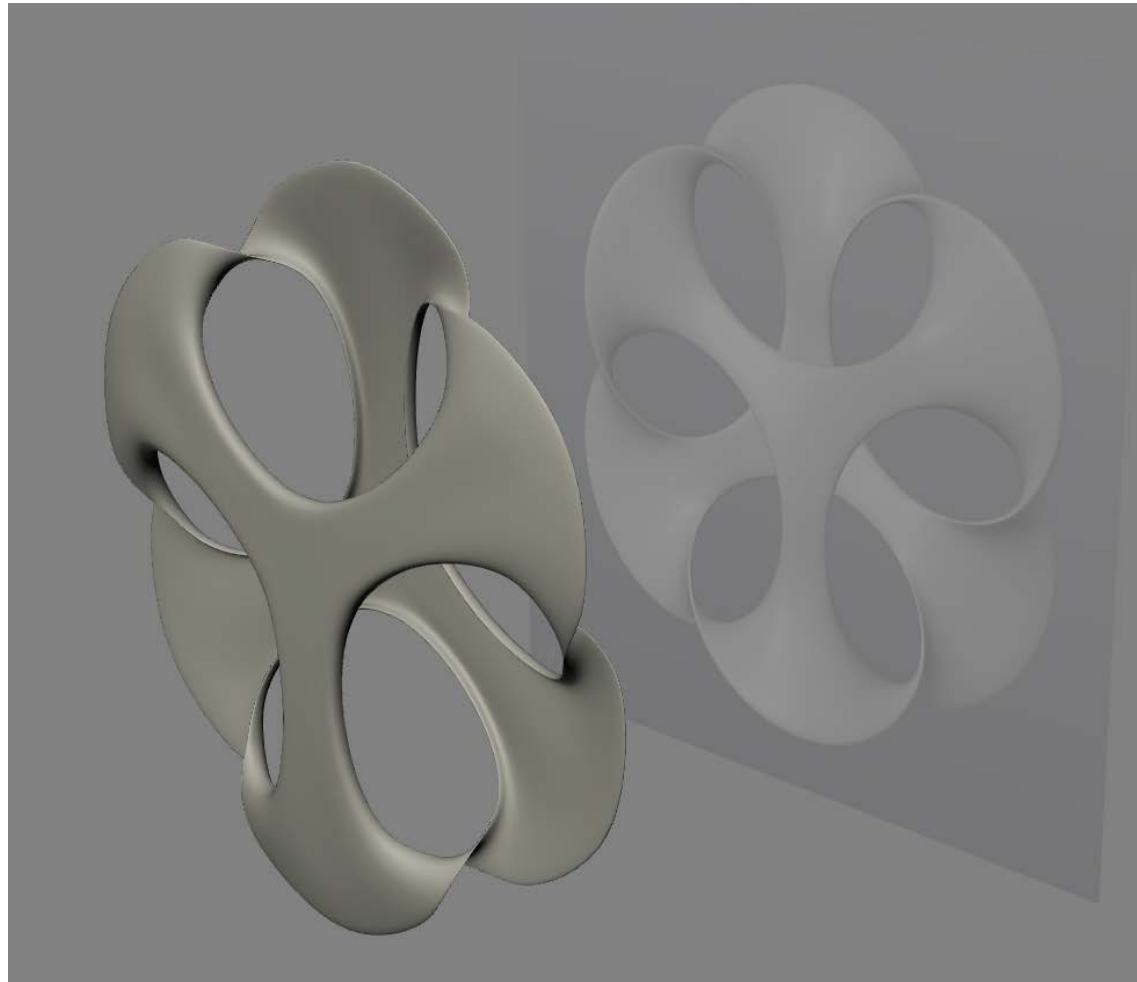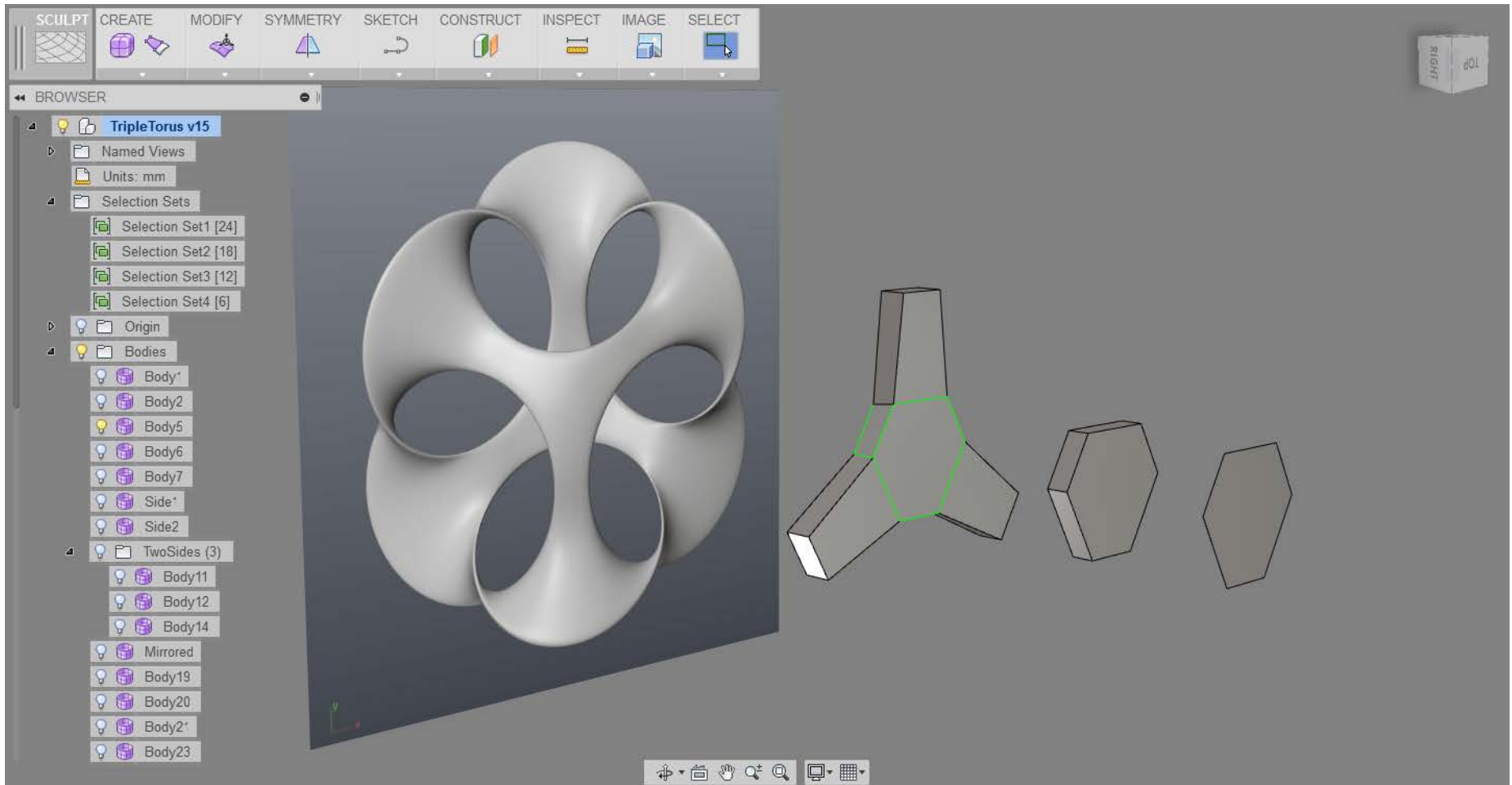# Building Sunflower Knot

Took the captured image and created a Background canvas.
I had a few false starts but finally used **Face** with **Multiple Side** option to create a six sided face which I then **Thickened** with sharp edges. Then I extruded three of the faces for the basic shape.

Applied circular symmetry with option for three. Love circular symmetry because it will evaluate the input and provide you with potential options that are available. In this case I wanted circular symmetry with three sides.
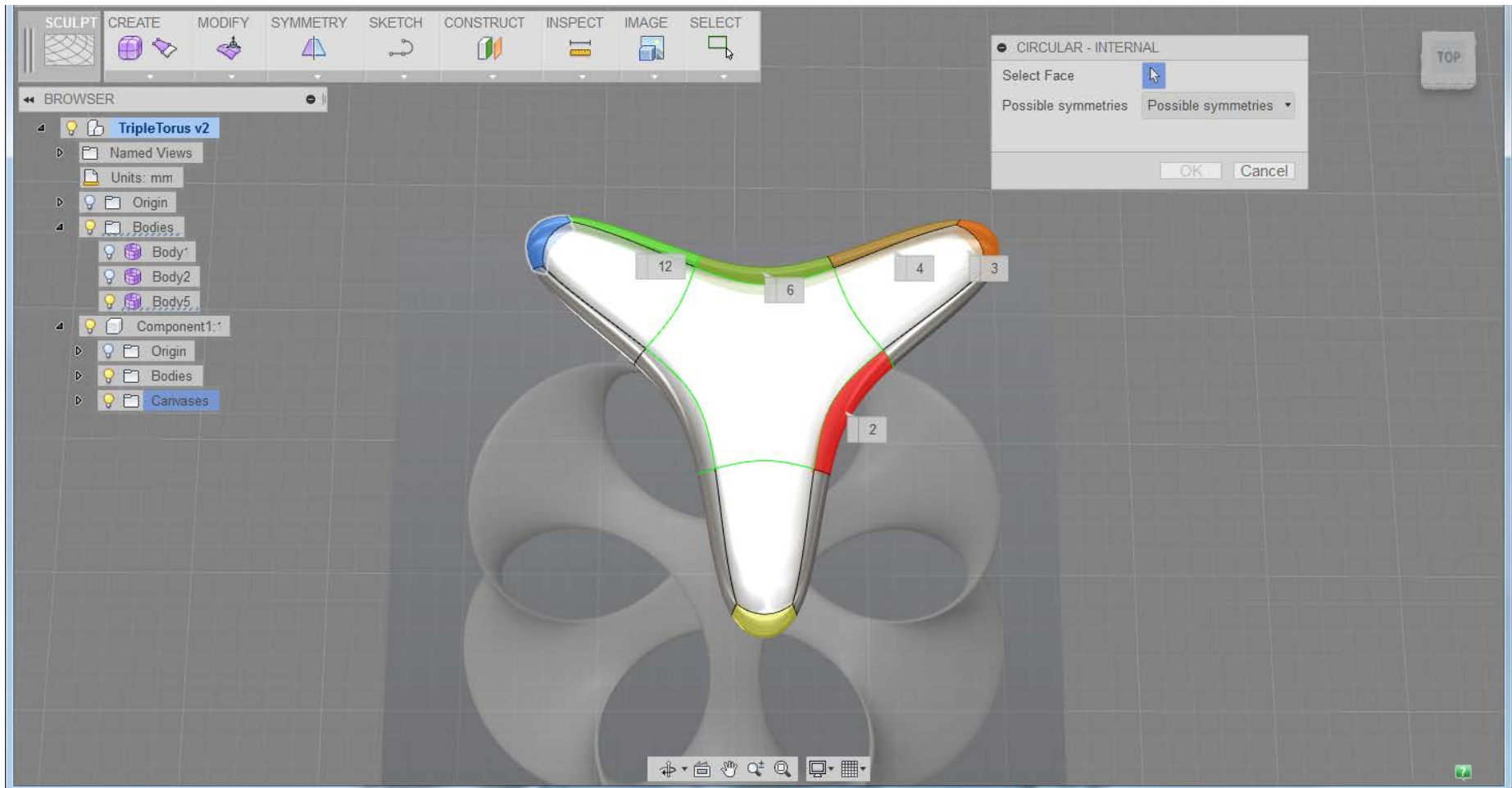
Fit the shape a bit more by using **Edit Form**, extruding faces and scaling. I wanted to create two symmetric forms so I used **Insert Edge** to place a loop of edges between the two sides and then **Unweld Edges** to separate the sides.
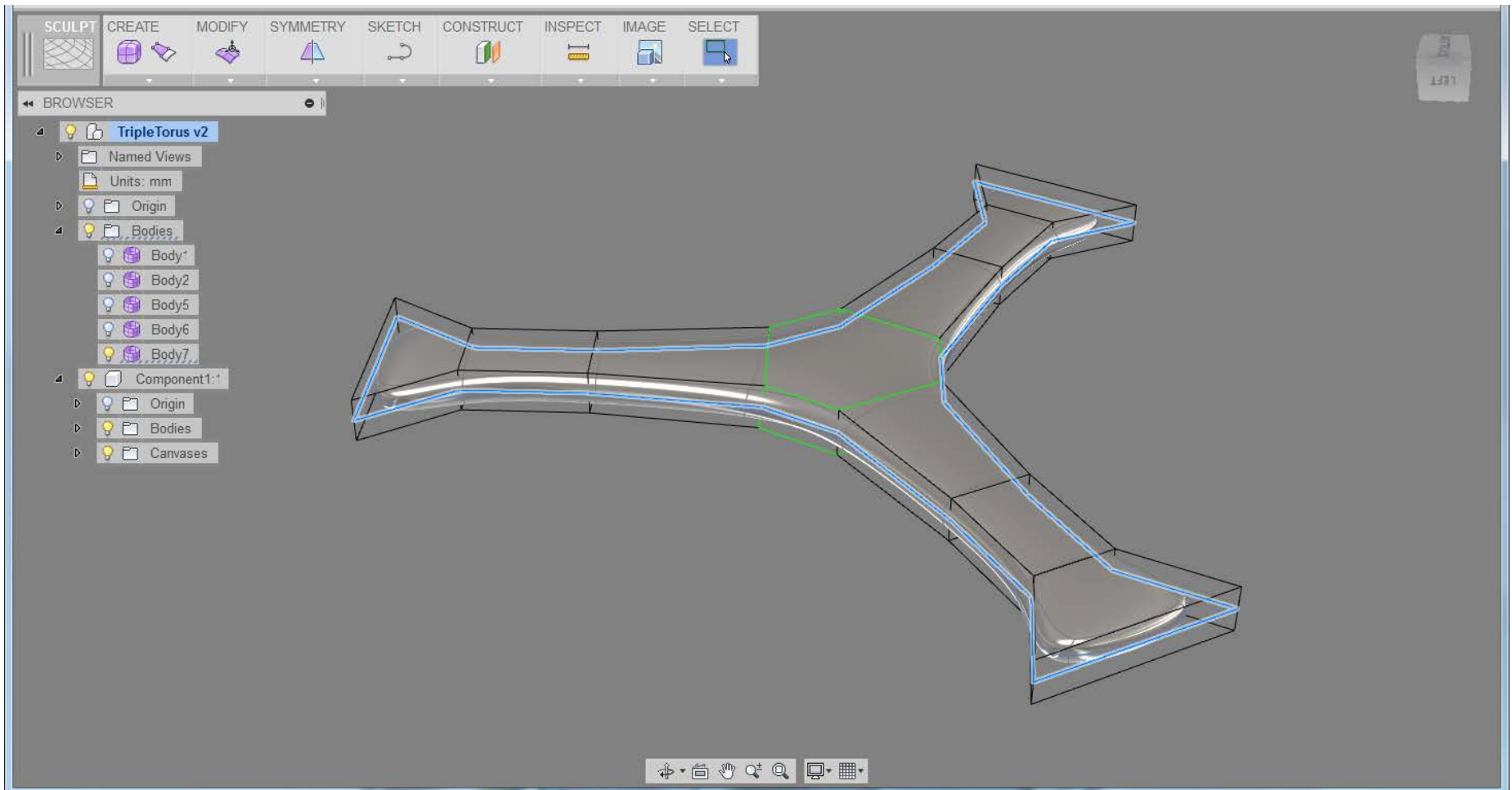
I wanted to "pull" the body out of a plane so I used **Edit Form Soft Modification**. Selecting the six sided face with the circular option I set the radius for selection to include everything except the outer boundary. Then when I moved the central portion the other vertices moved with a proportional move. This would be a good way to elaborate on the shape as well.
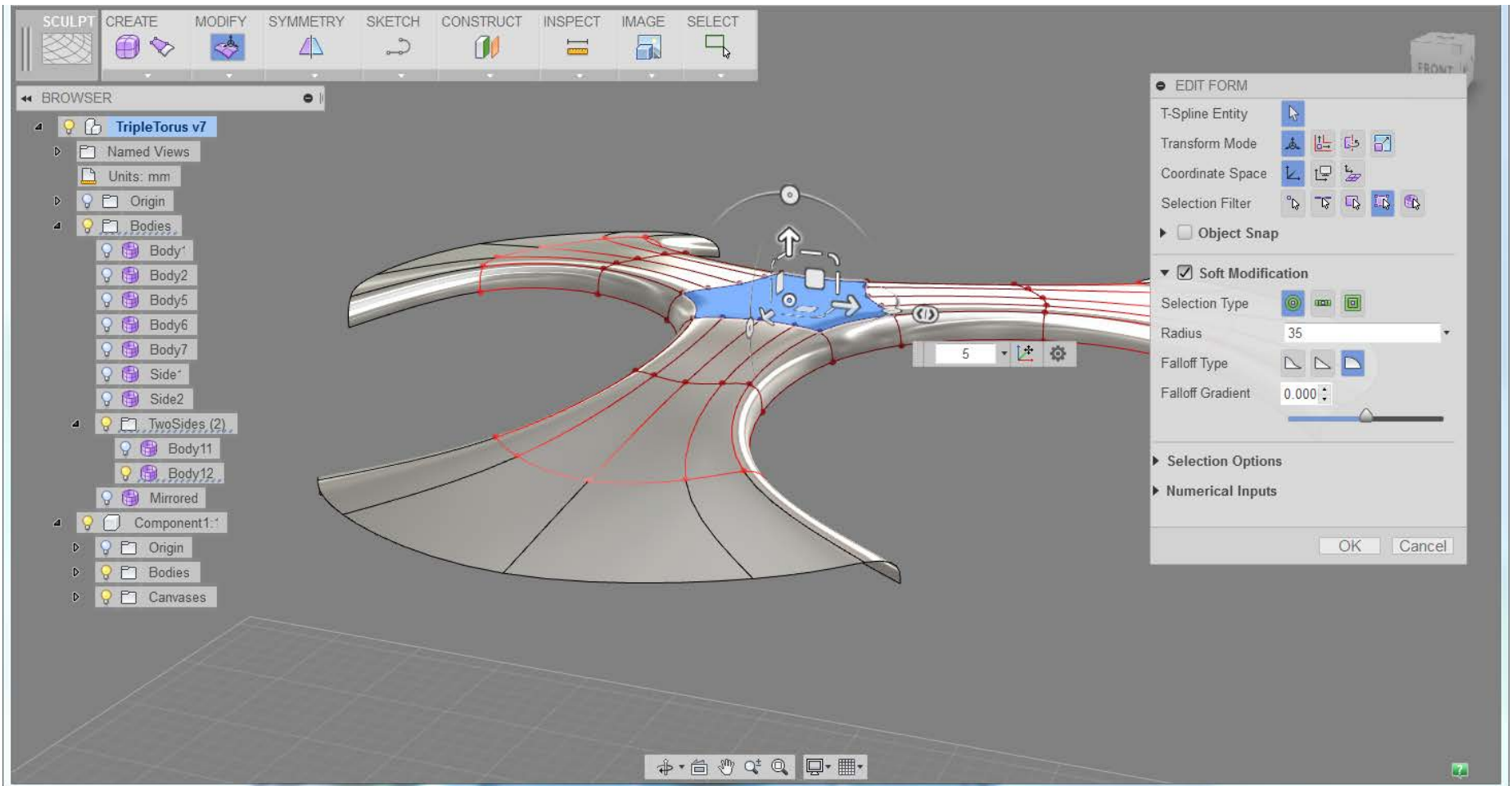
Copy paste and flipped one side 180 degrees to get the two side which would need to be joined.
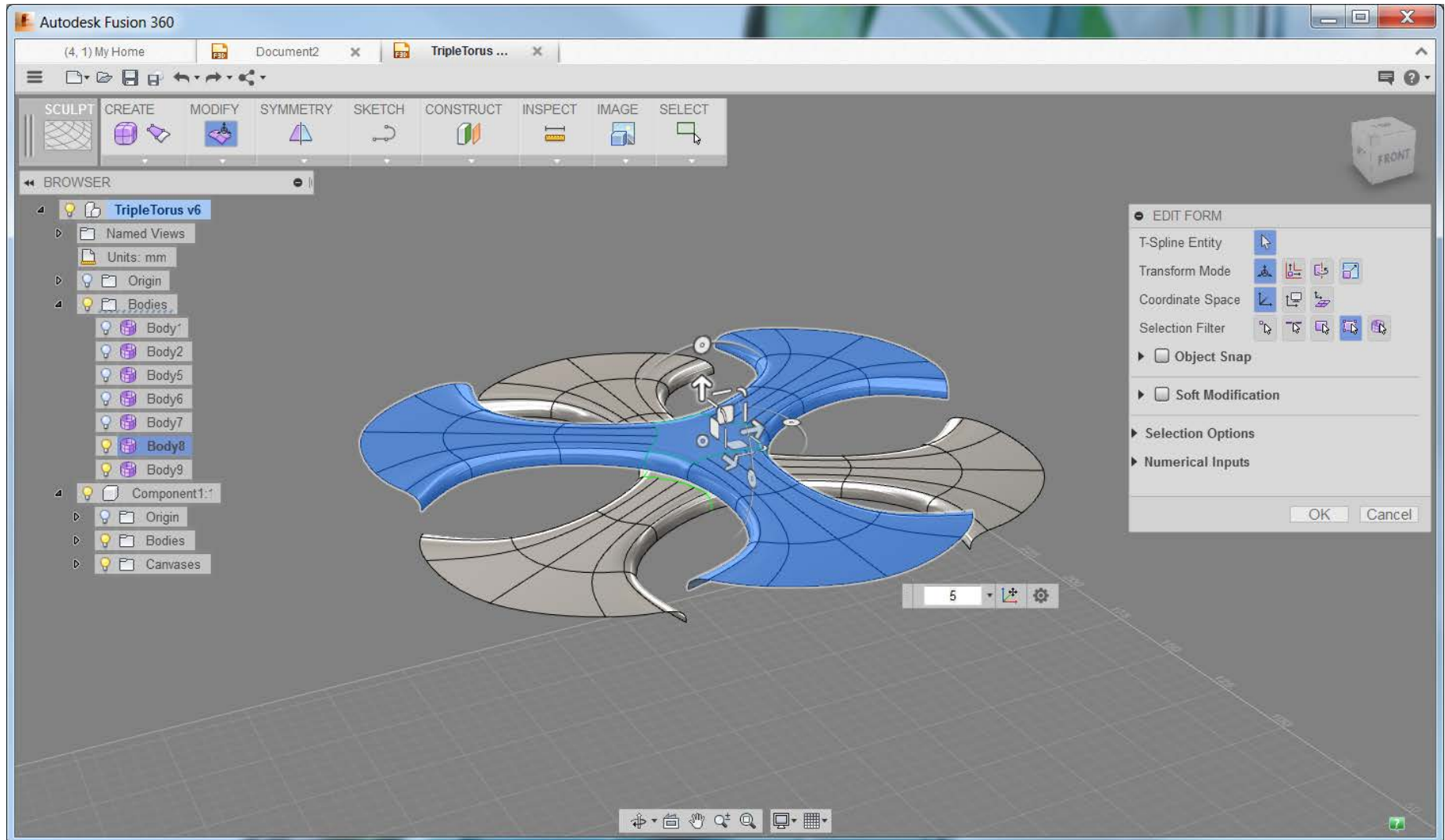
This is where my head began to hurt. Joining the two pieces meant thickening. Ran into some problems where a symmetric model wouldn't thick so had to remove symmetry. I think that is a bug which I will follow up on.
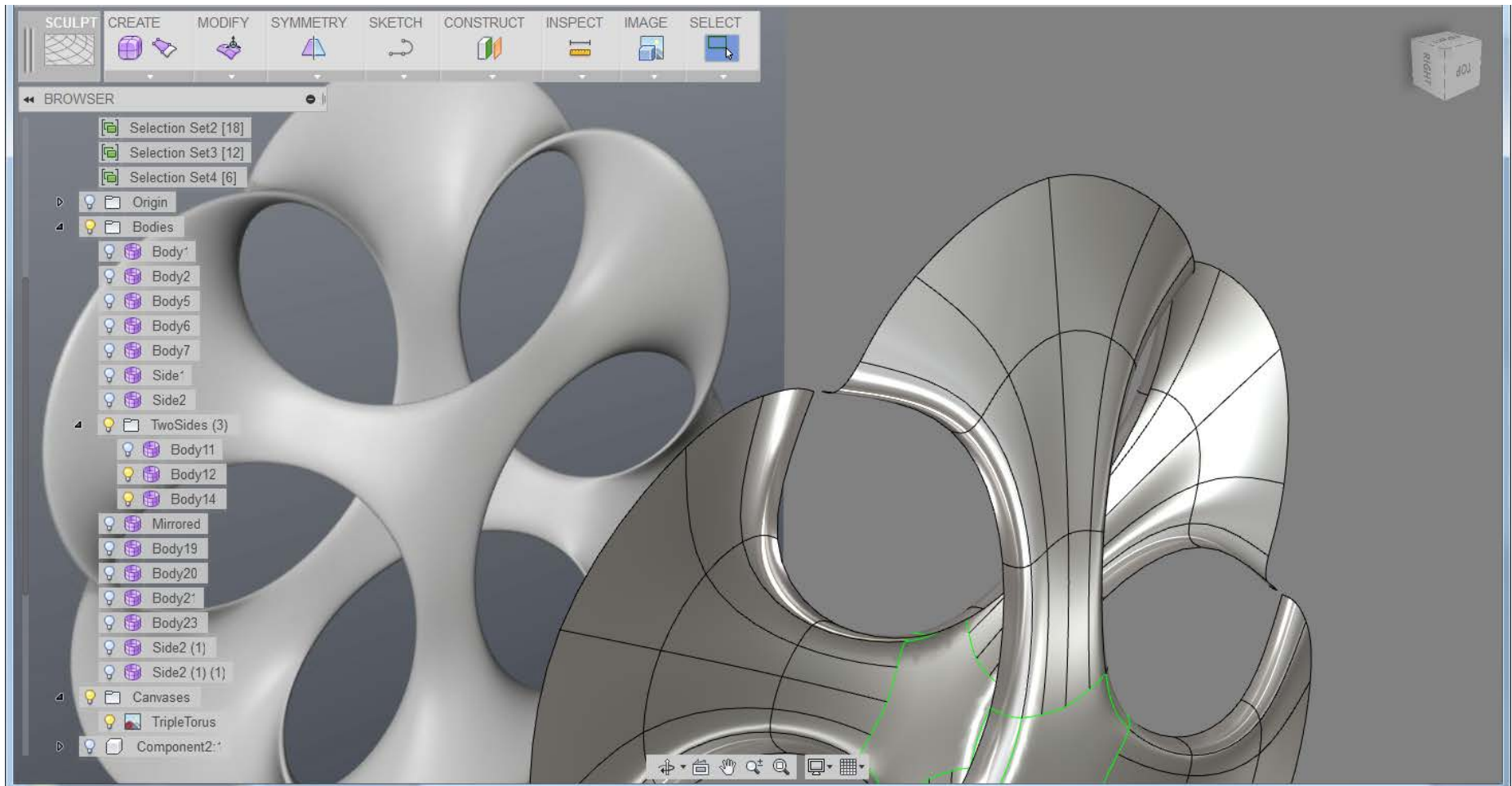
To try to get the shape right where the join happened I "chopped" one section out and then created a component. I also added an edge to get more flexible . When I created another copy of the component I flipped and rotated it. This allowed me to modify one section with **Edit Form** and see the change on the other component that had been flipped. Copied components update when the original changes even though they are transformed.
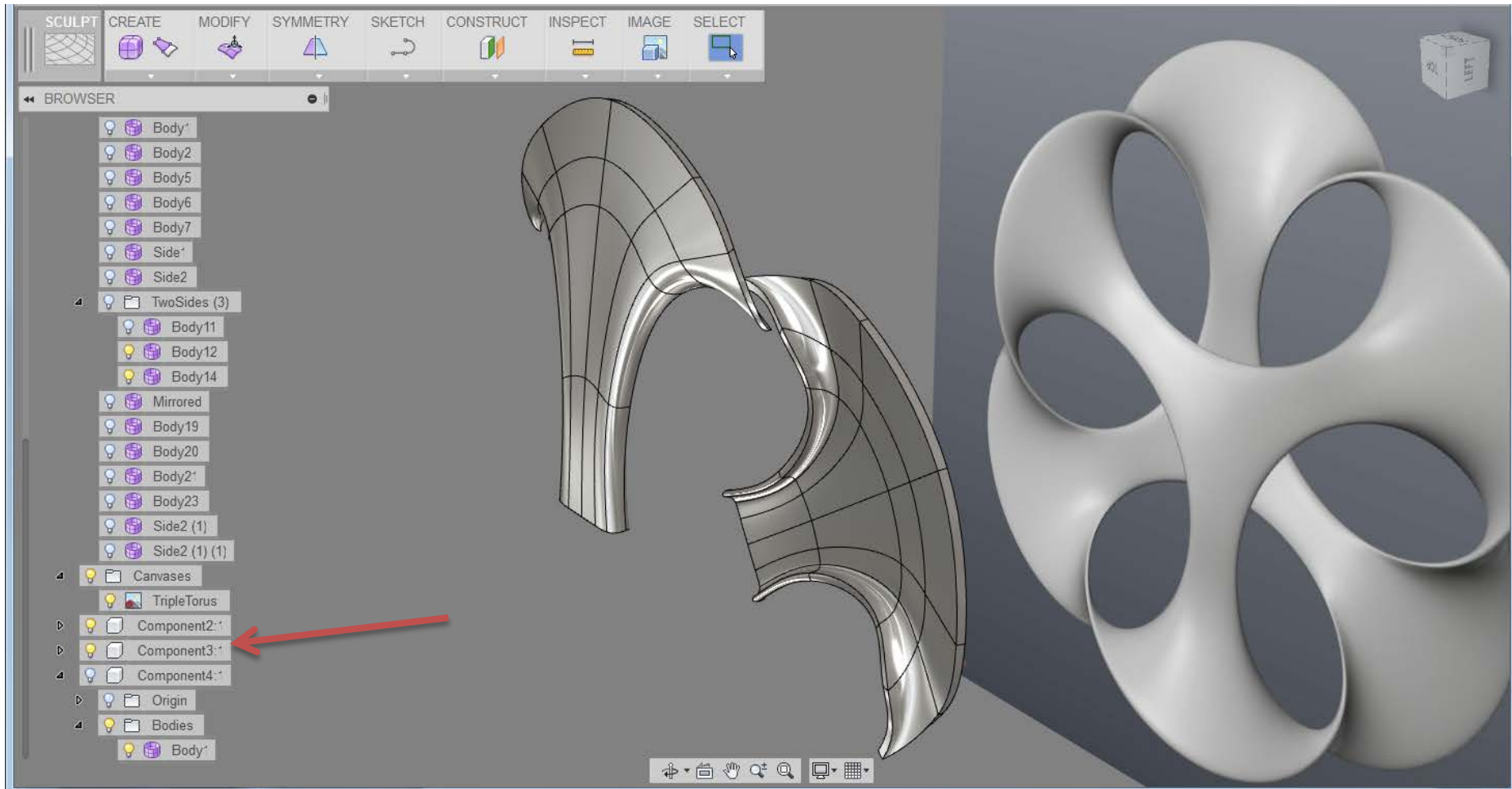
Once I had the faces ready to join I used **Circular Symmetry – Duplicate** to get the three section. Now with the segments in position I joined by deleting the faces that face each other and used **Merge Edges** to combine the meshes. I tried **Bridge** but didn't like the results of adding faces which is required with **Bridge**.
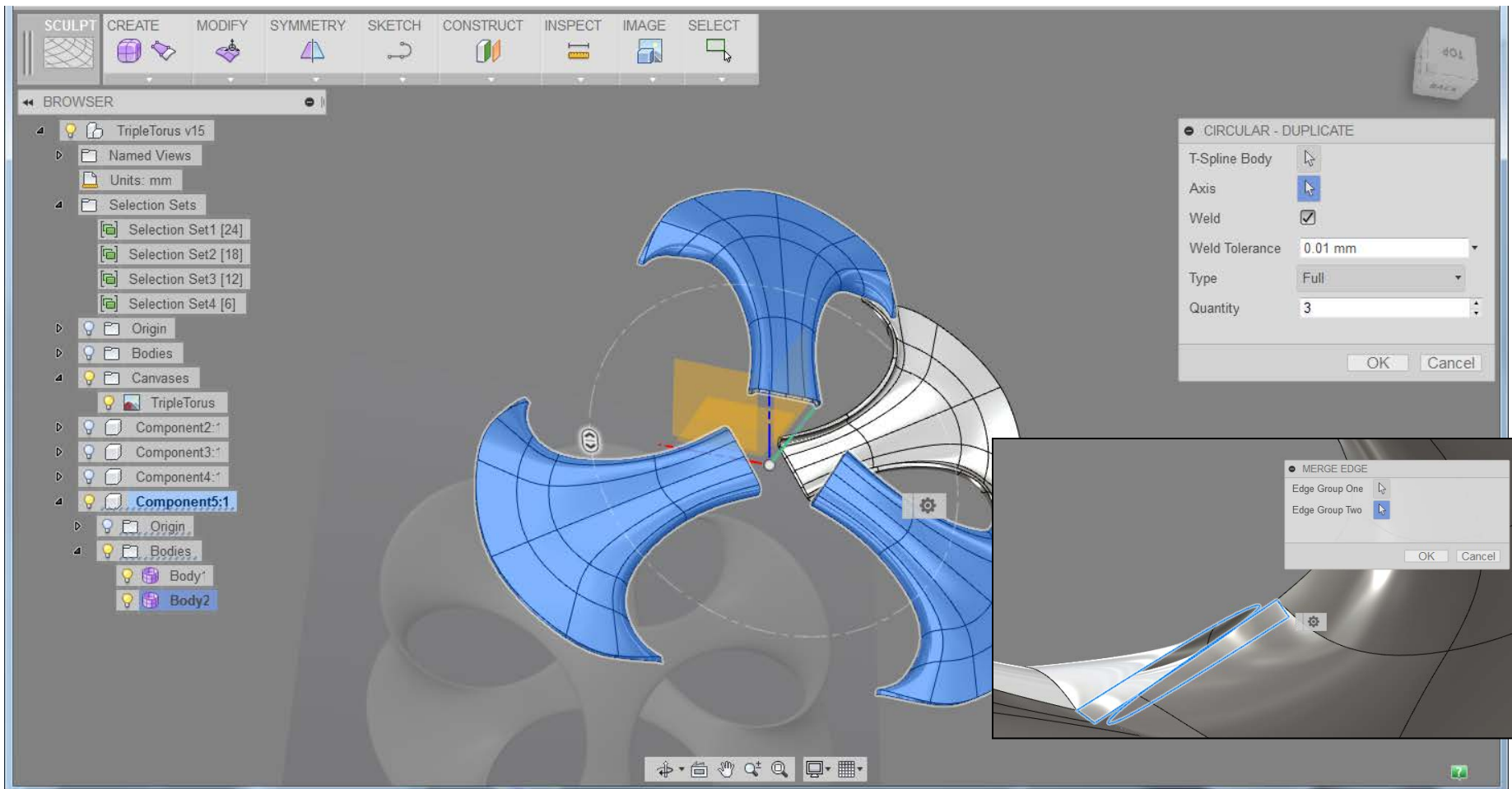
I then patched back in the center portion with Merge Edge. I tried reapplying symmetry at that point to tweak the surface but couldn't find a way to apply either mirror or circular symmetry to the topology. I will have to look into that but the joined sections in a Mobius strip may be just too much for the symmetry analysis.
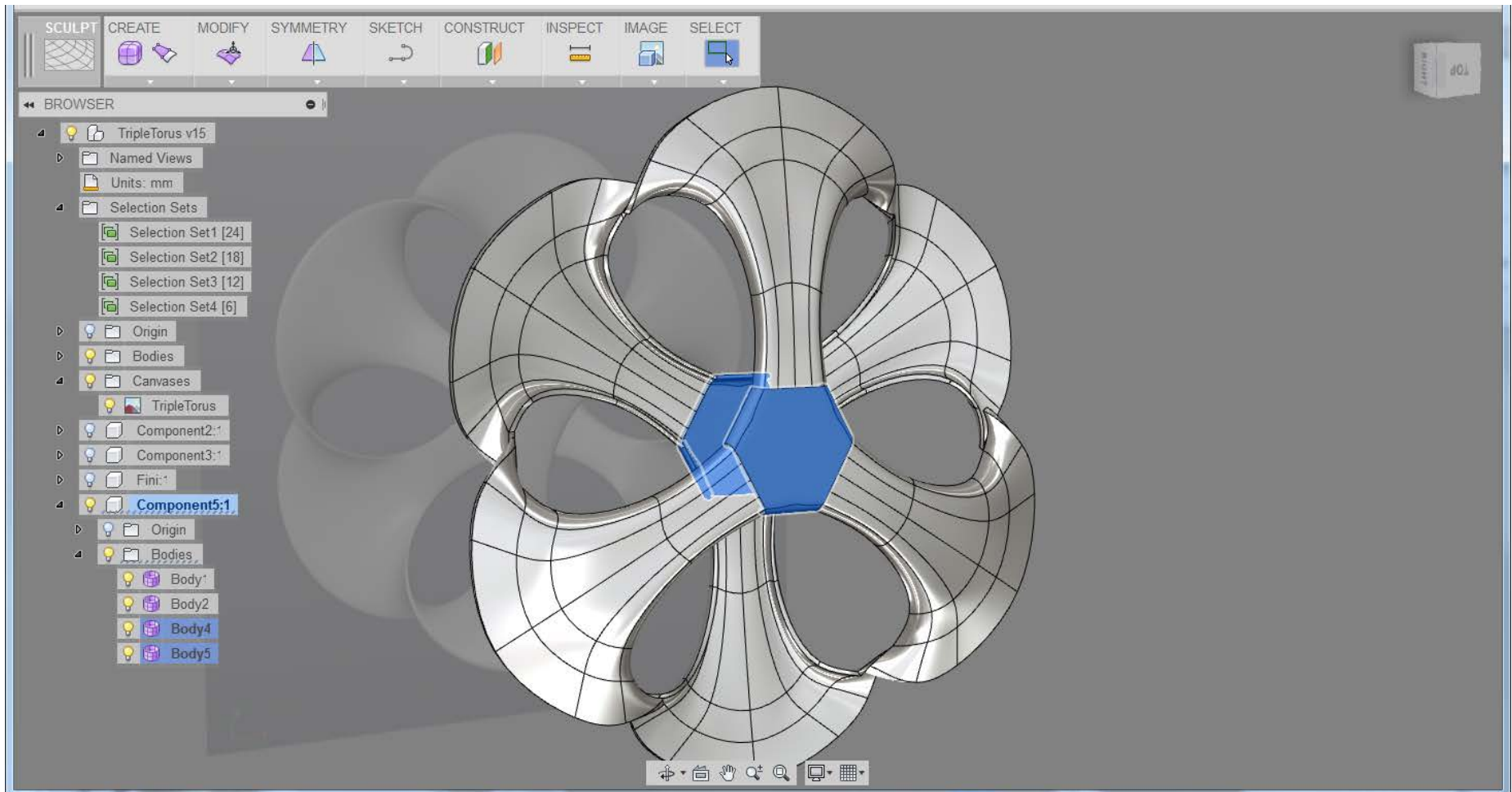
I still wanted to get a bit more "crown" in the faces but circular symmetry wouldn't work so I created **Selection Sets** to make it easier to re-select when using **Edit Form**. Selection Sets can be created by making any selection and then using the context menu (right mouse button) to "Create Selection Set".