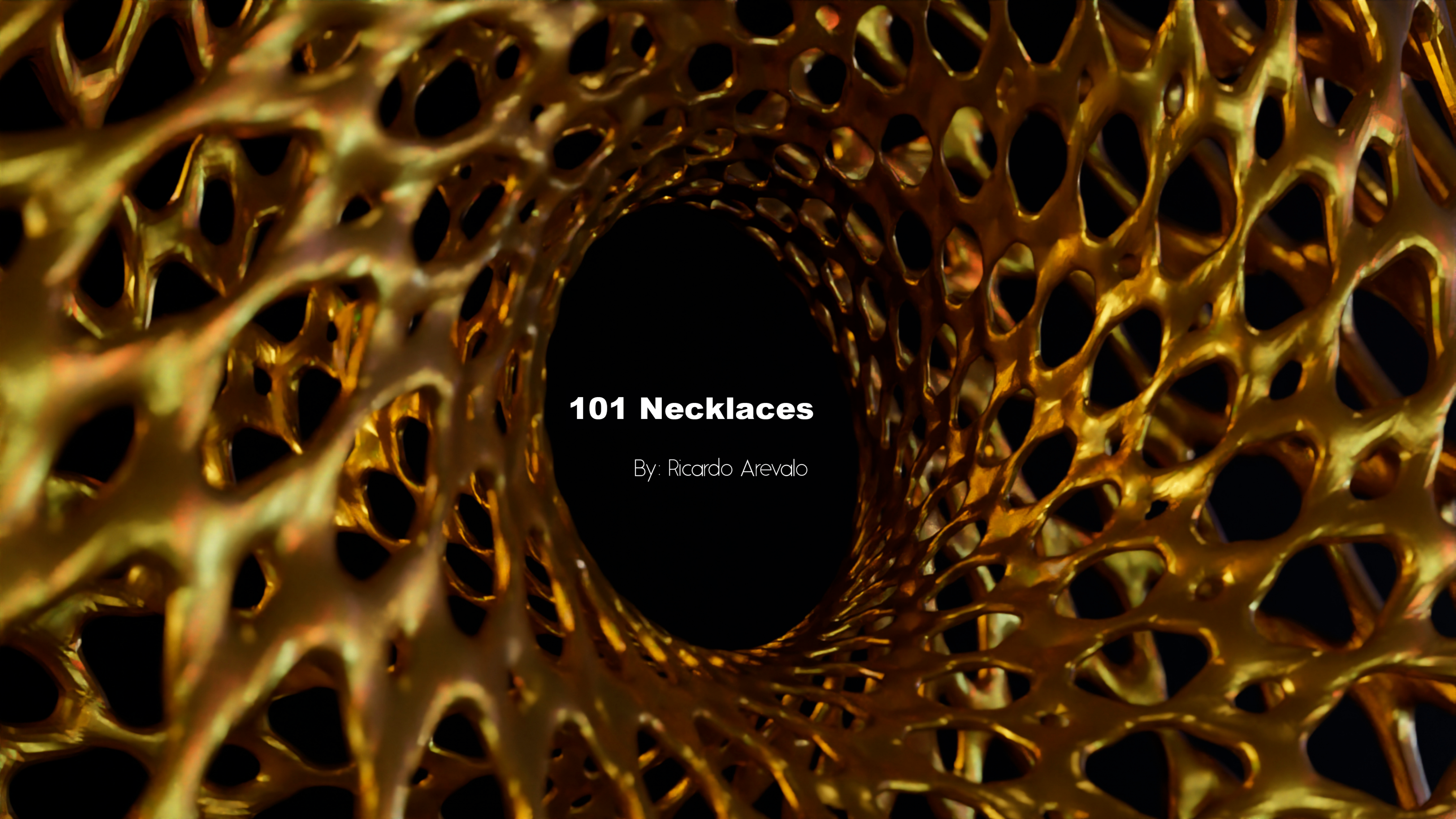
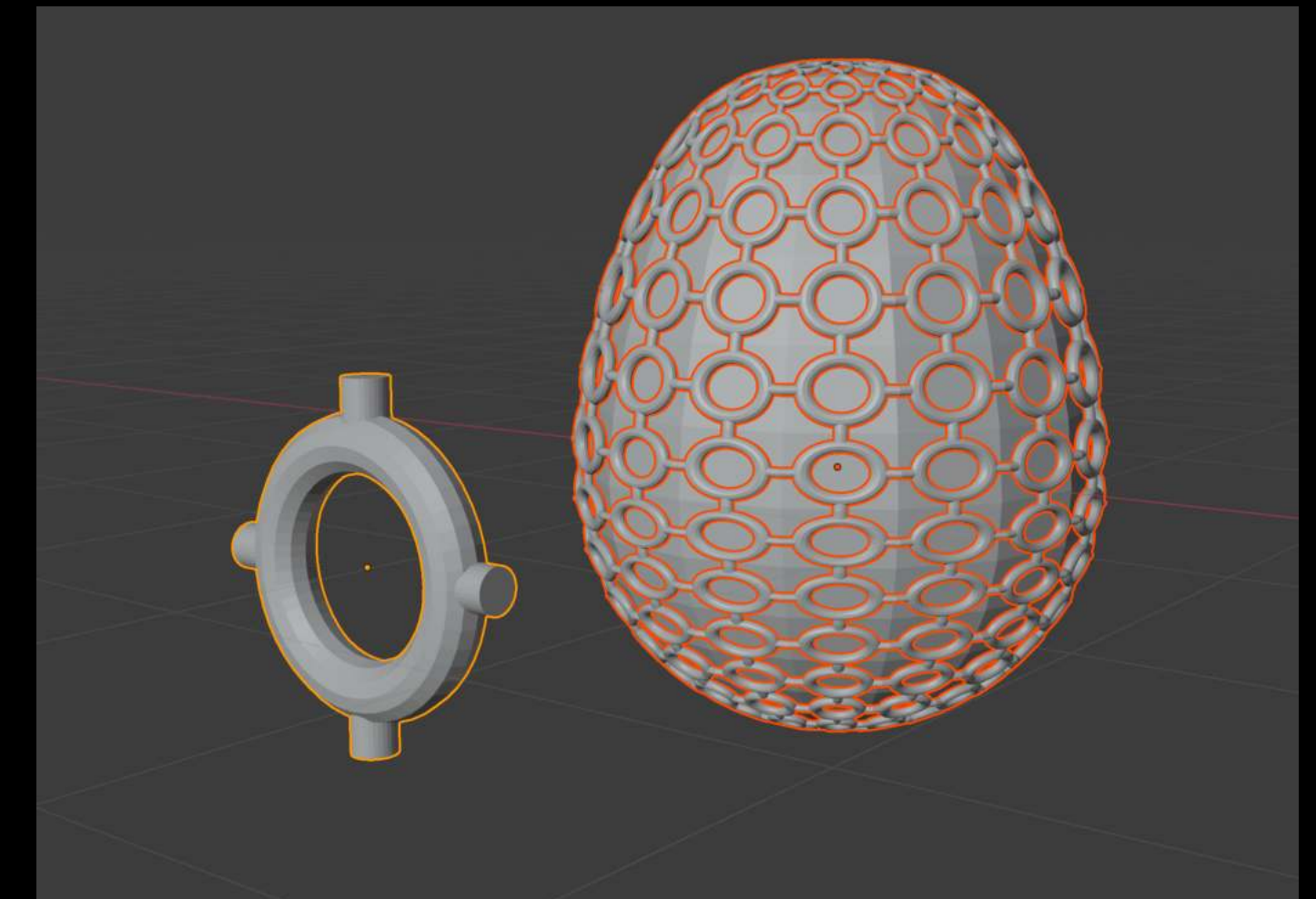
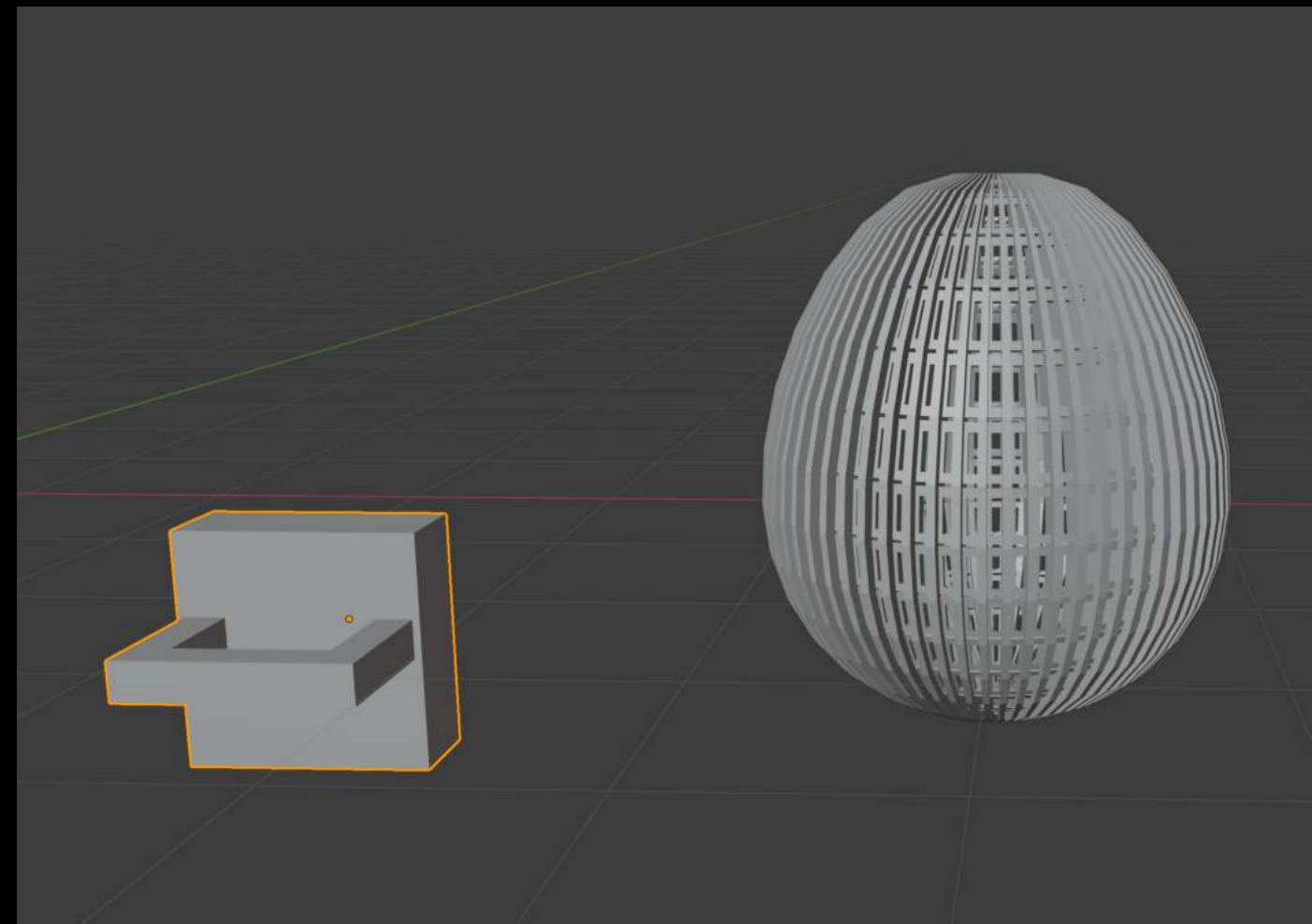
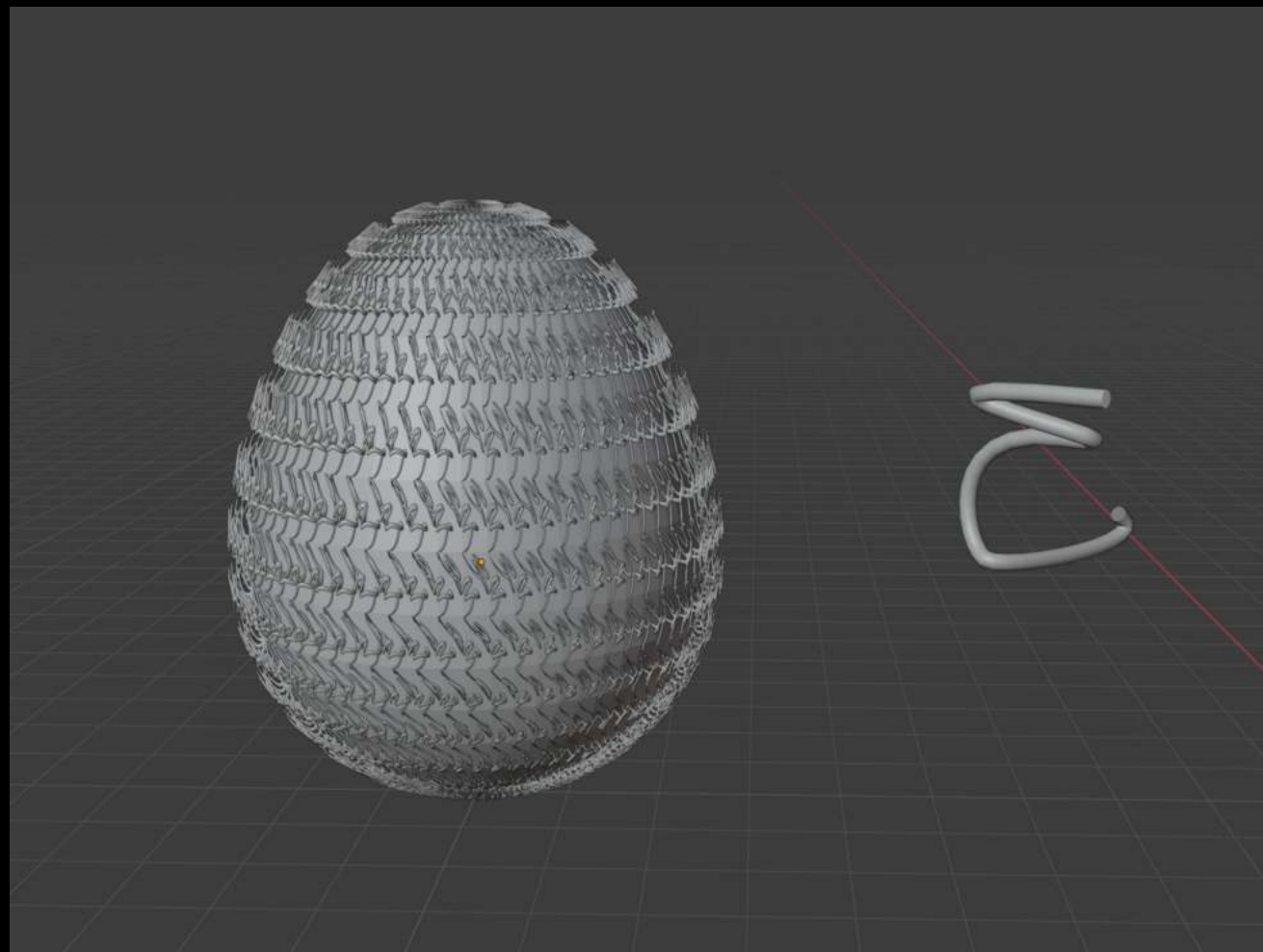




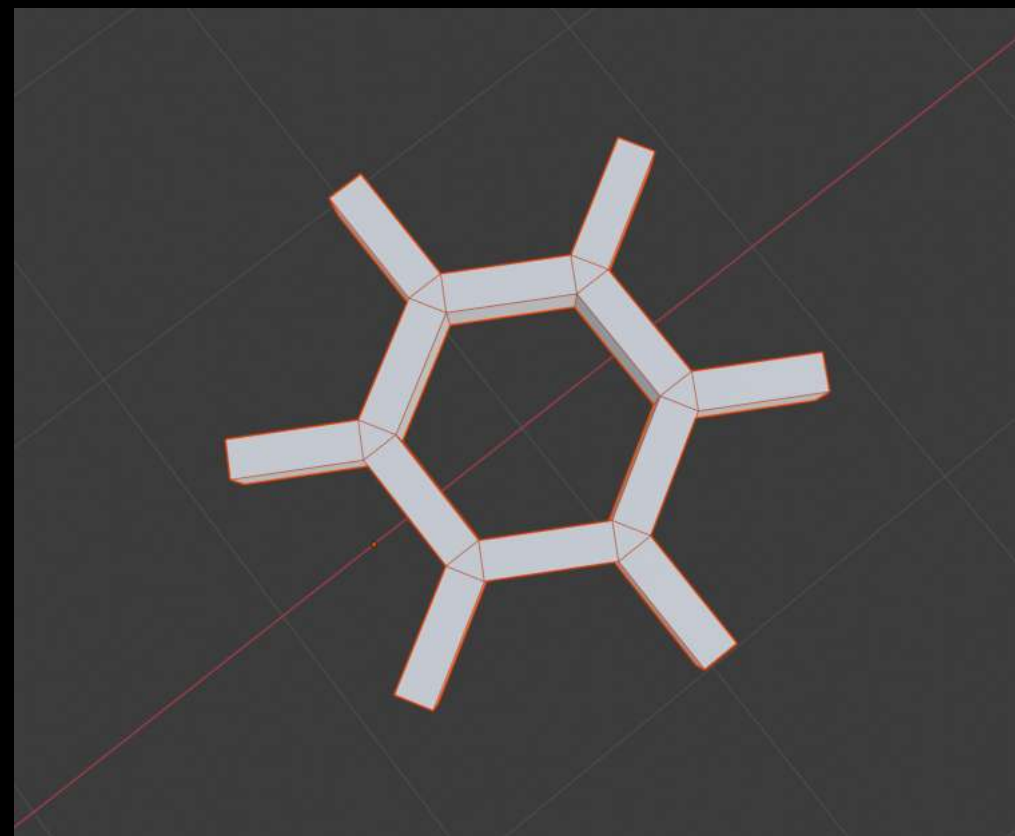
101 Necklaces

By: Ricardo Arevalo

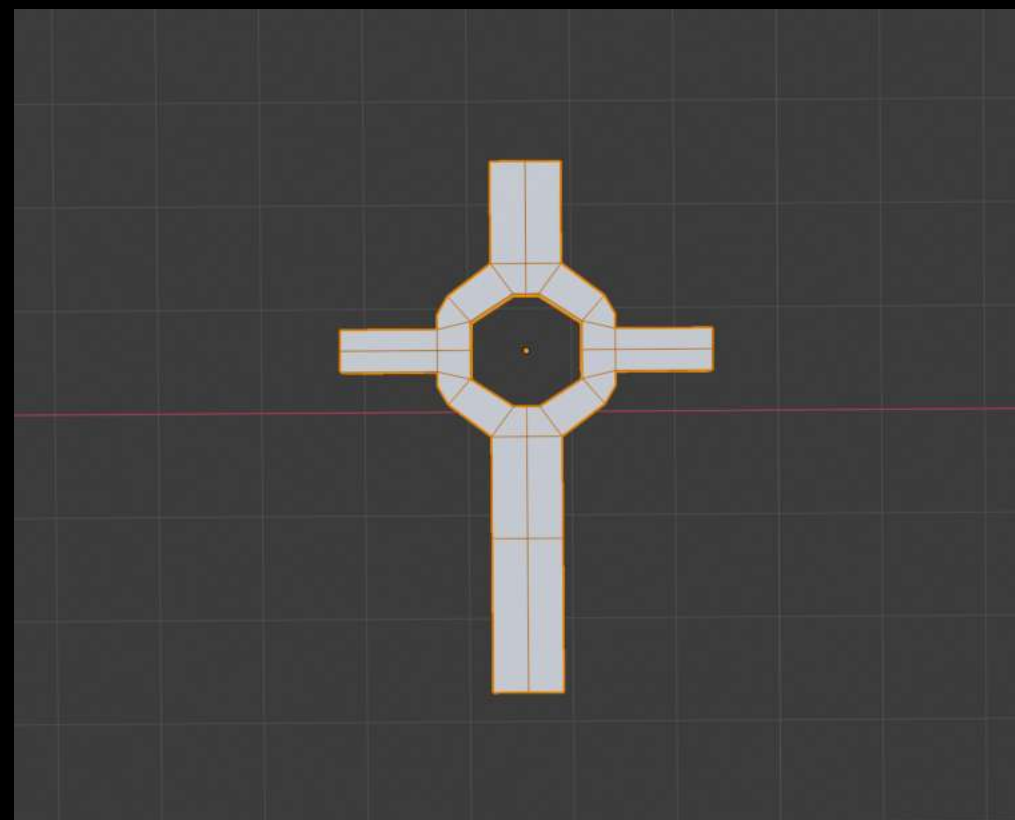


Experiments with Tissue

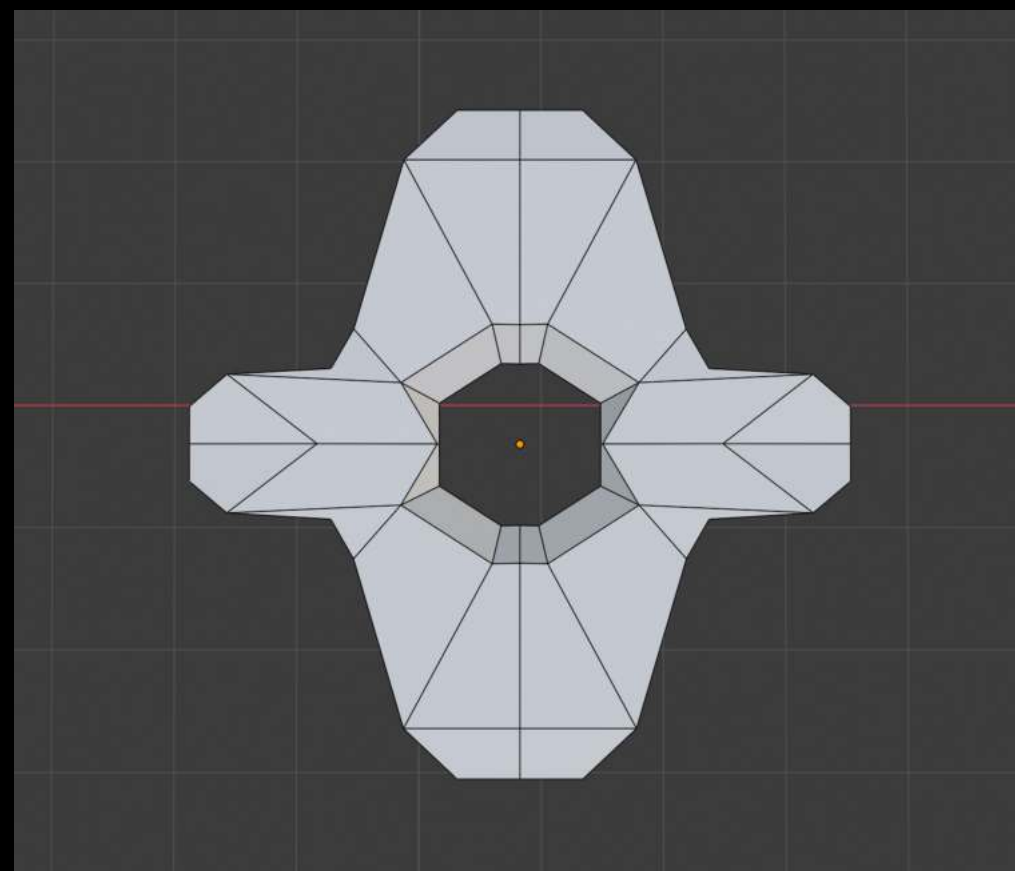
In these experiments, I was trying the functionality of the Tissue Plugin. I was not really sure about what type of objects the plugin could tessellate on surfaces. In the experiment of the left, I was trying to tessellate a solidified curve. In the experiment in the middle, I wanted to examine what direction would the tessellations follow. Lastly, in the experiment of the right, I wanted to see if I could create a standard pattern over a surface. These three experiments did not take me anywhere on my creative process. However, they were useful to get familiarised with the software.



I started designing the component that was going to be tessellated on the final mesh. I started creating a shape similar to snowflake. I liked the layout of the shape. However, I did not want a shape with too many connections because the final tessellation would look messy.

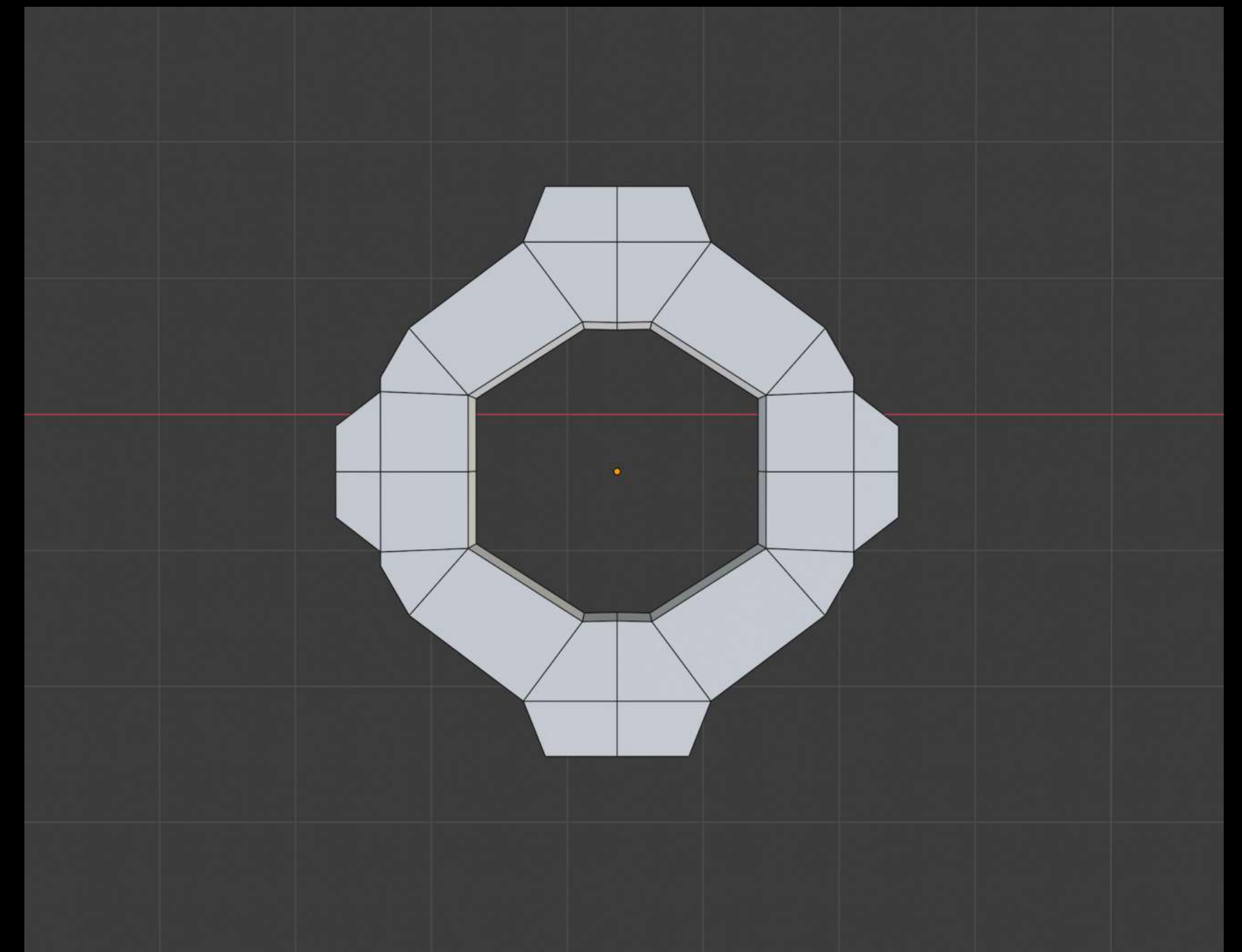


I took the same shape and reduced the amount of connections from 6 to 3. I also elongated one of the connections so there would be more space between each hole. It looked light and irregular at the end so I discarded it.



This time I thought about doing the exact opposite, create a more enclosed shape and aim for solidity in my whole object. This resulted on an object with very small holes that the viewer could not really appreciate.

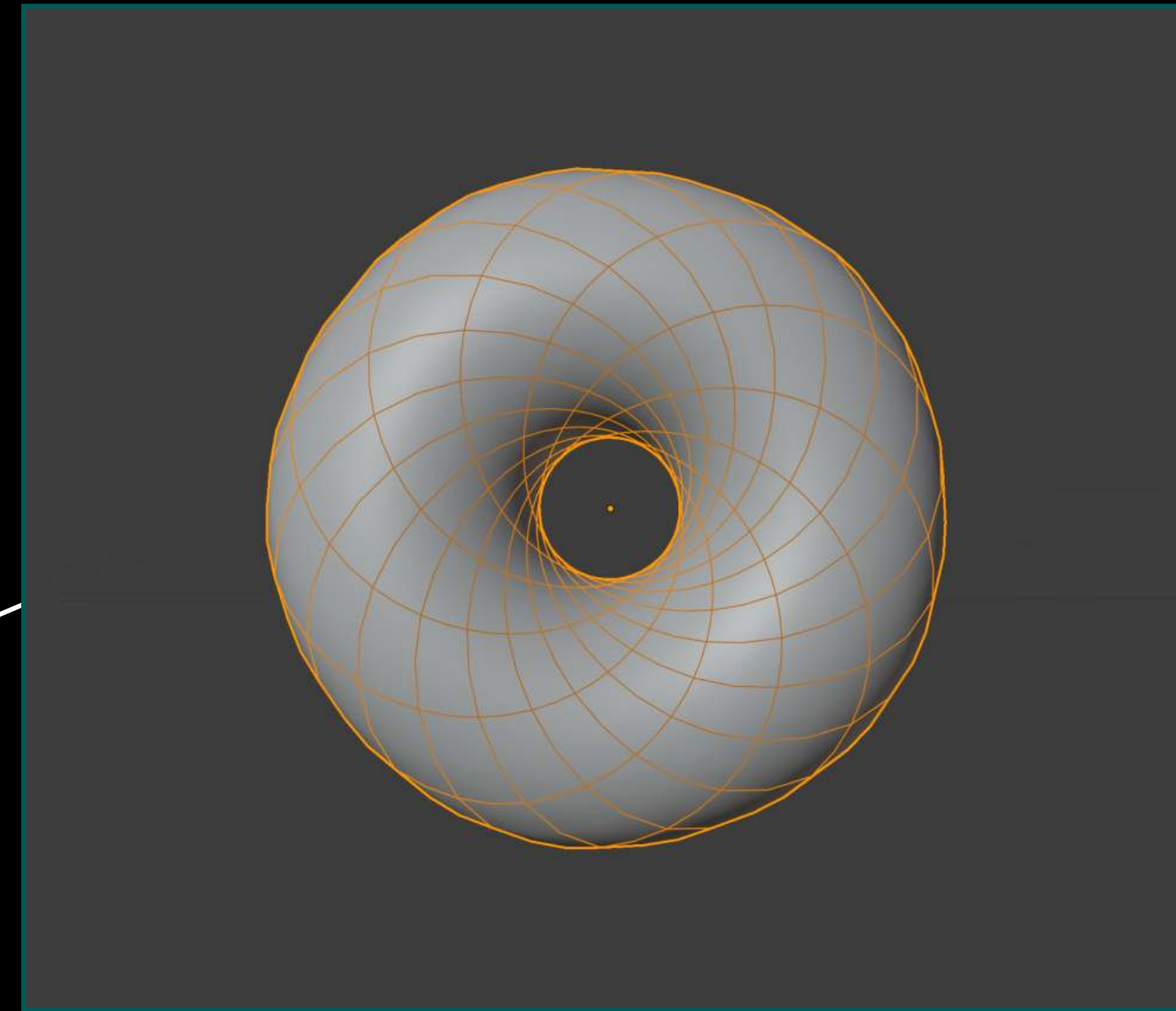
Tessellated Component



I decided to take a step back and use the same shape that I created at the beginning. I only had to make the connections smaller and thicker. Then, I had to make sure that the hole in the middle had an average size. This ended up being my final tessellated component.

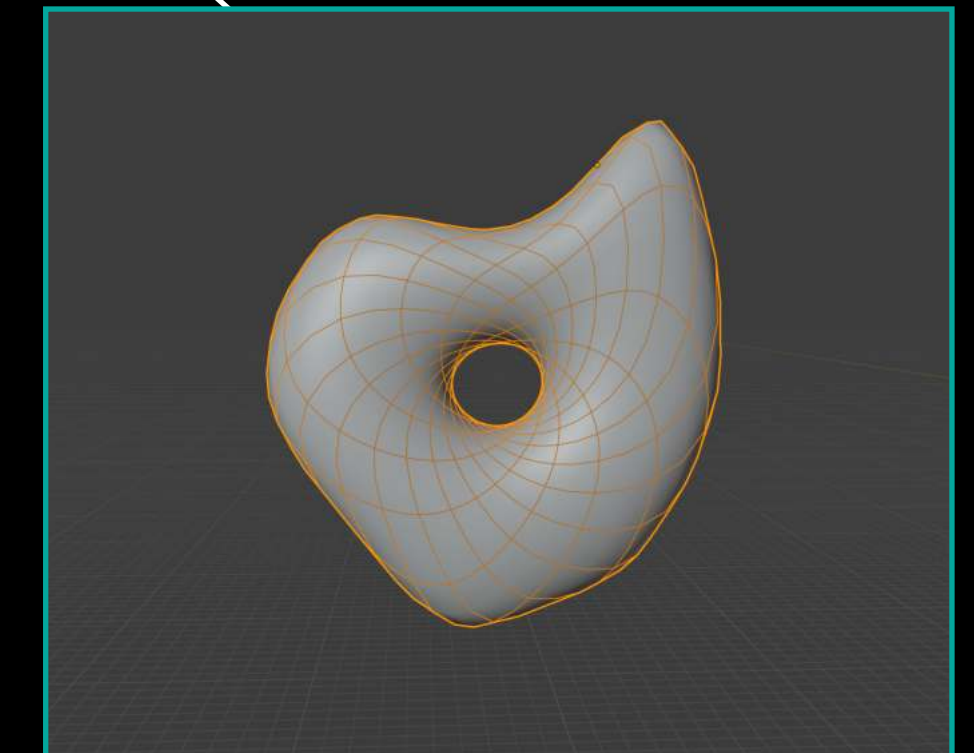
Base Mesh

Initial shape



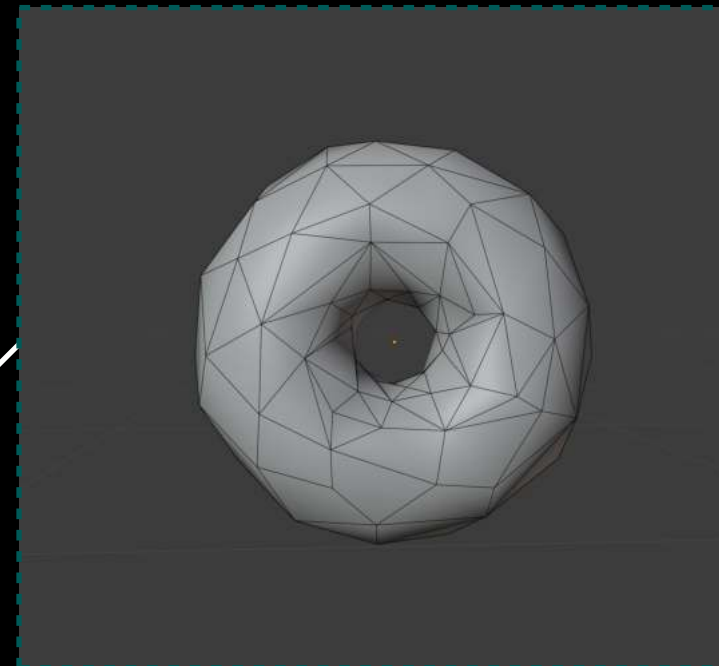
Because my intention was trying to make a necklace, I thought that a torus would be a nice shape to start sculpting. Then, it was a matter of deciding if I wanted to create either an organic shape or an inorganic shape.

Organic shape

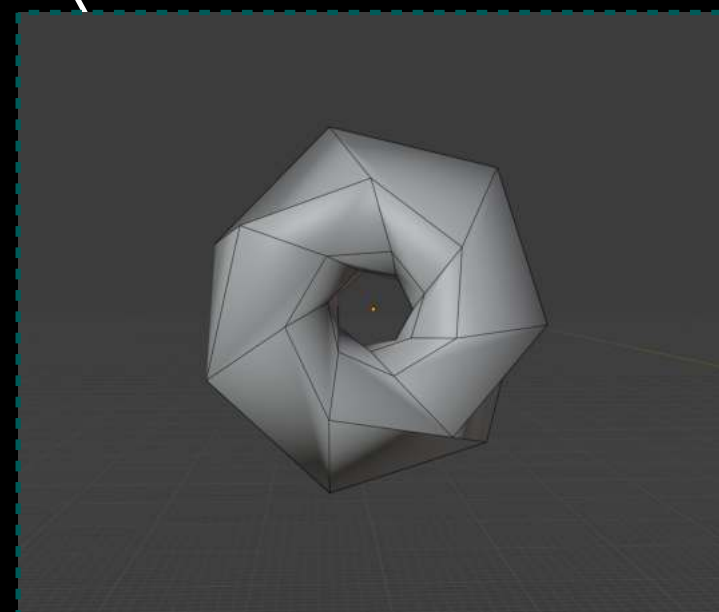
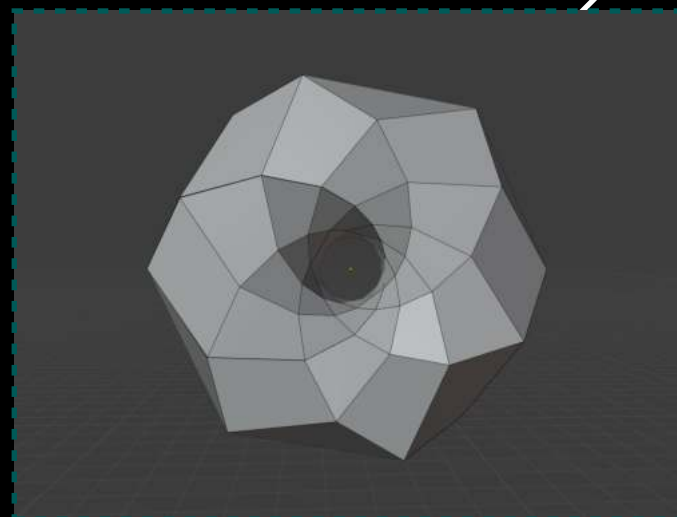


If I decided to go for an organic shape, I wanted to achieve a form that looked solid but dynamic.

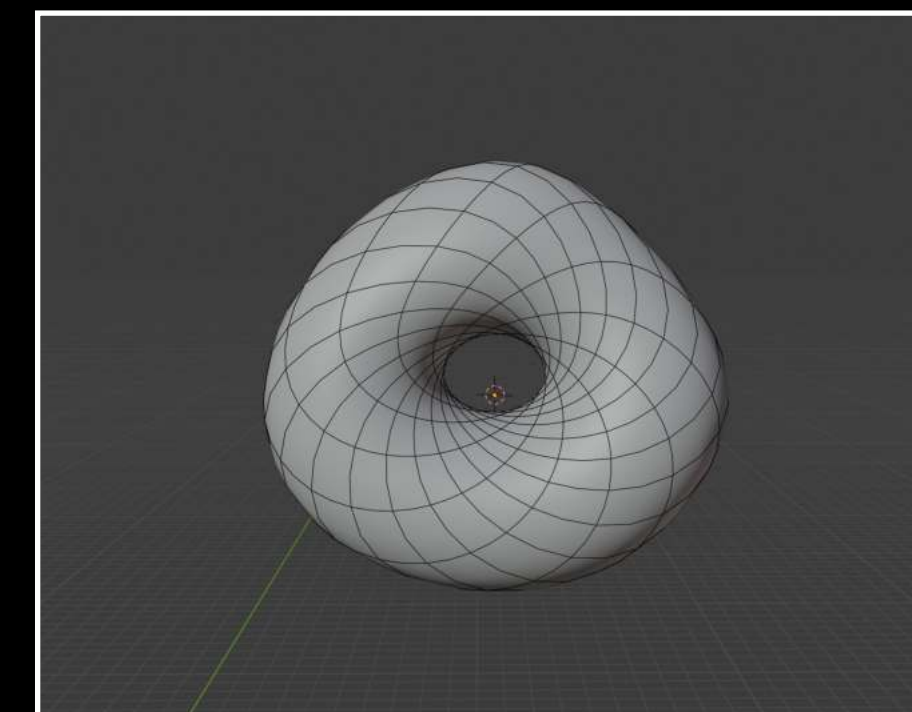
Inorganic shape



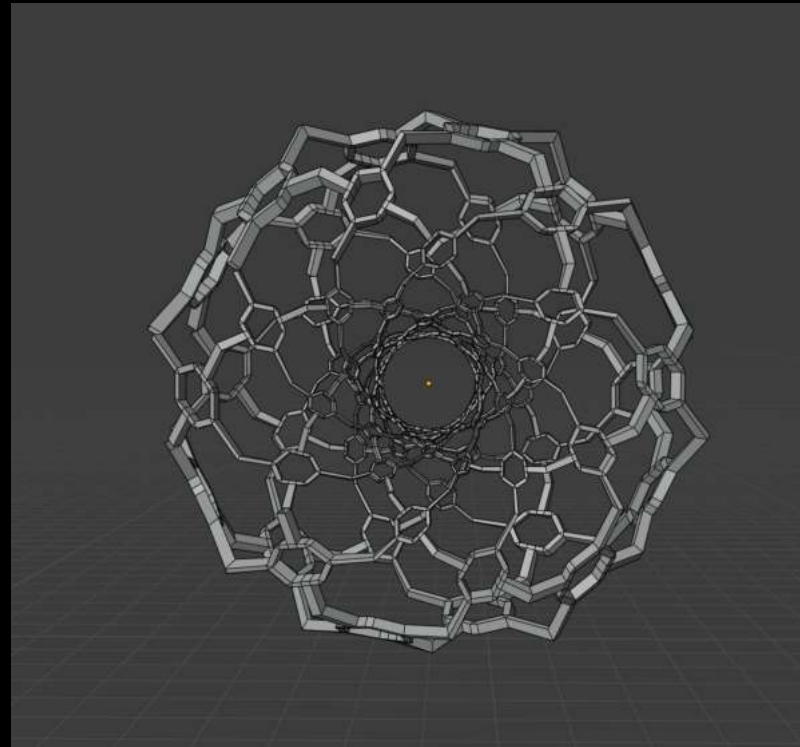
I tried to un-decimate the initial mesh to see if I could get a shape that was both symmetrical and light.



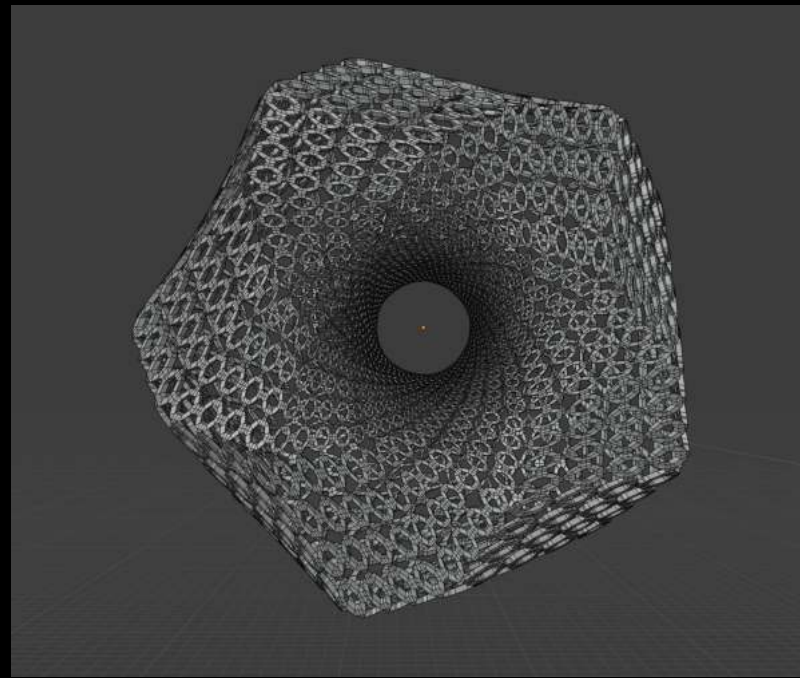
I felt good about this shape, so I thought I could do light modifications to this mesh and work with it.



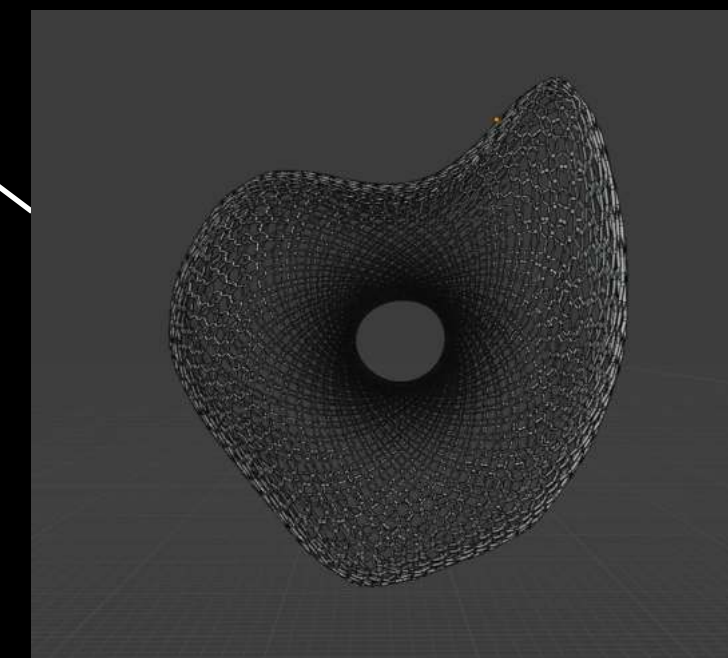
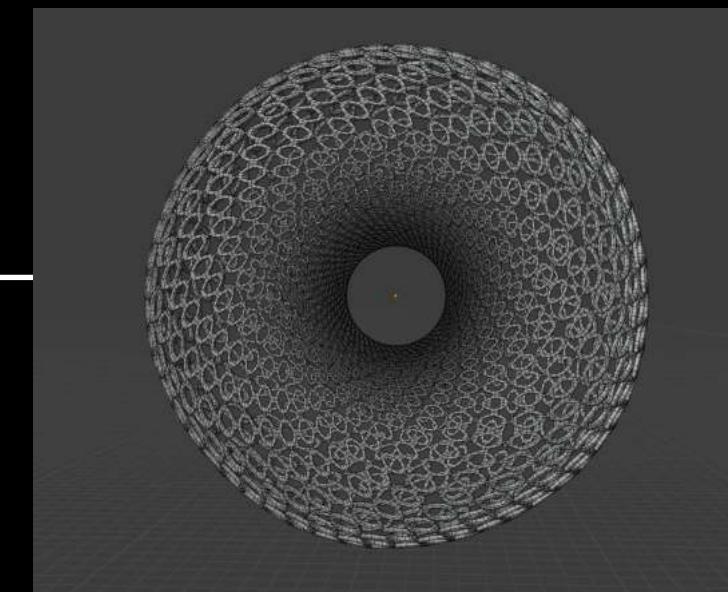
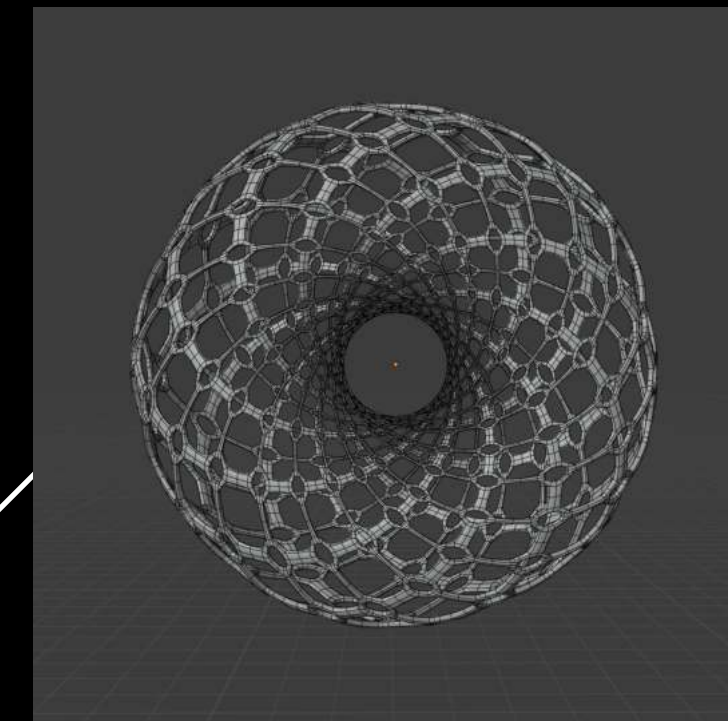
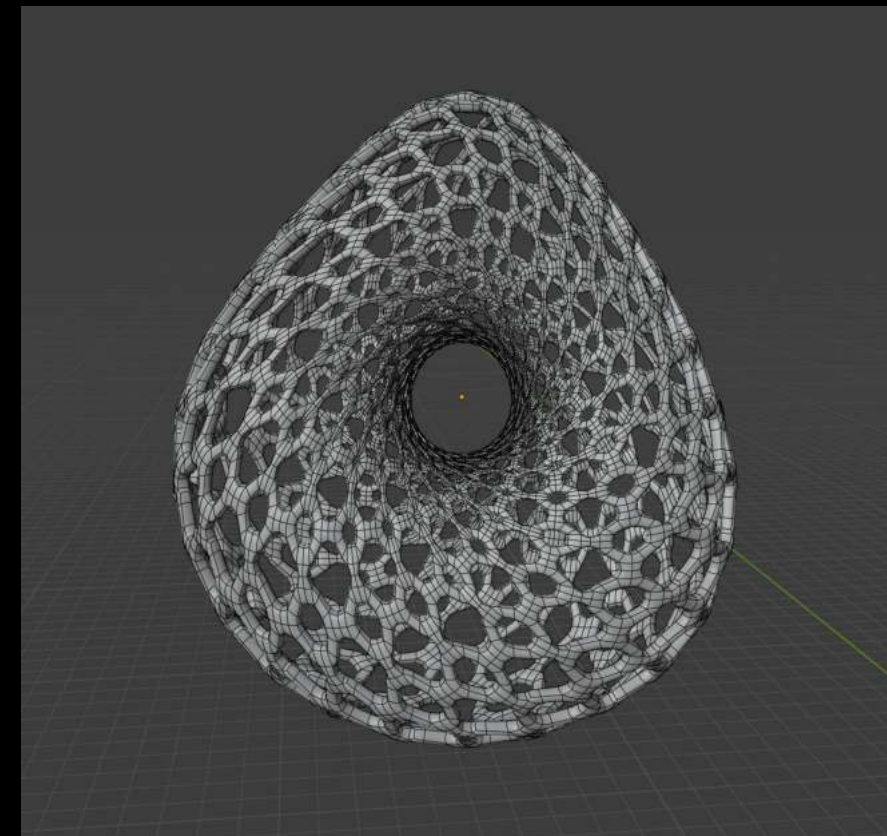
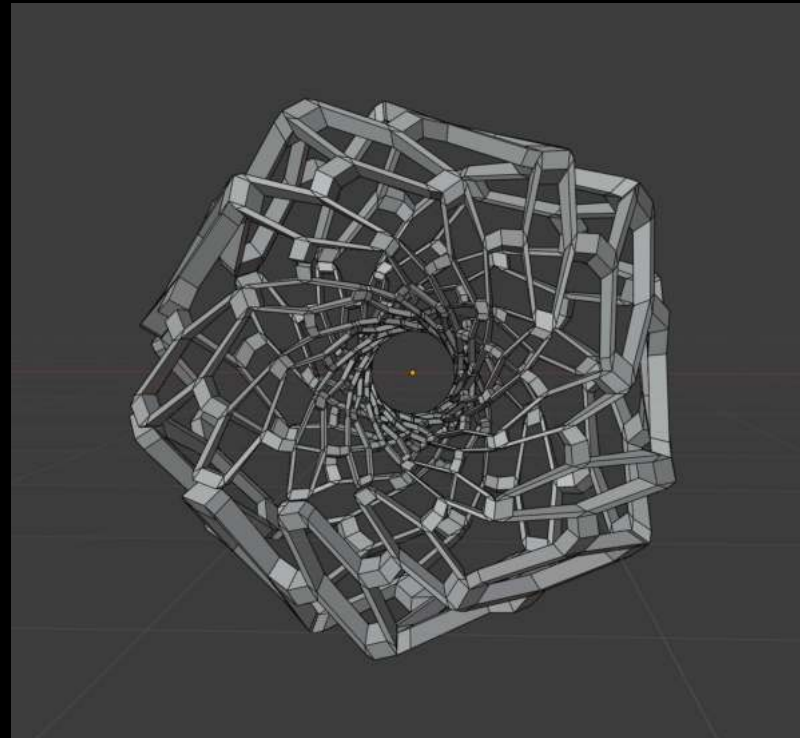
Tessellations



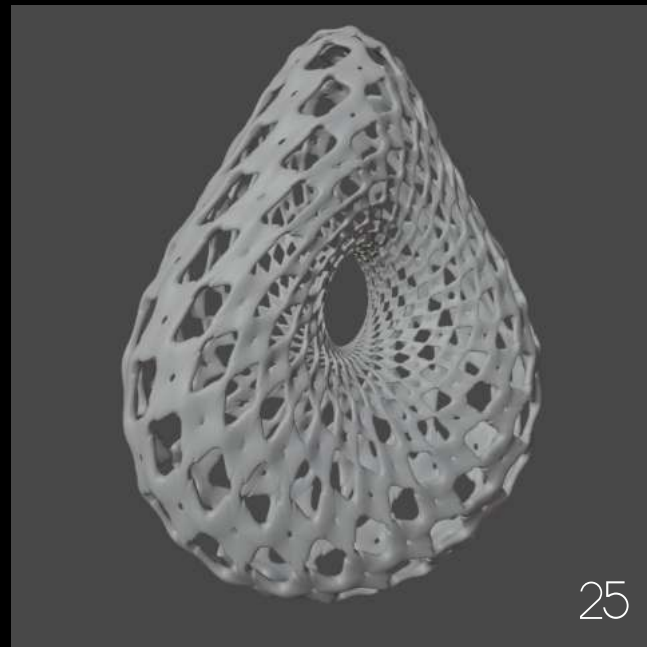
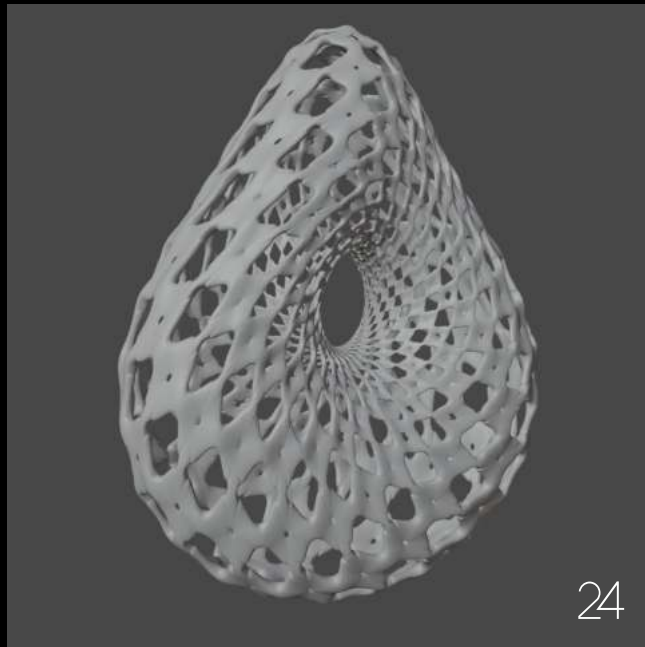
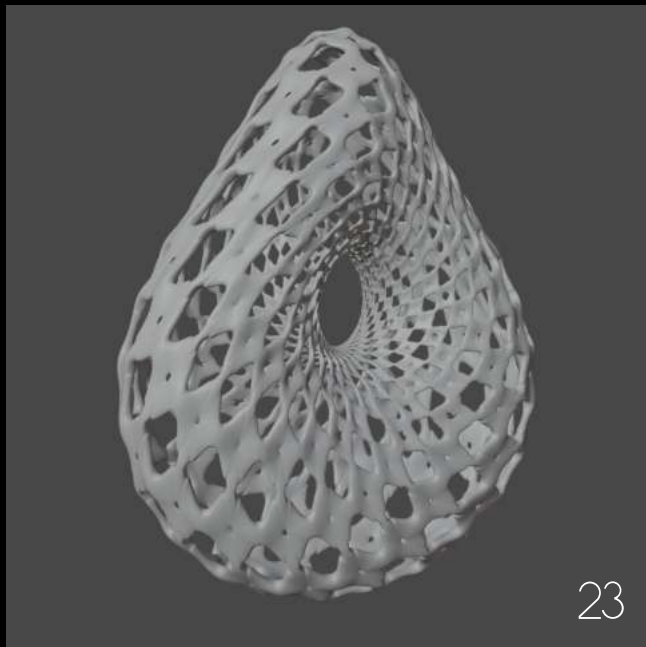
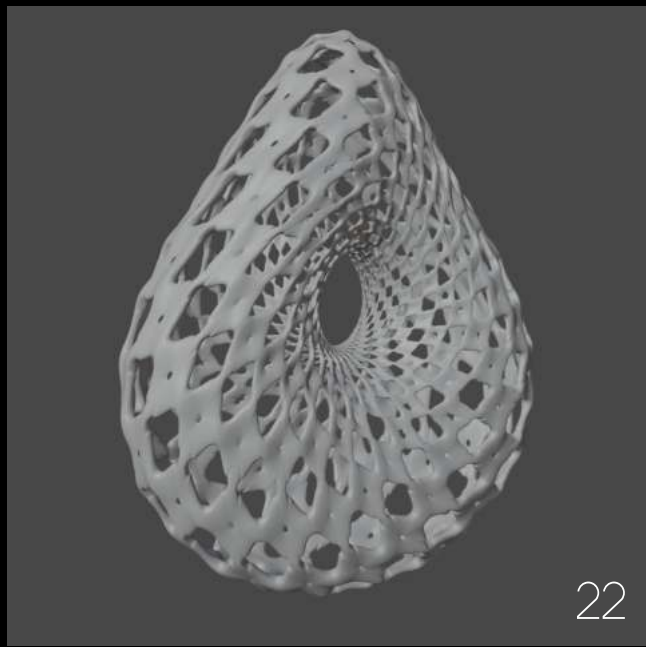
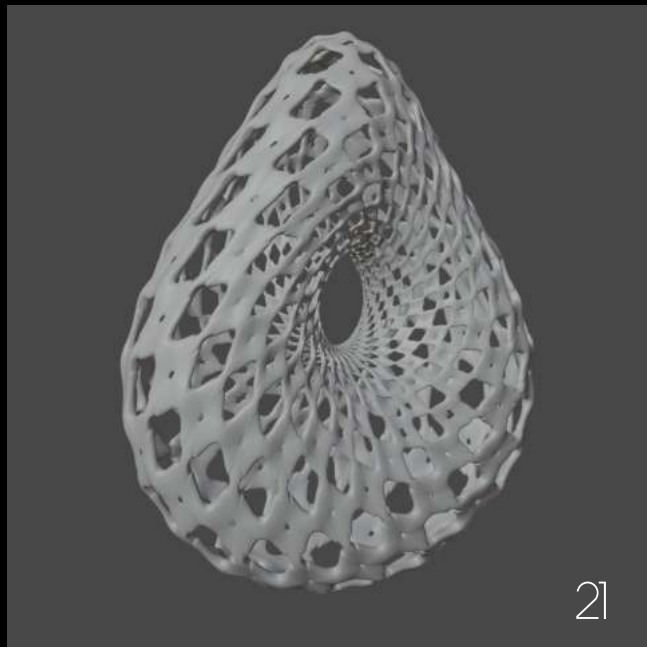
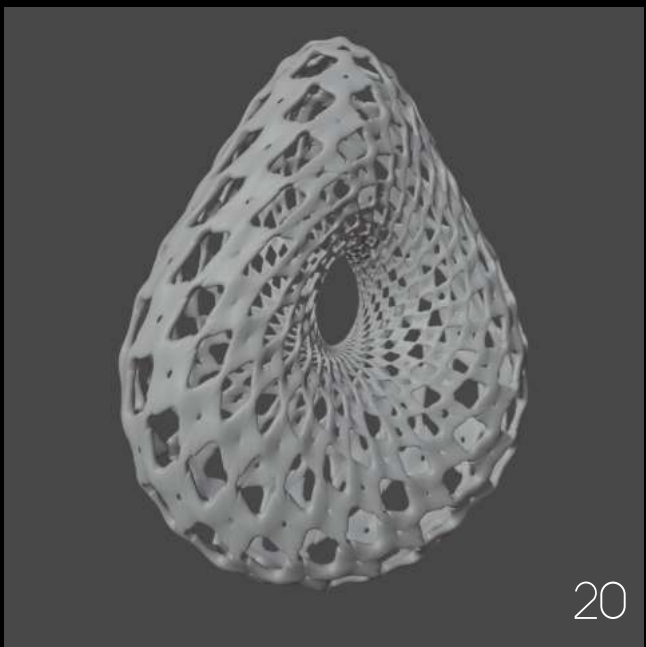
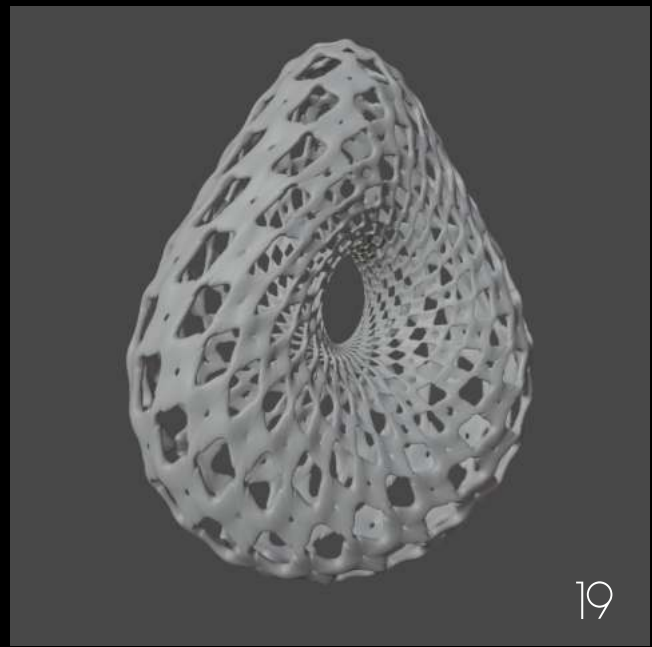
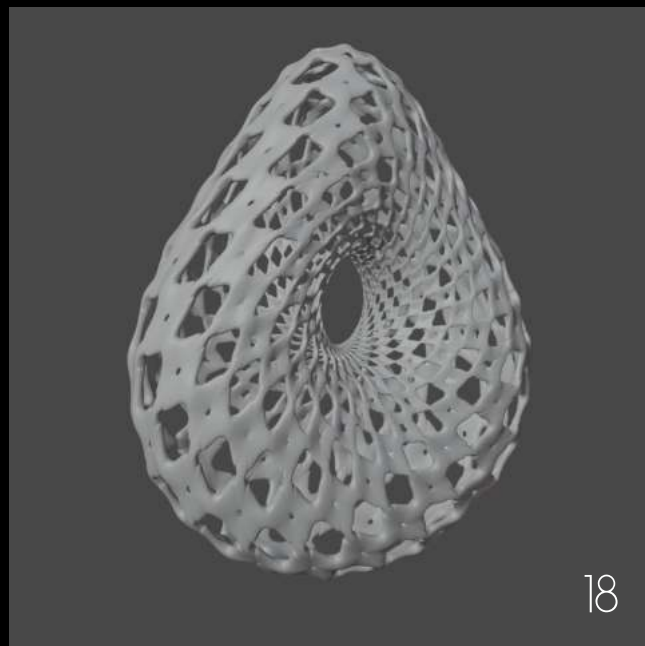
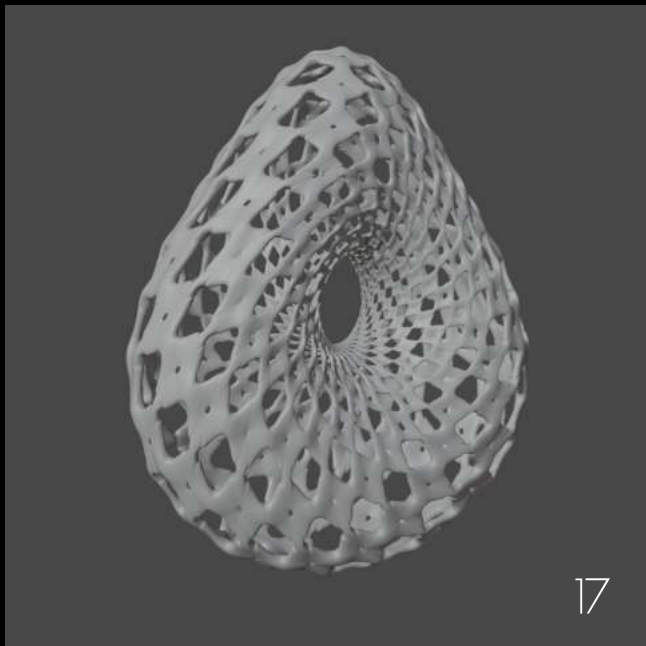
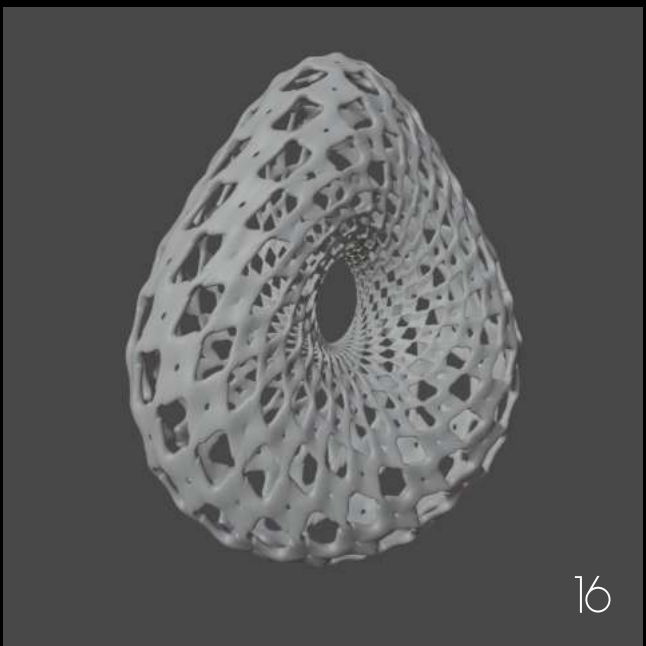
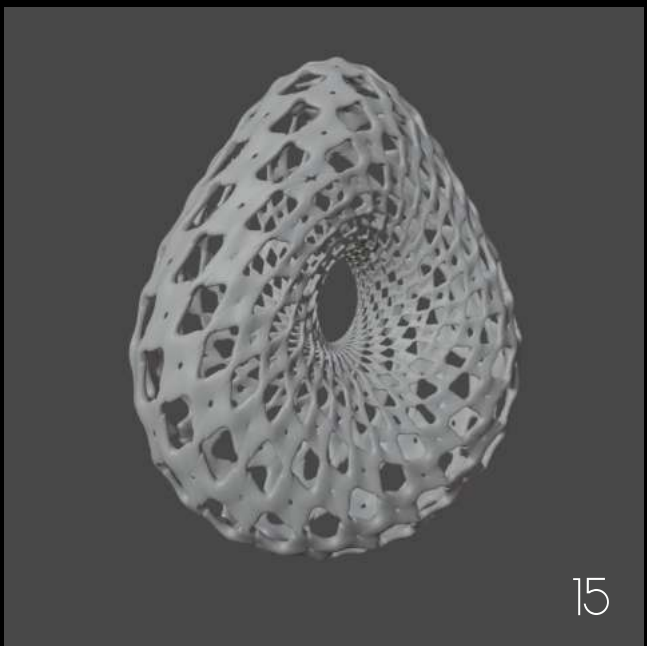
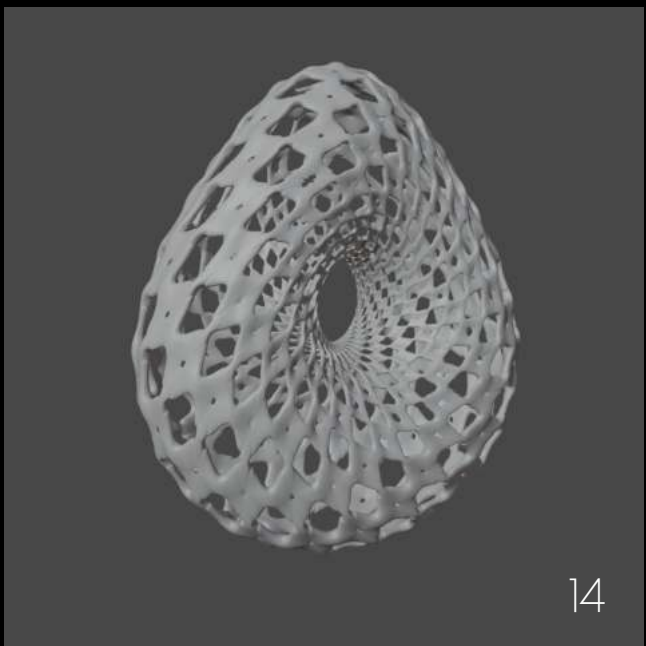
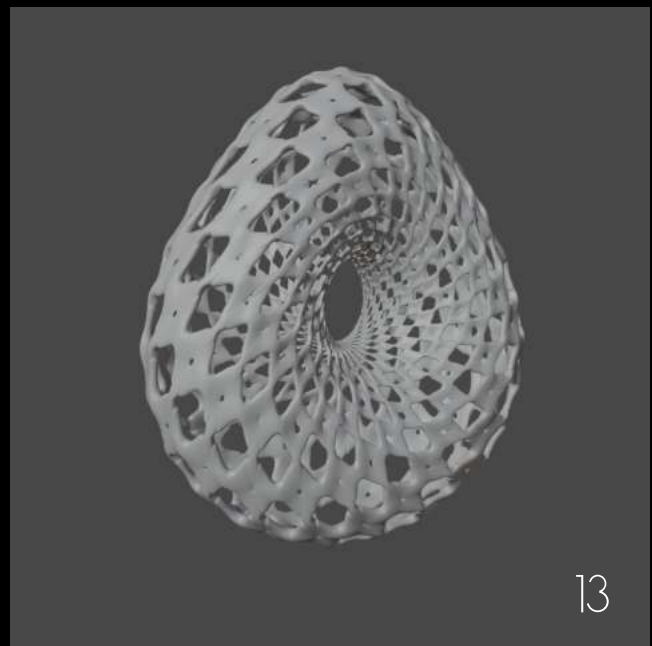
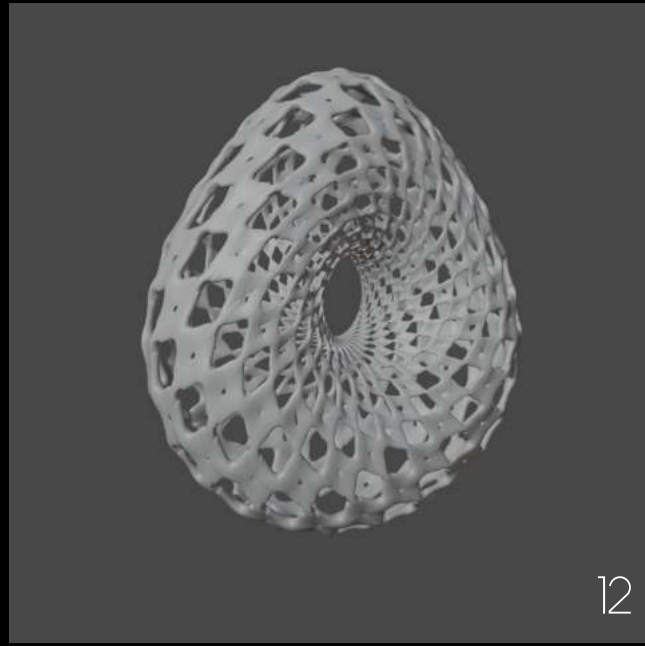
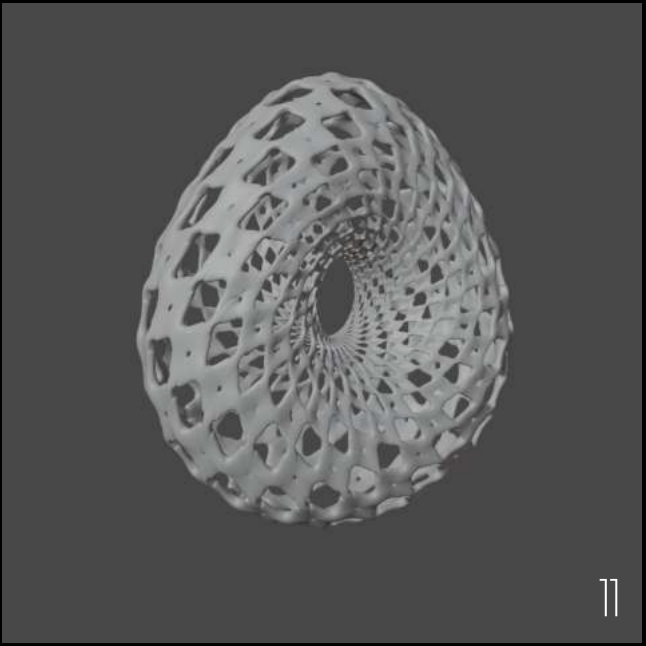
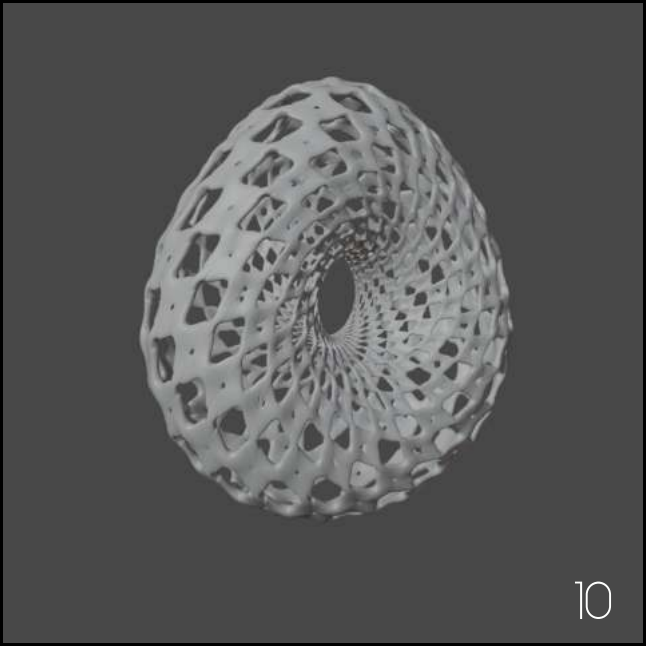
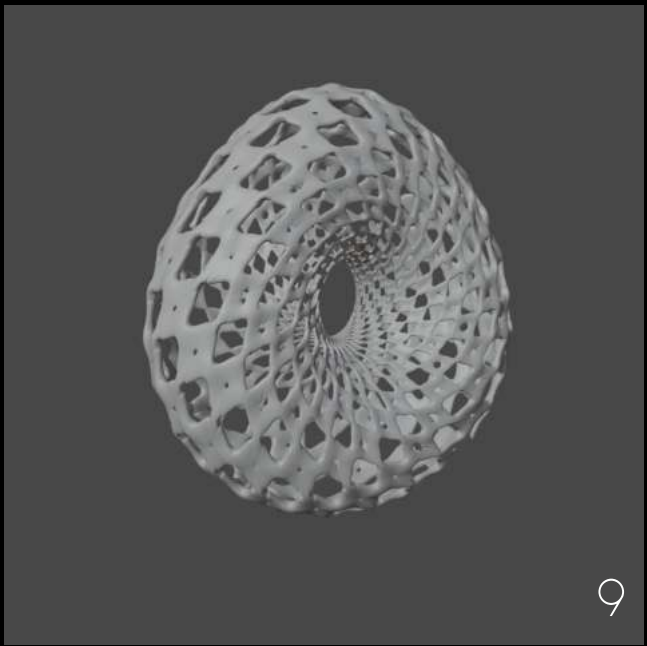
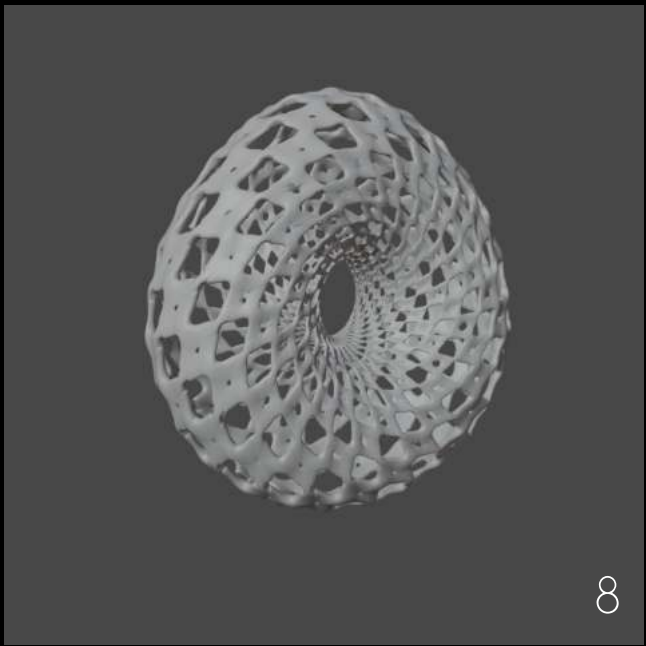
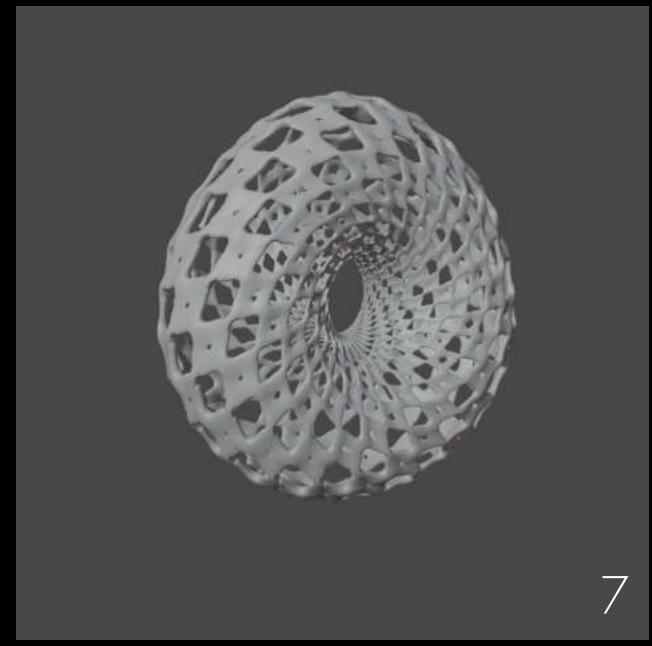
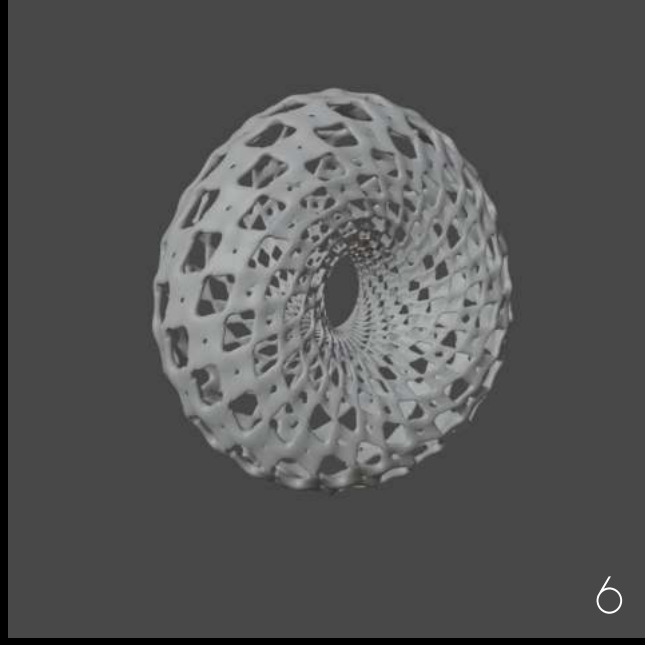
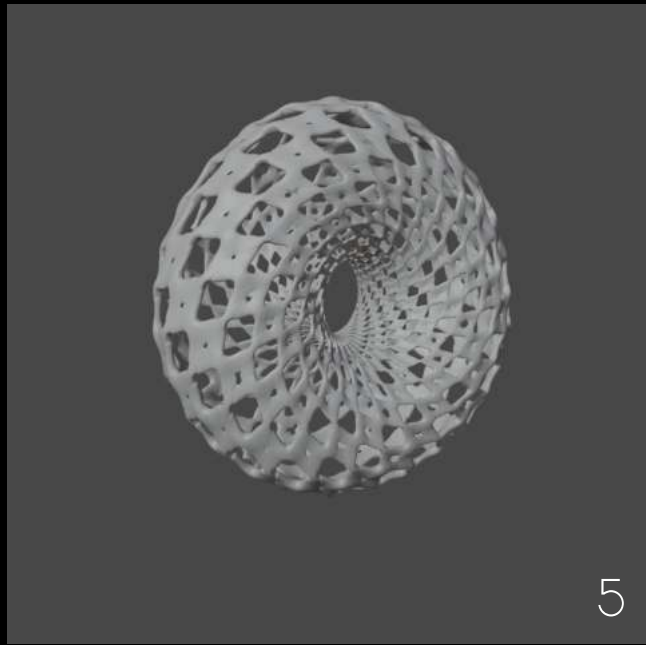
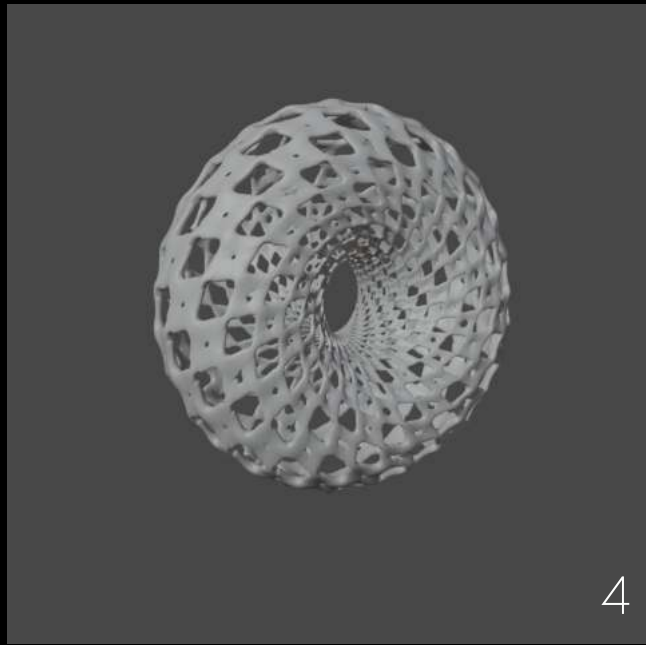
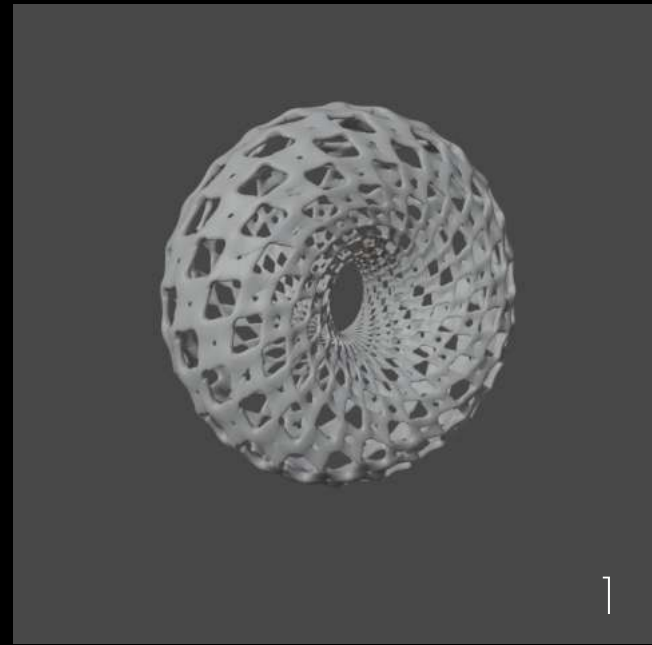
I tried different tessellation modes on the inorganic shapes. The quad mode gave me very symmetric shapes which looked good. However, some of the pieces were not connected properly. The quad mode also looked extremely rigid.



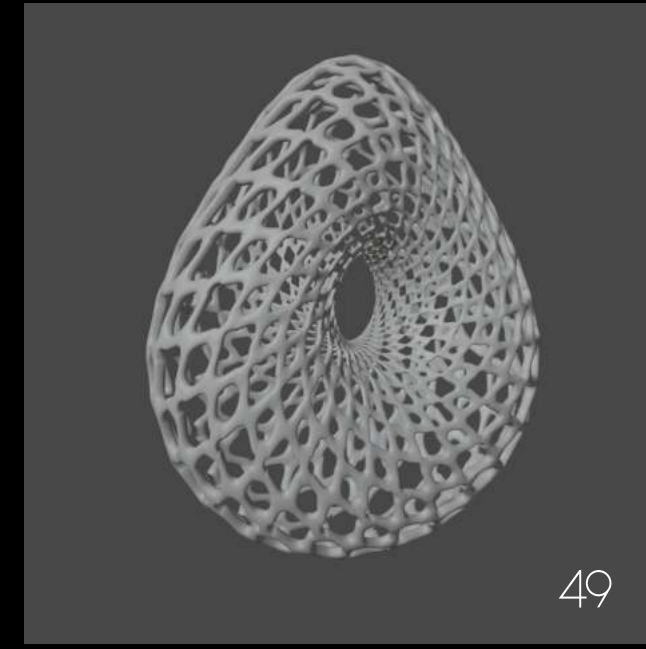
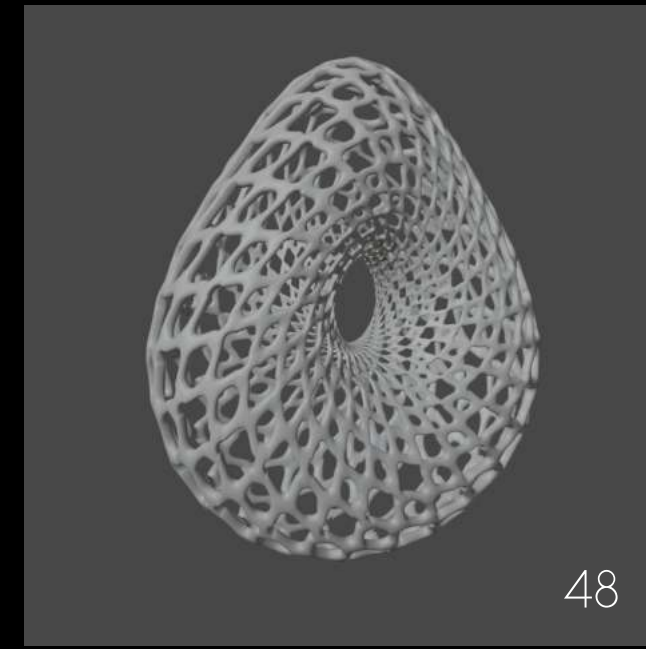
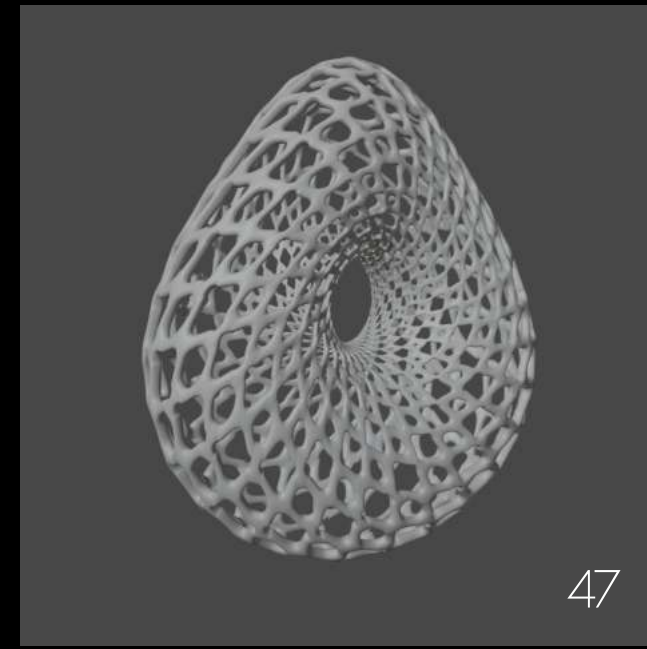
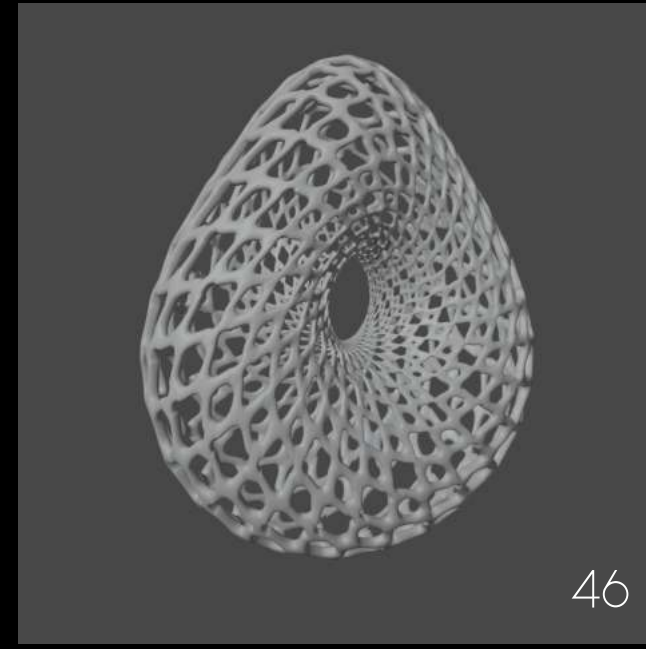
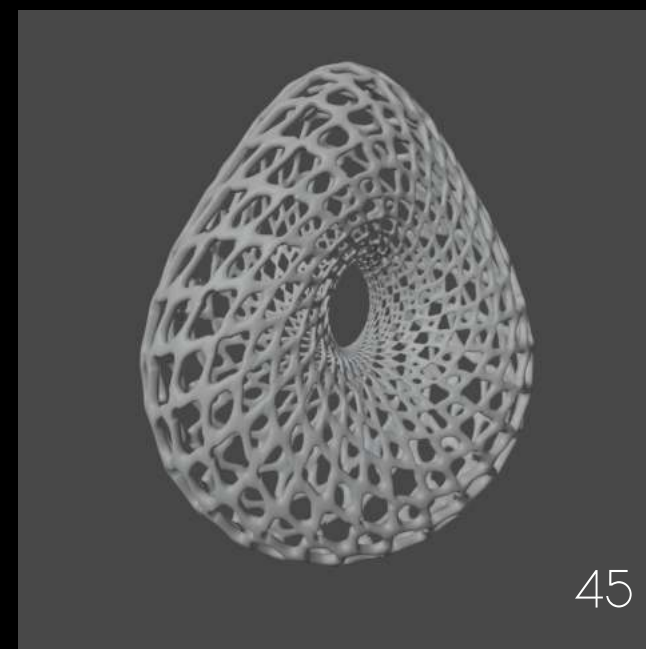
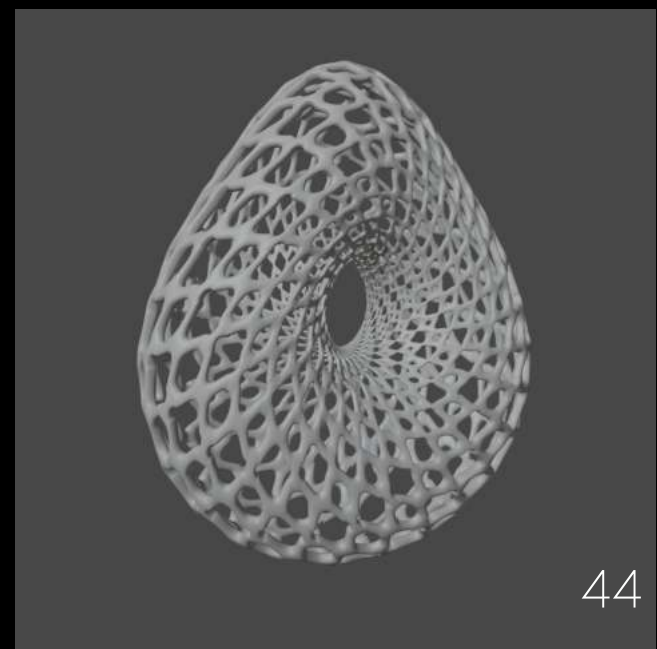
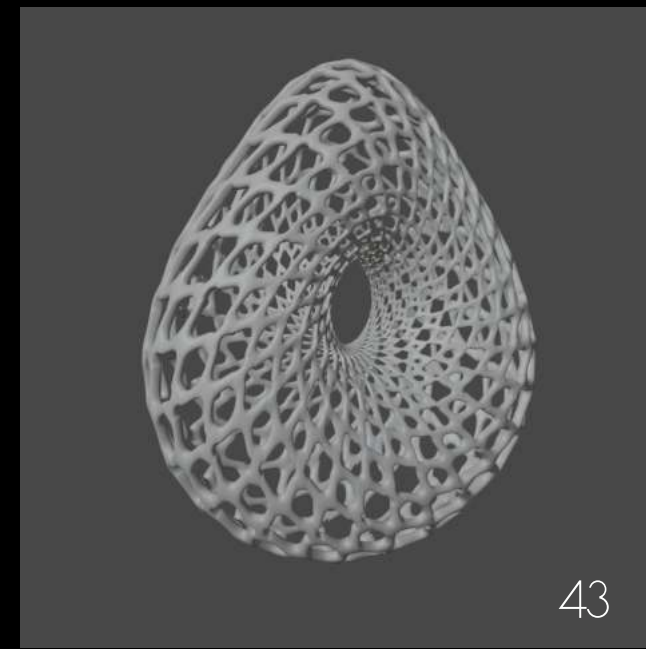
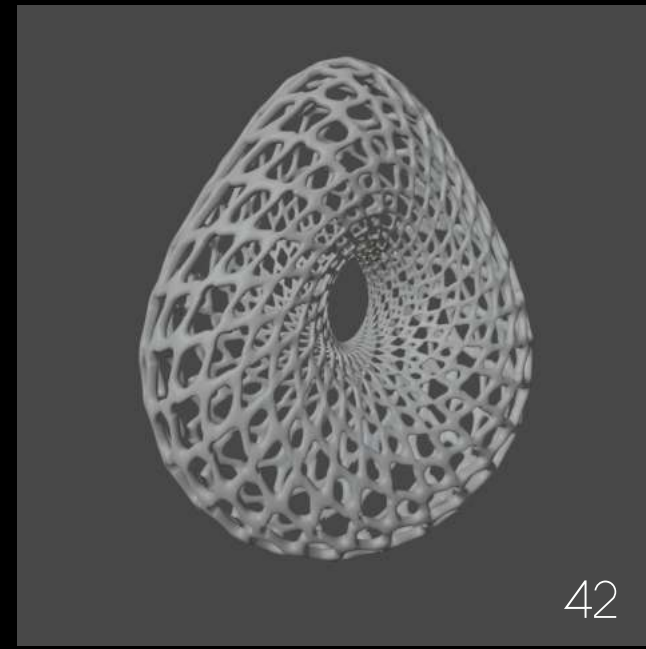
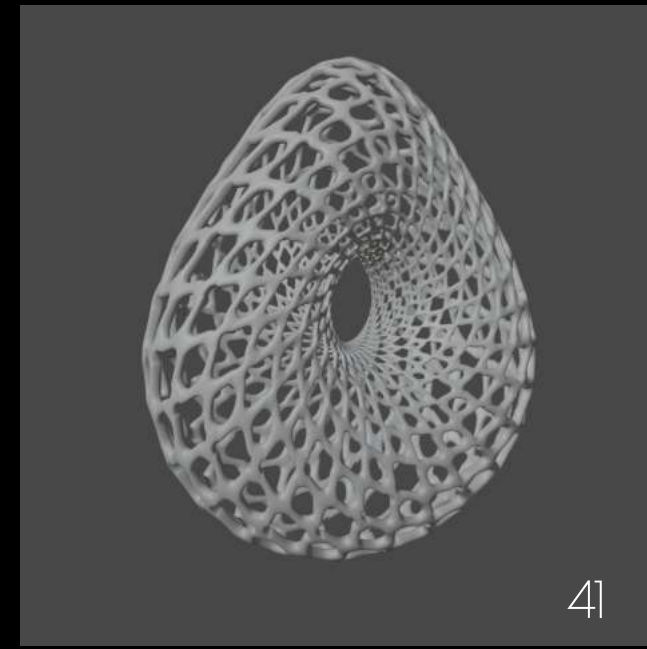
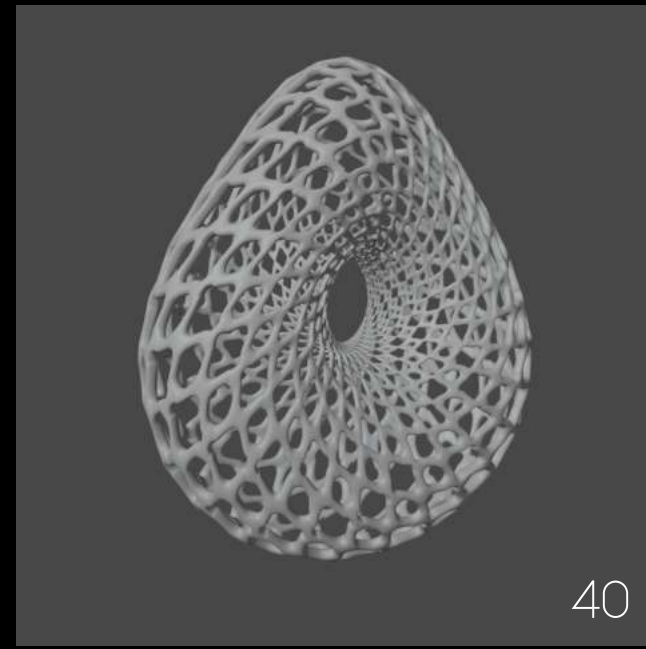
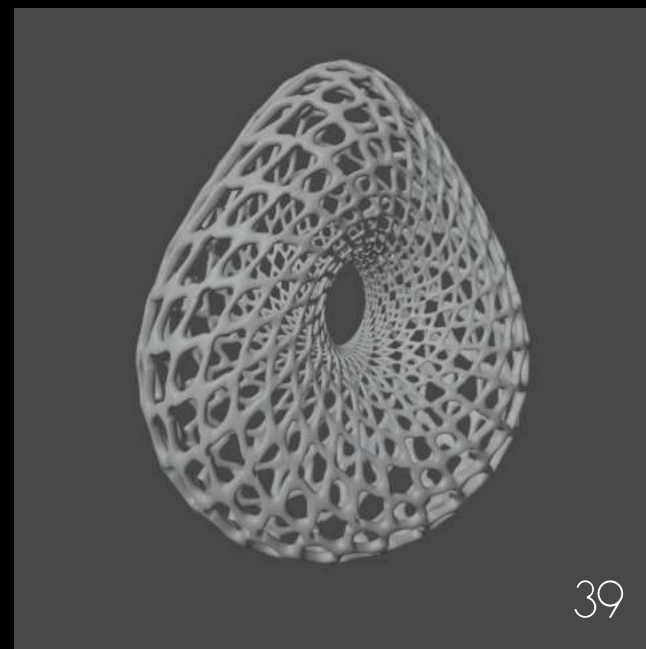
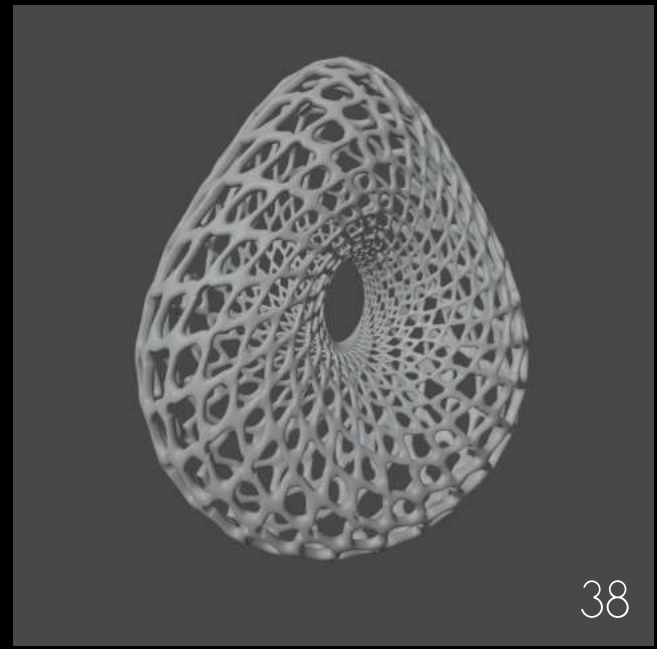
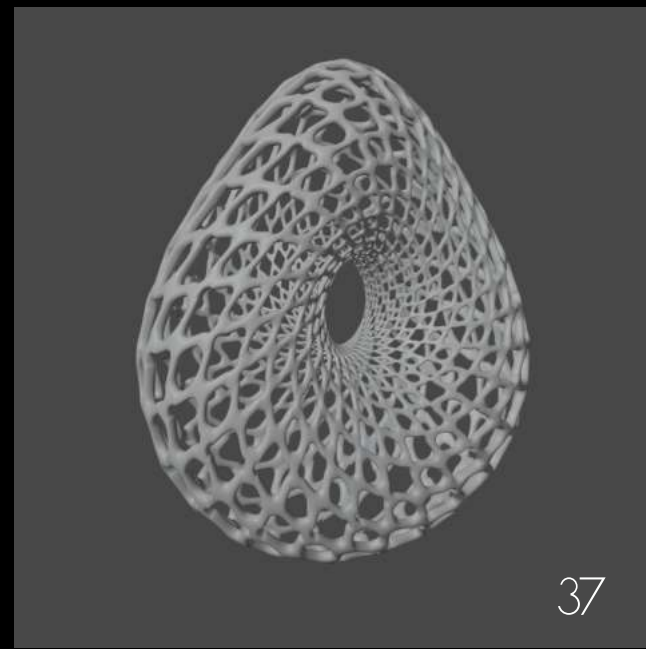
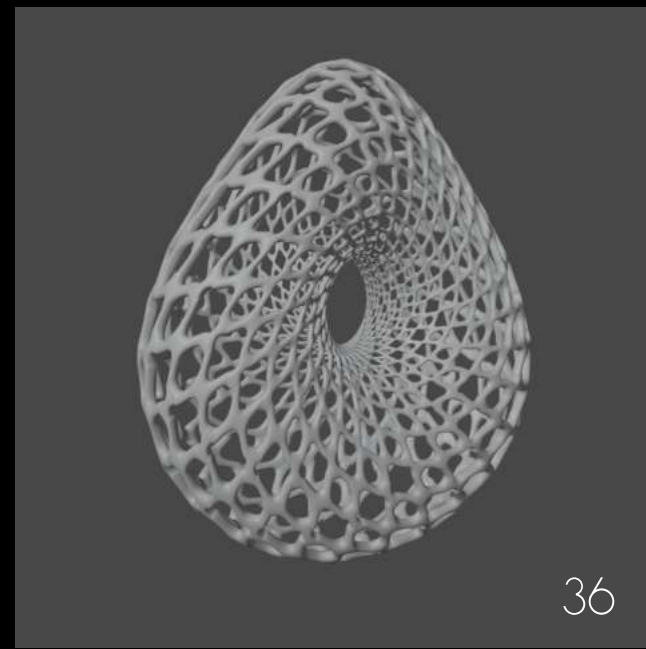
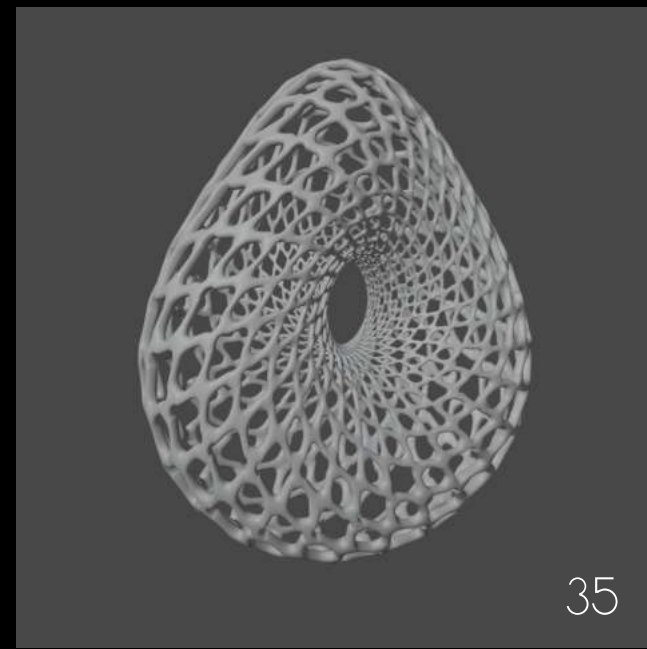
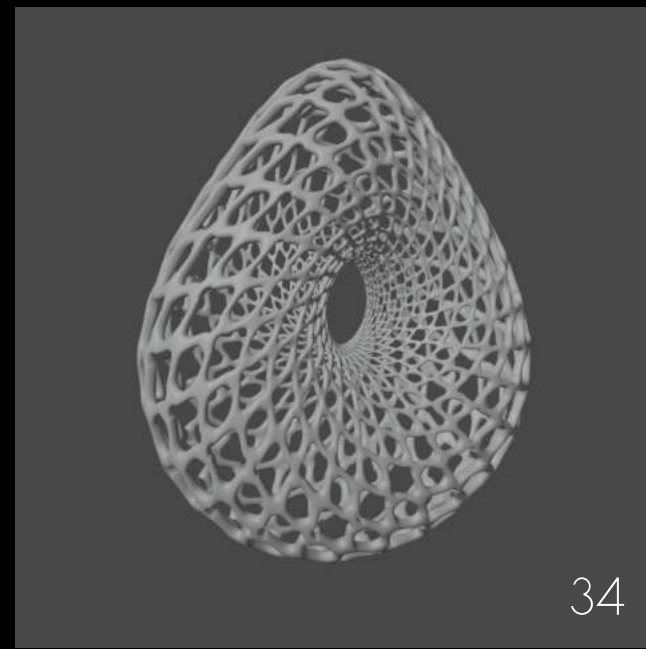
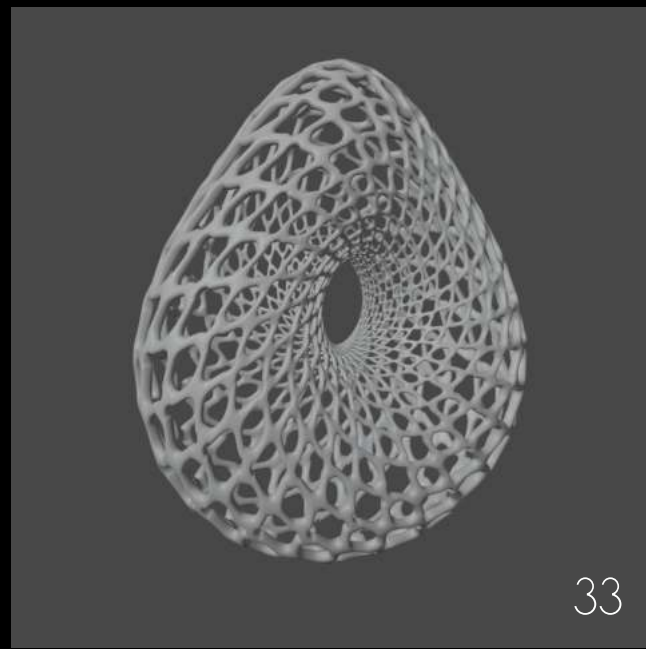
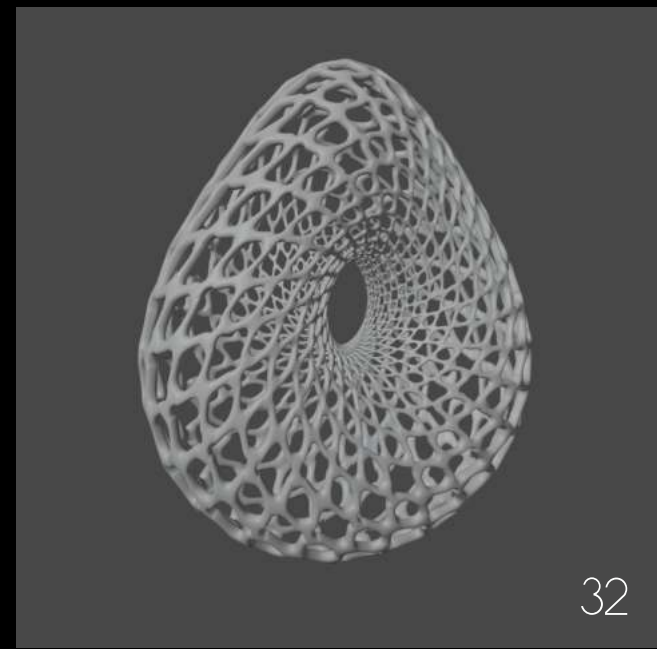
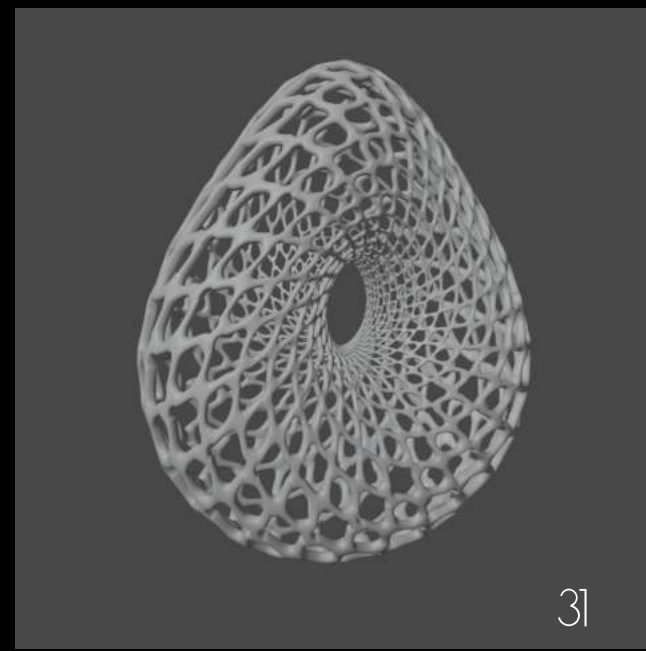
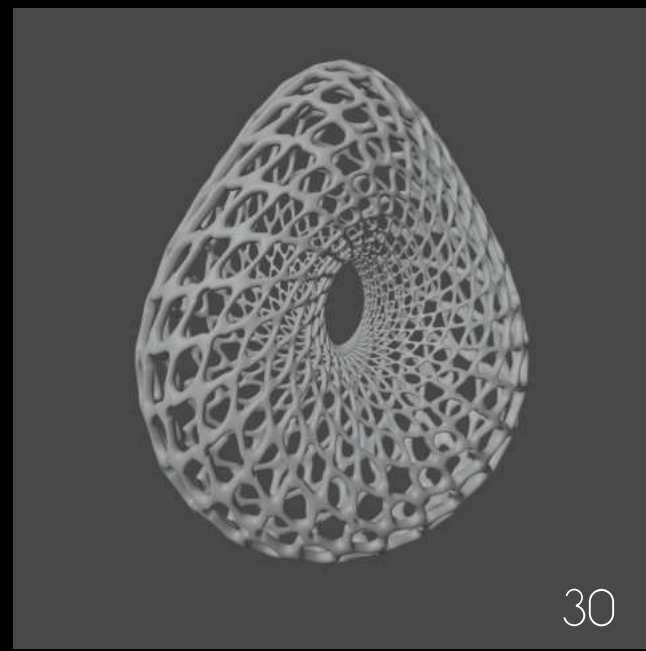
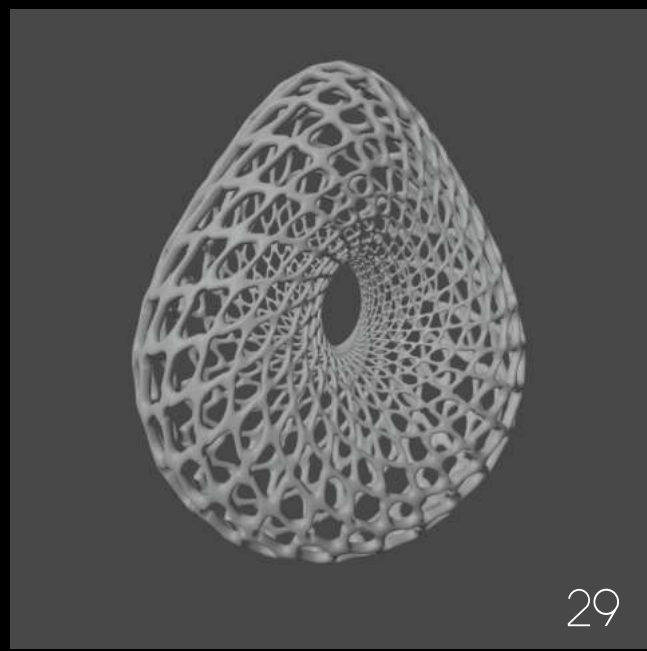
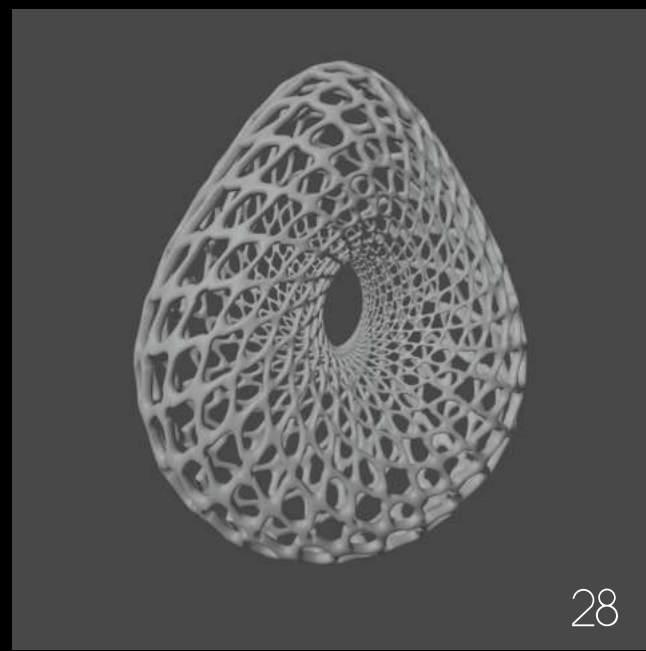
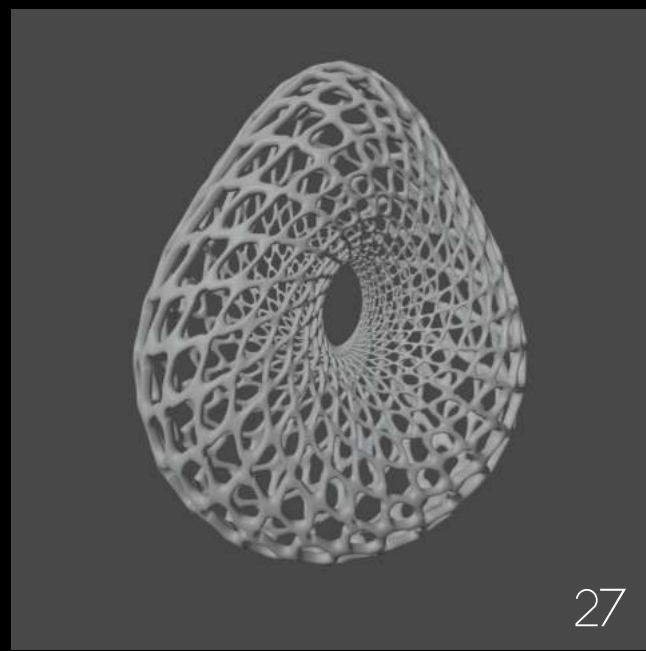
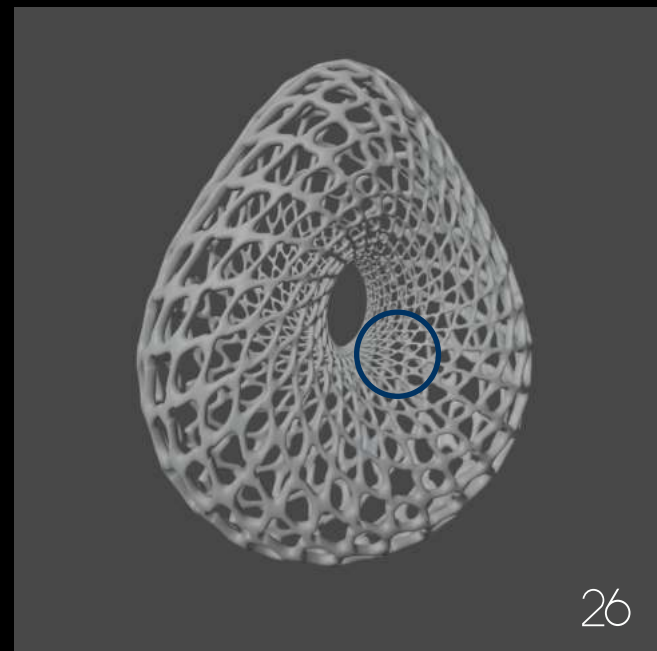
Then I used the patch mode, which allowed me to add modifiers to the main mesh. I got better results on the tessellations, but I was not totally convinced with the base mesh. I ended up discarding the inorganic shapes.



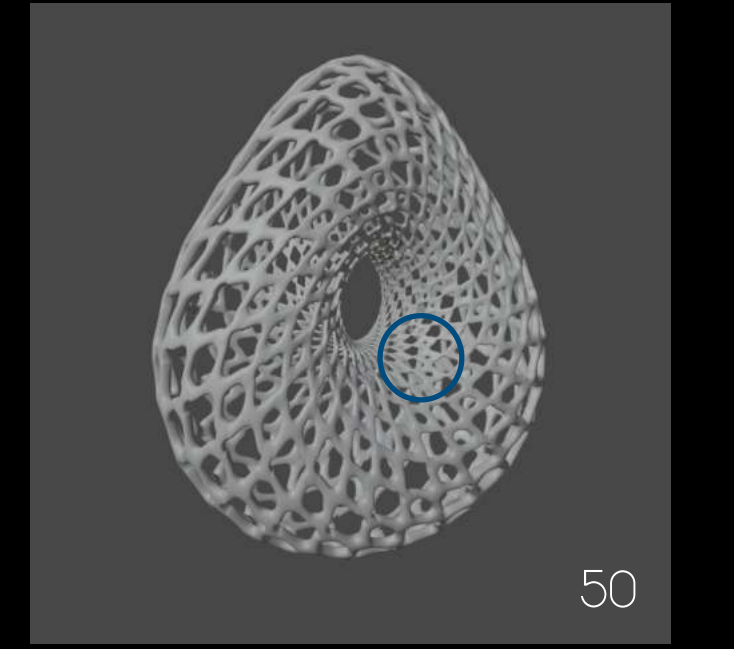
Trying tessellations with the patch mode created more interesting results. I started applying modifiers to different meshes to see some variations. After I applied one tessellation to the bottom object, I got with the pattern that I wanted to achieved. I just had to tweak the base mesh and thicken the tessellation with a solidify modifier. It was time to make the 100 iterations.

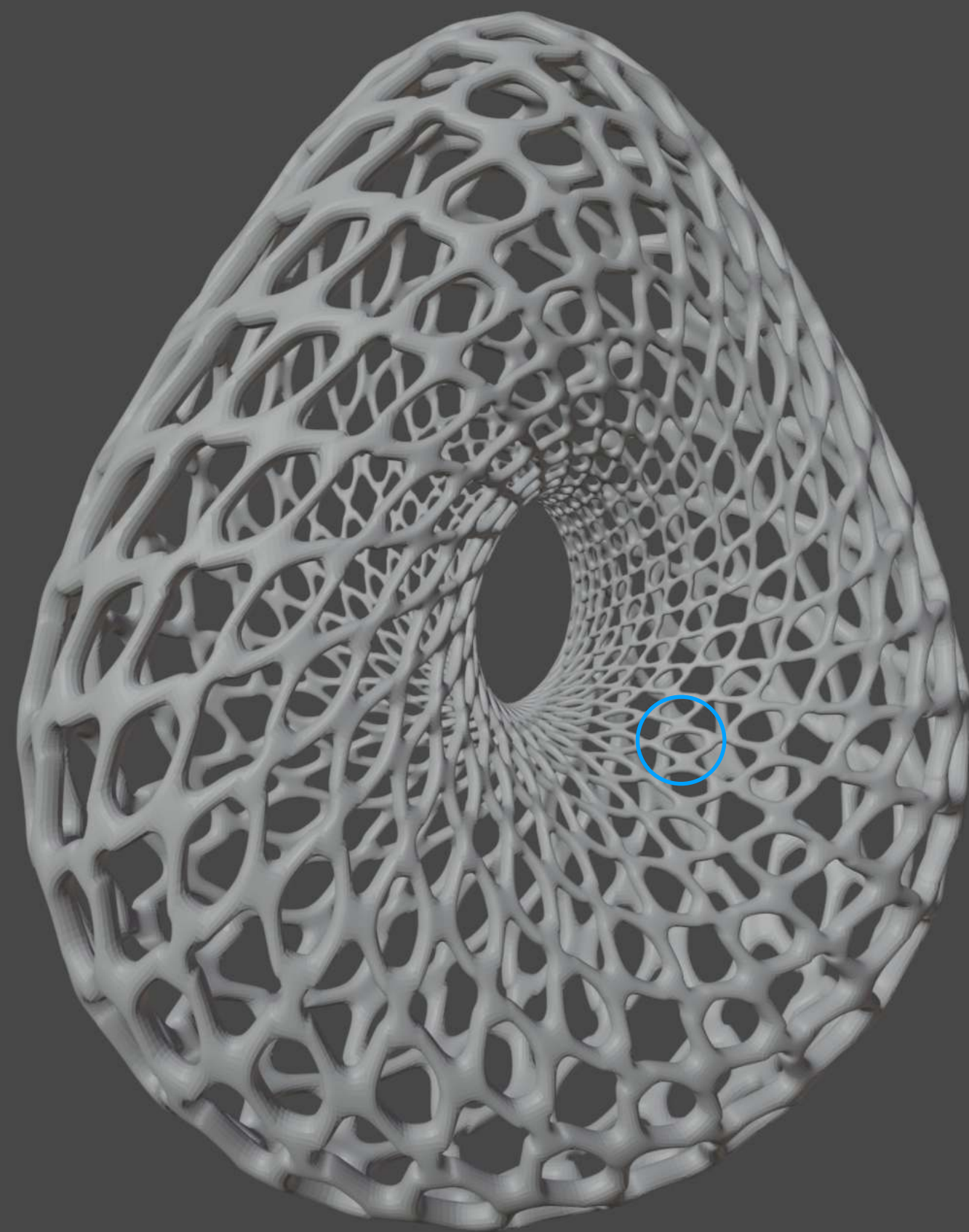


This first set of iterations play around with the initial shape of the pendant. It starts with a perfectly rounded torus and it finishes in a shape that stretches the initial torus in a triangular shape. The last iterations also twist the top angle around the vertical axis.

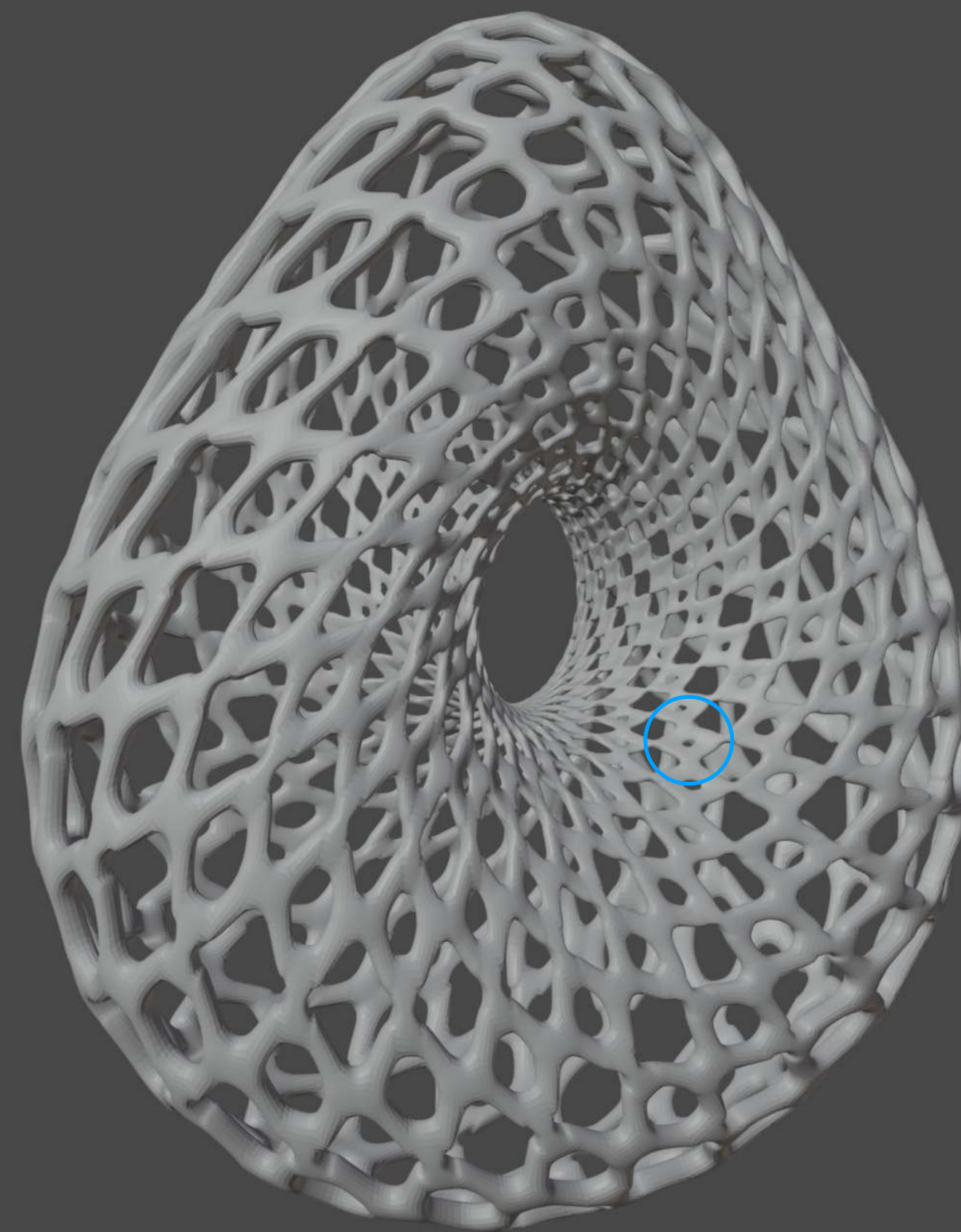


This second set of iterations explore the size of the holes on the inner part of the pendant. Iteration #26 starts with a uniform size of wholes. However, iteration #50 has smaller holes around the middle of the pendant.



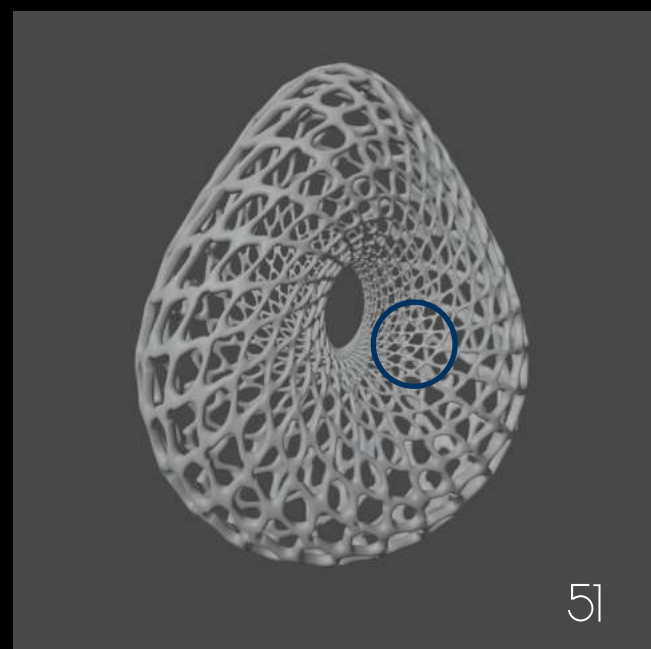


Iteration #26

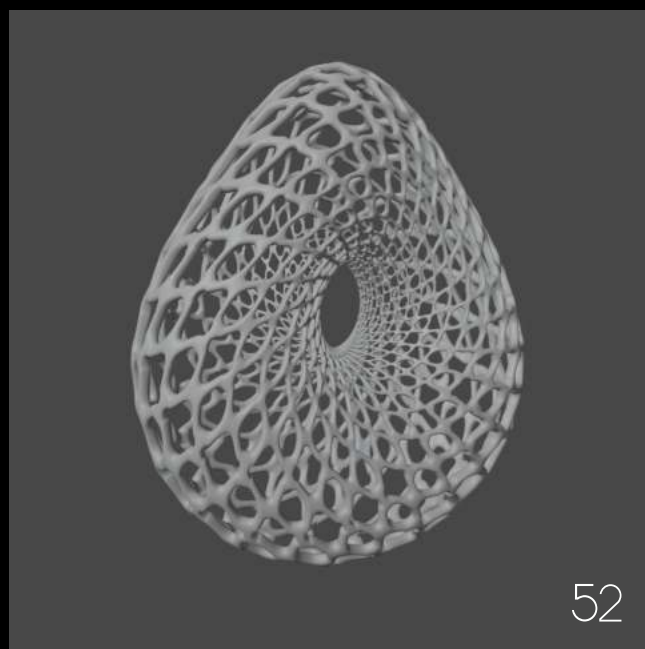


Iteration #50

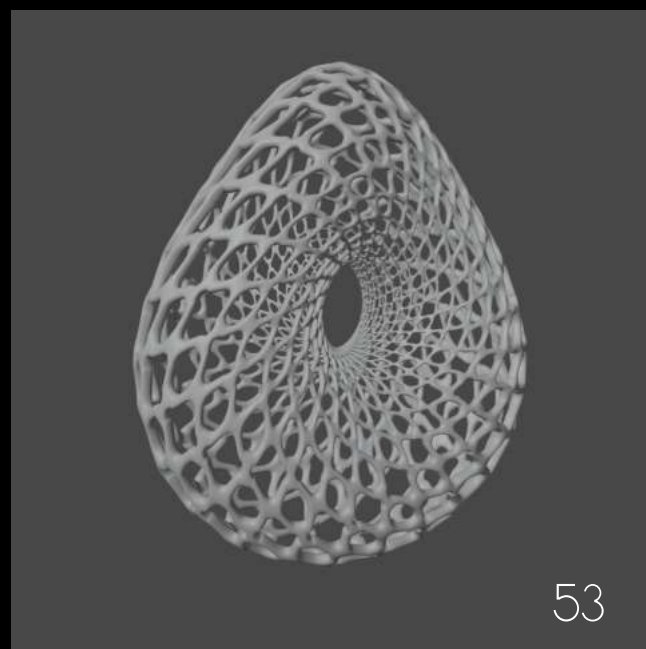
We can examine that holes reduce their size the closer they get to the centre of the pendant.



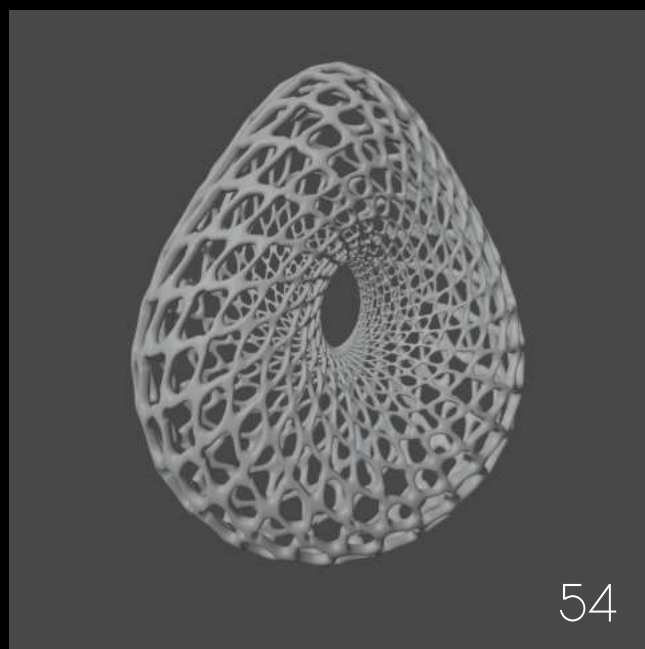
51



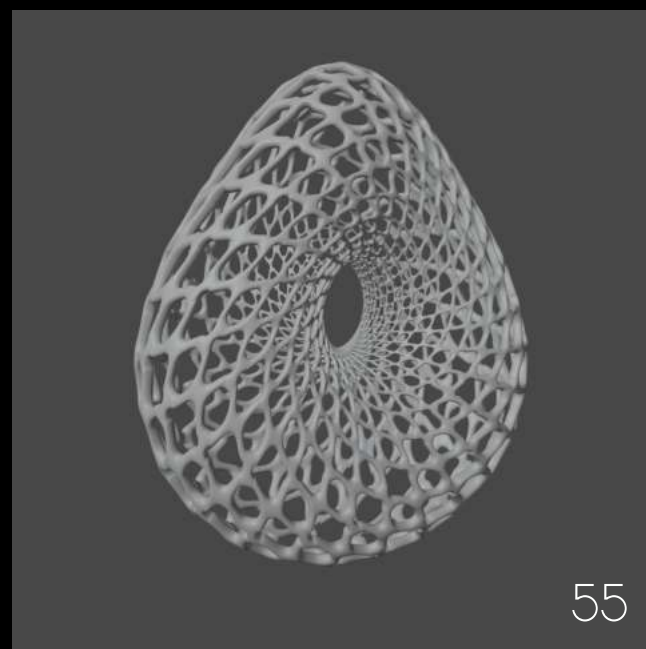
52



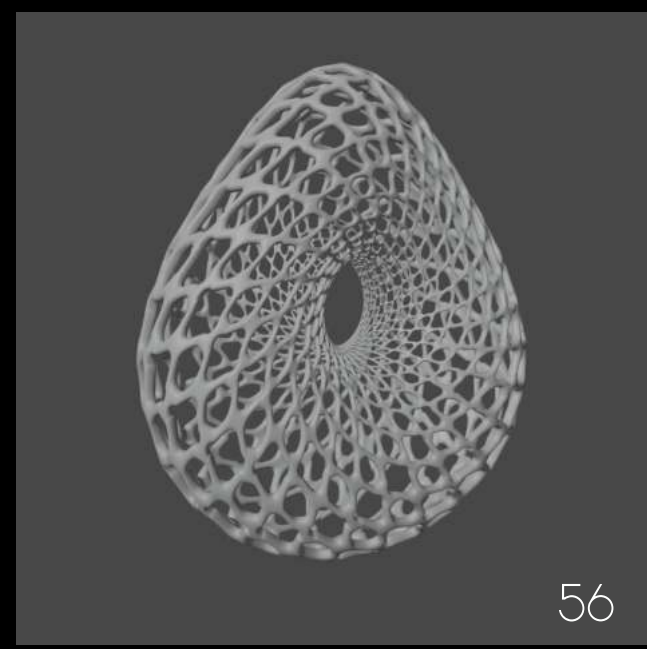
53



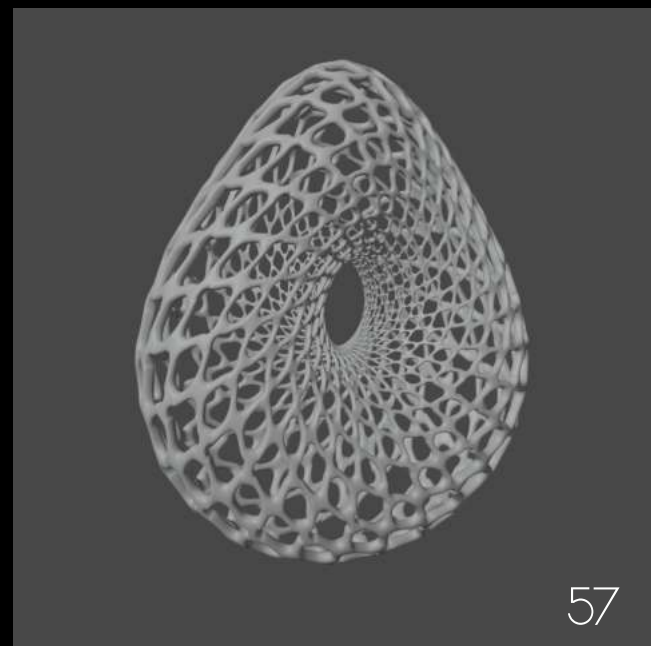
54



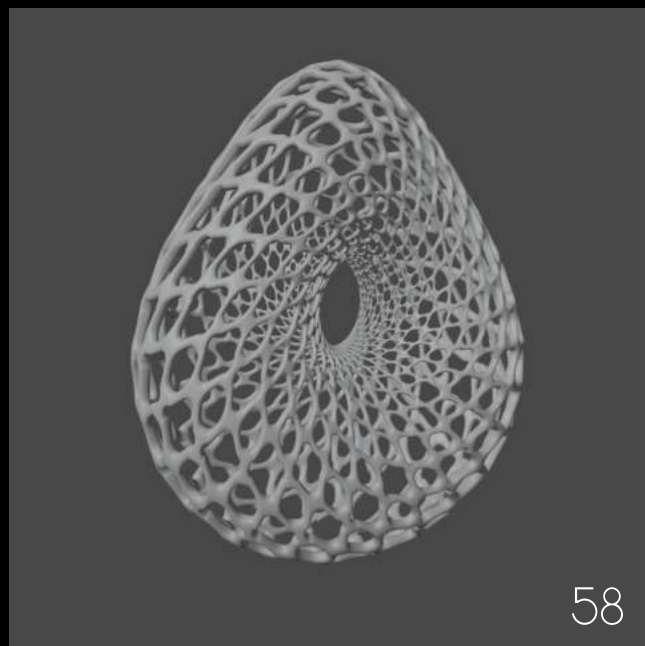
55



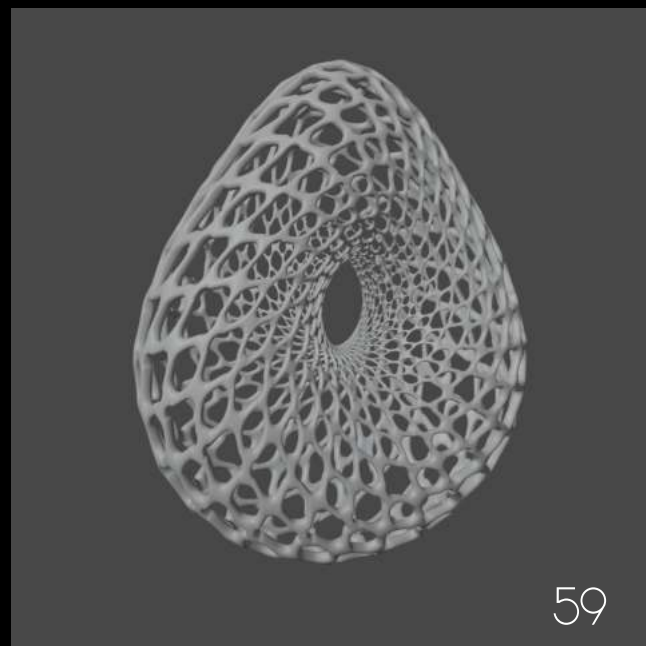
56



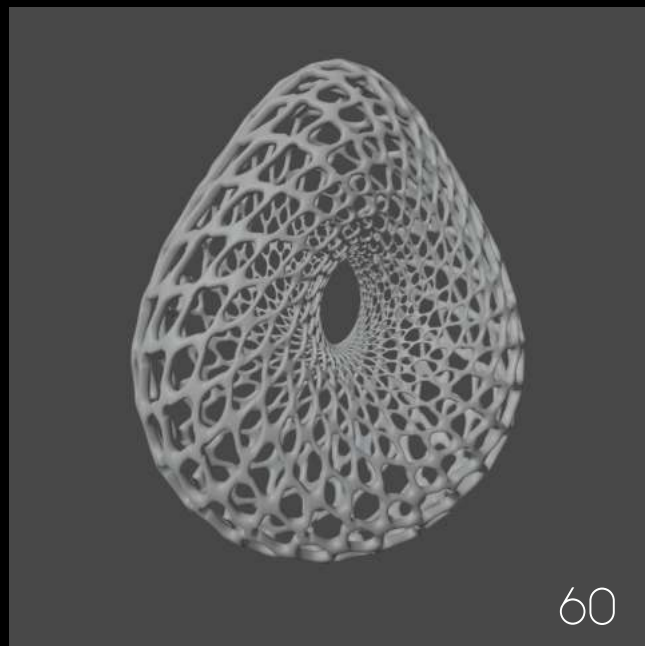
57



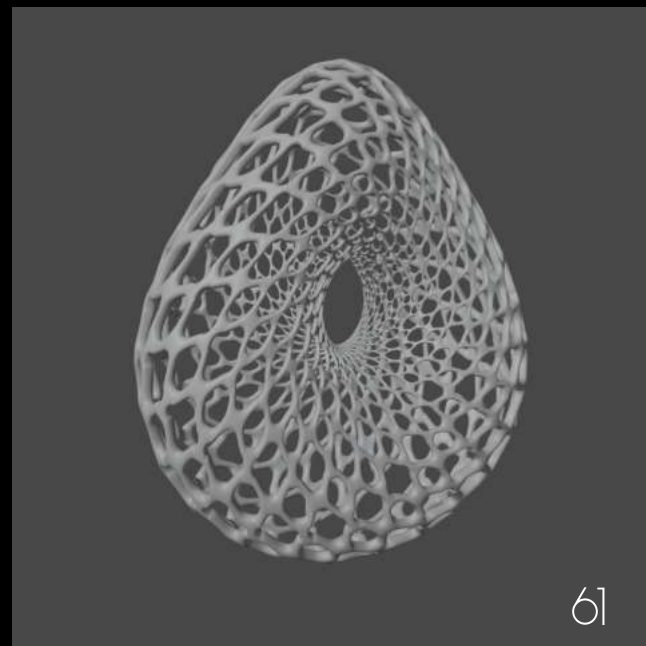
58



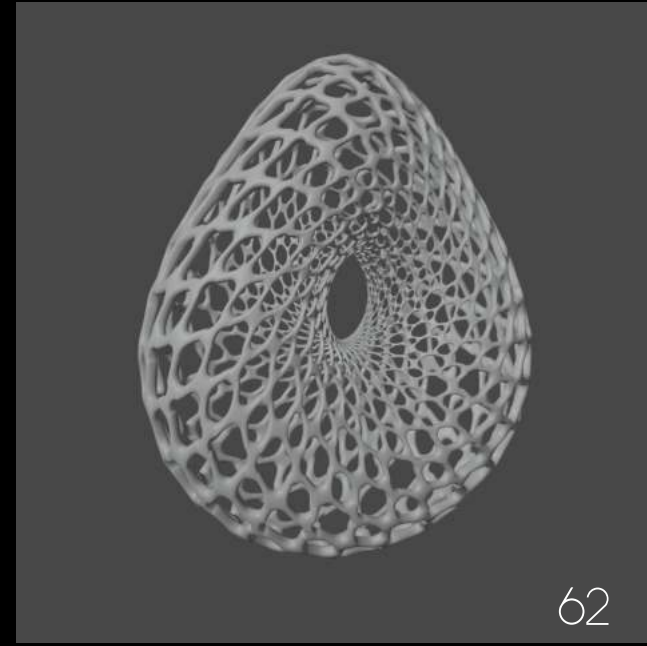
59



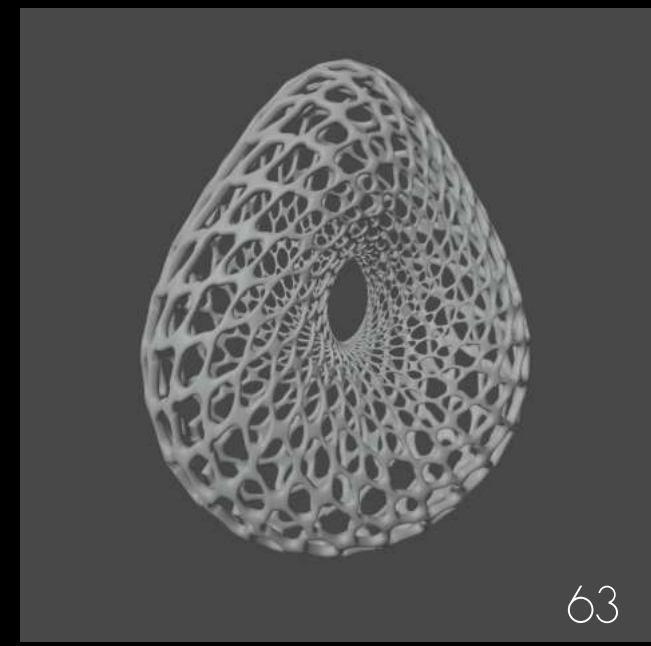
60



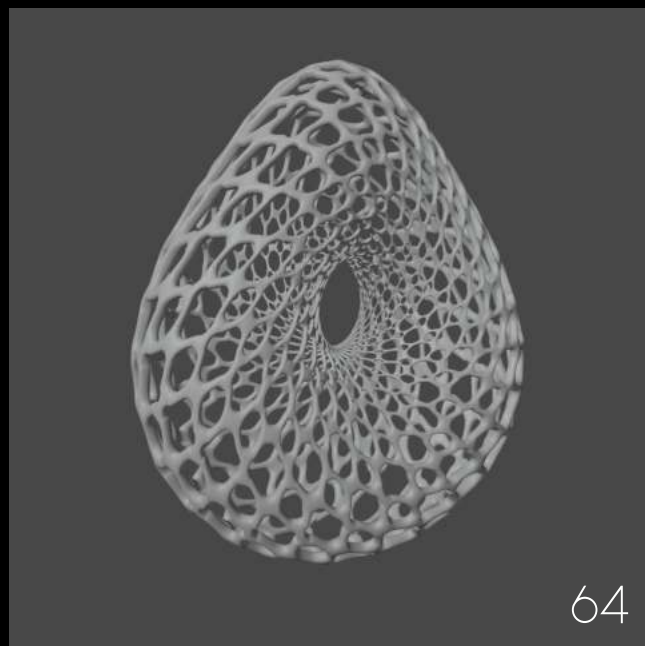
61



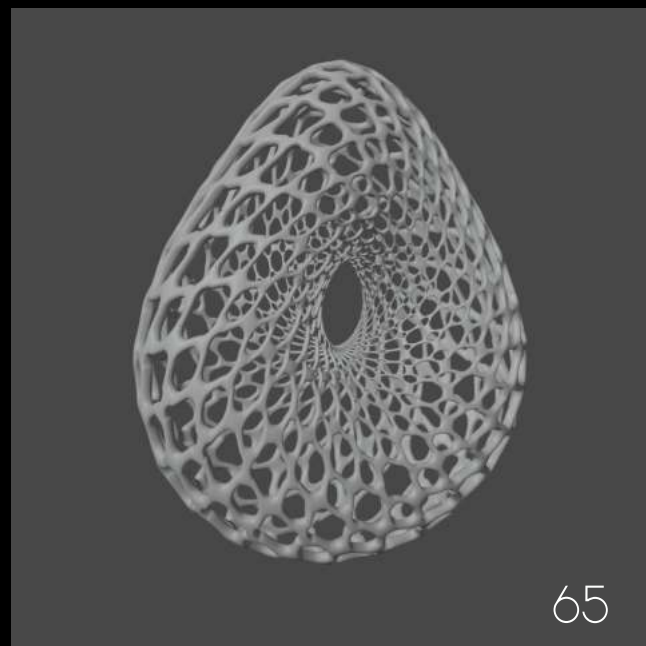
62



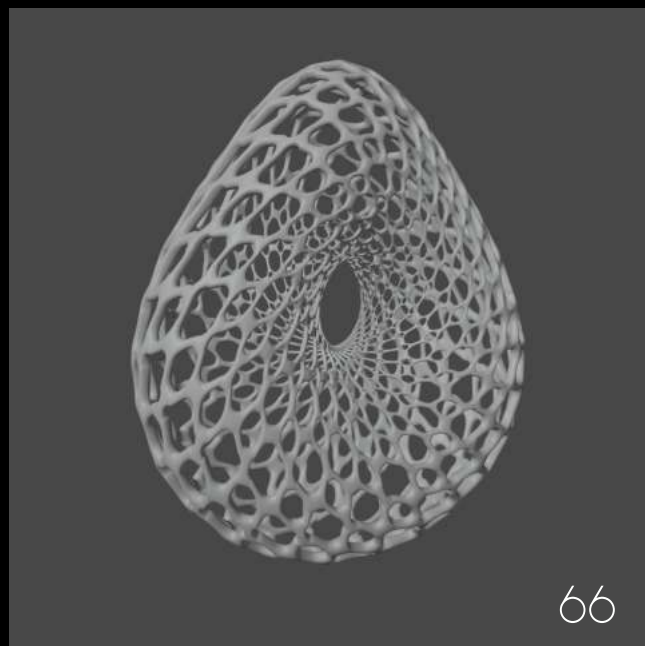
63



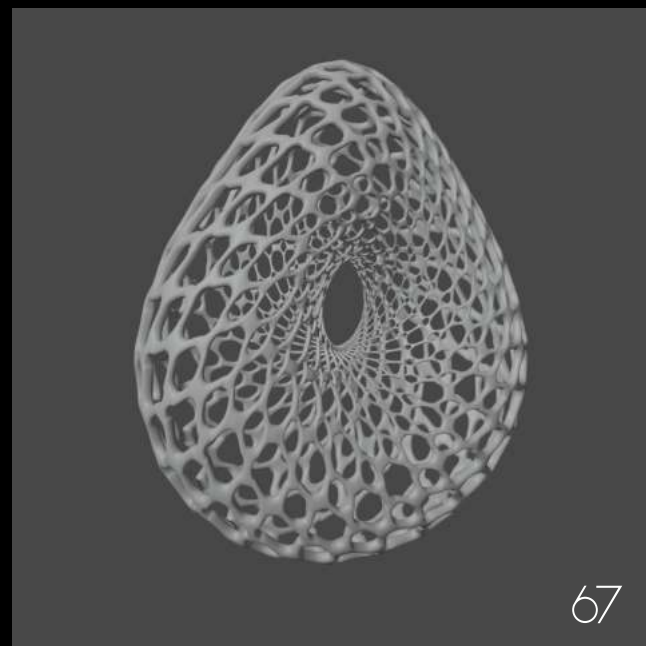
64



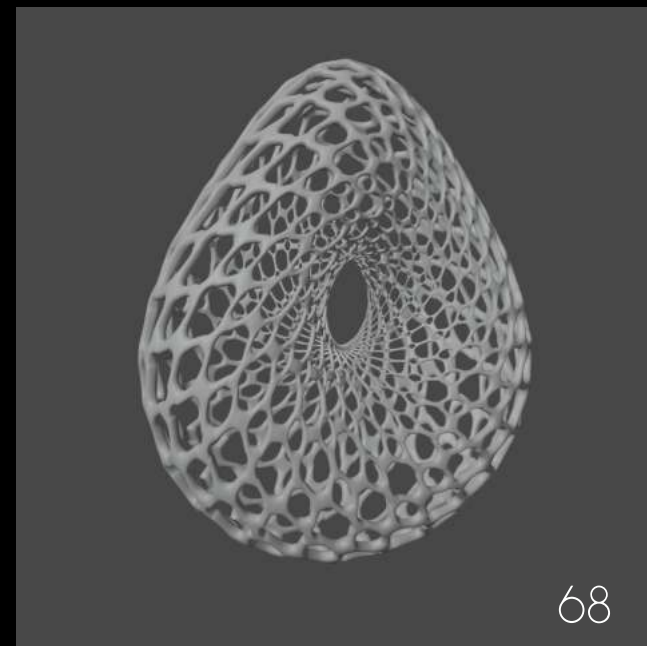
65



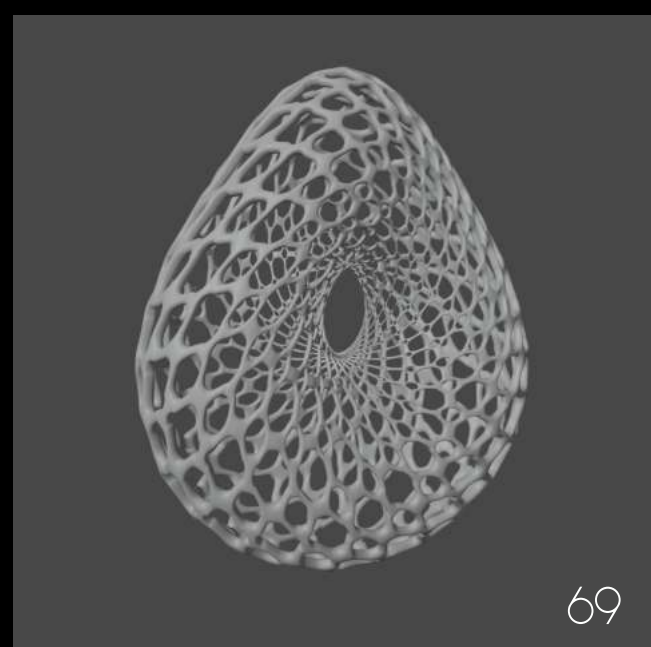
66



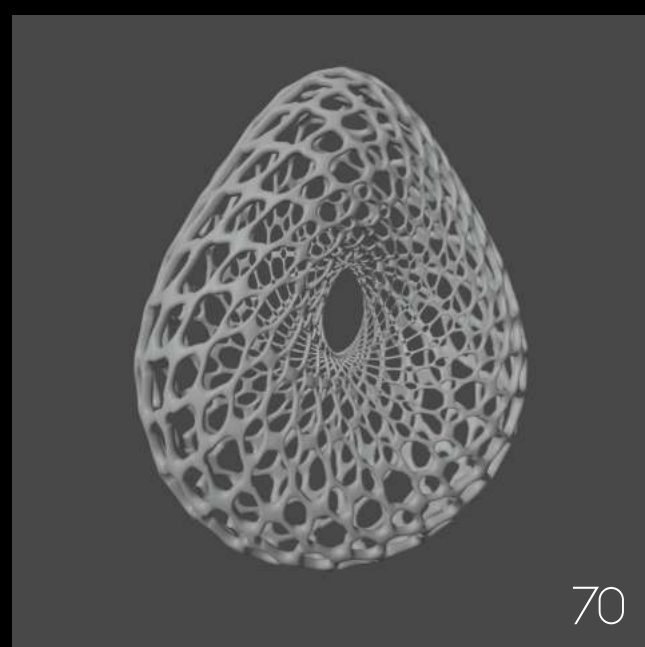
67



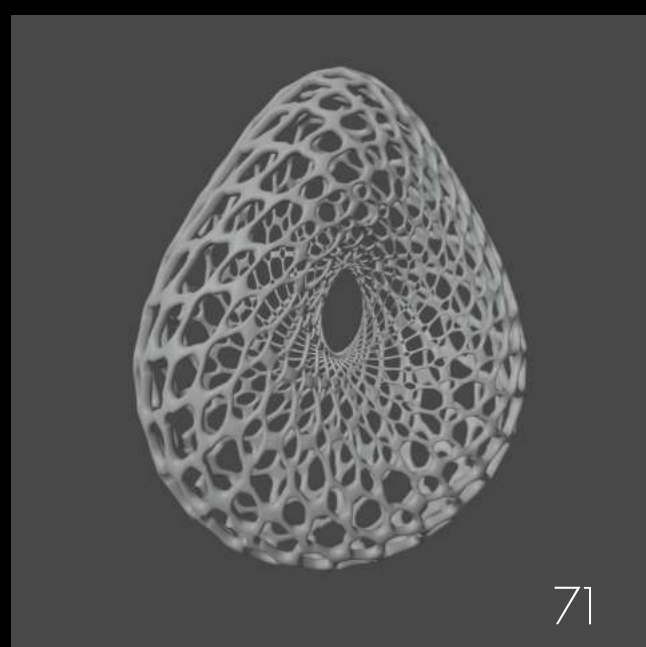
68



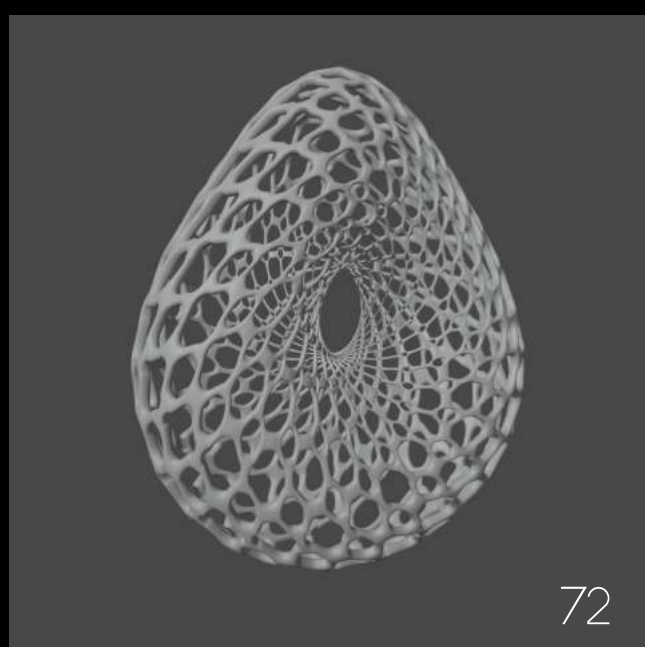
69



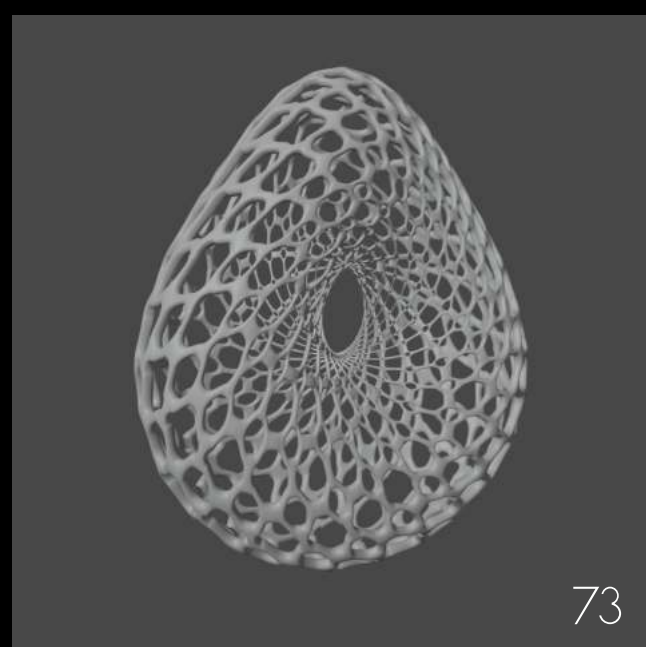
70



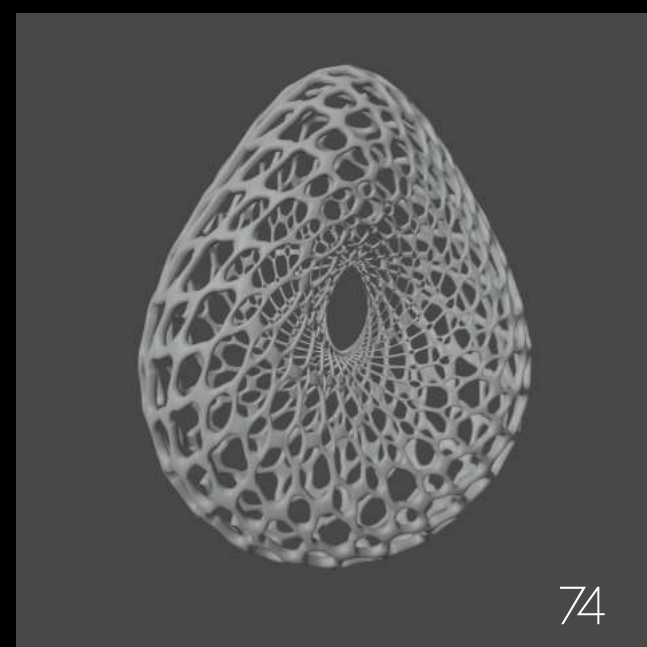
71



72

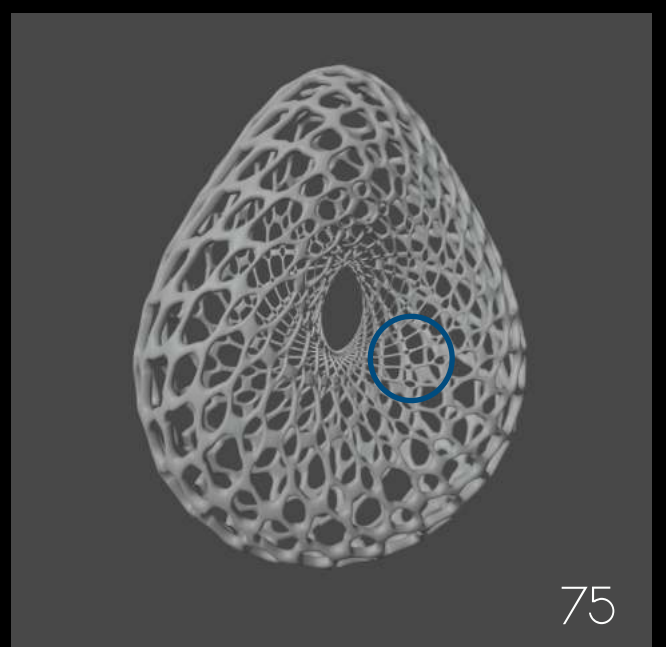


73

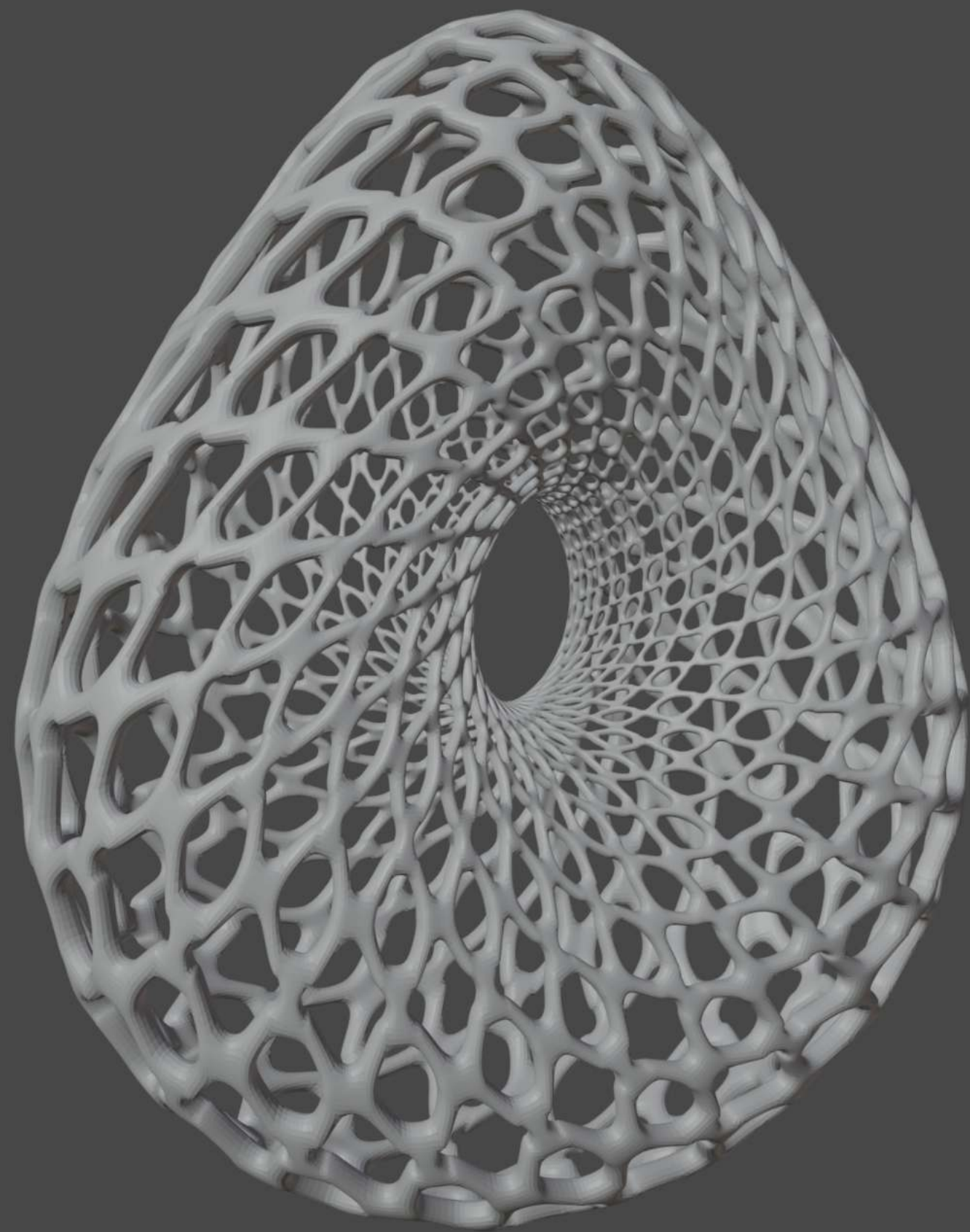


74

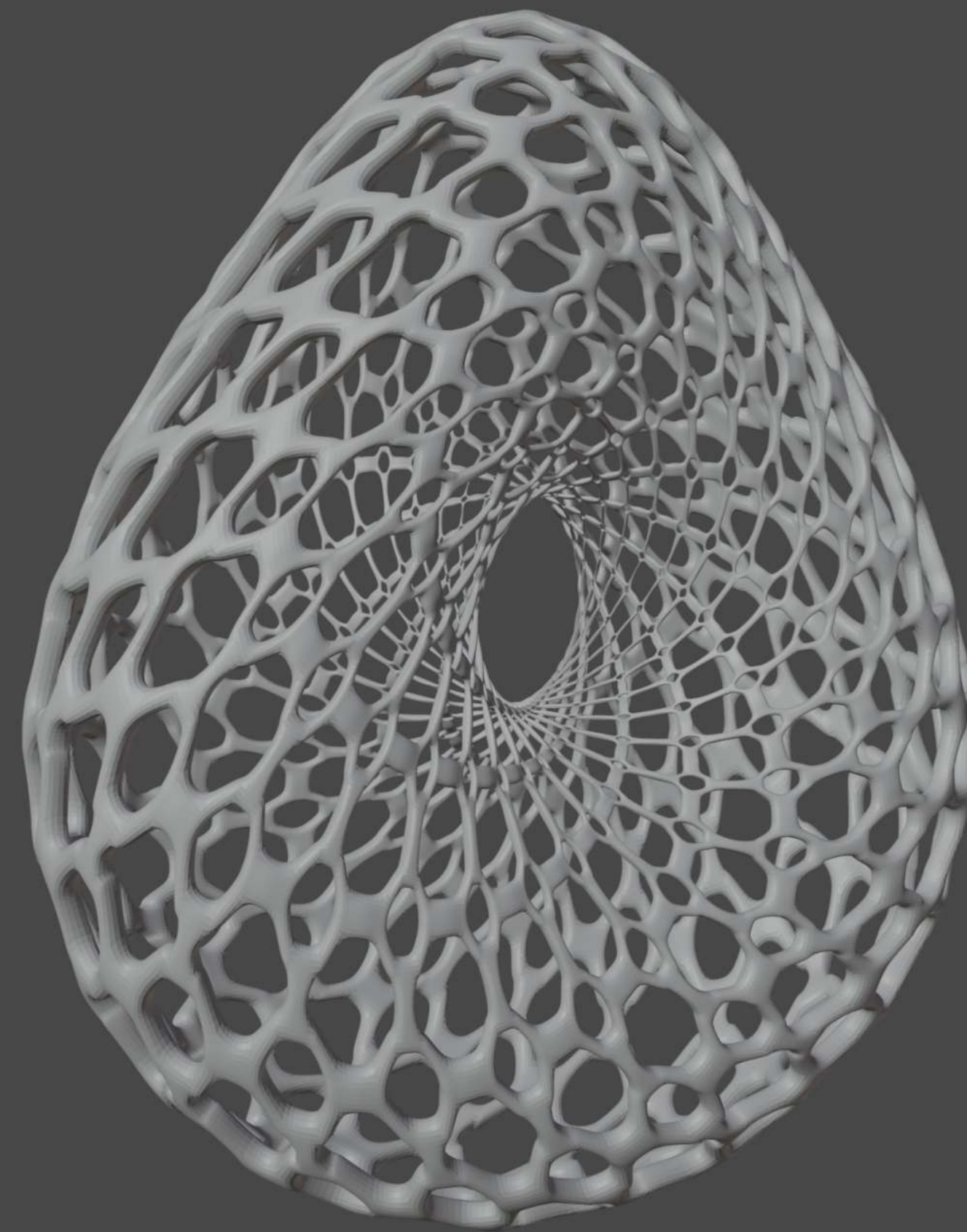
This third set of iterations explore the length of connections between each hole. Iteration #51 has a uniform size of connections between each hole. Although, we can see that iteration #75 stretches out the connections closer to the middle of the pendant. The closer the hole is to the middle of the piece, the longer its connection gets.



75

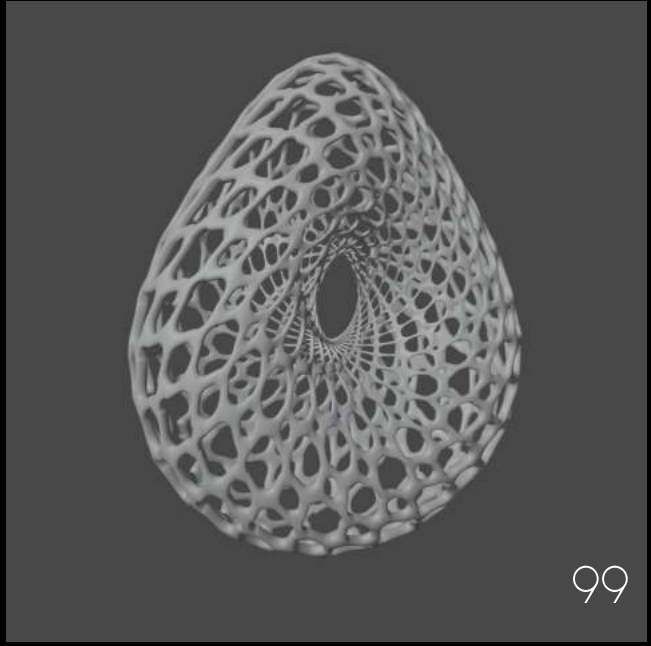
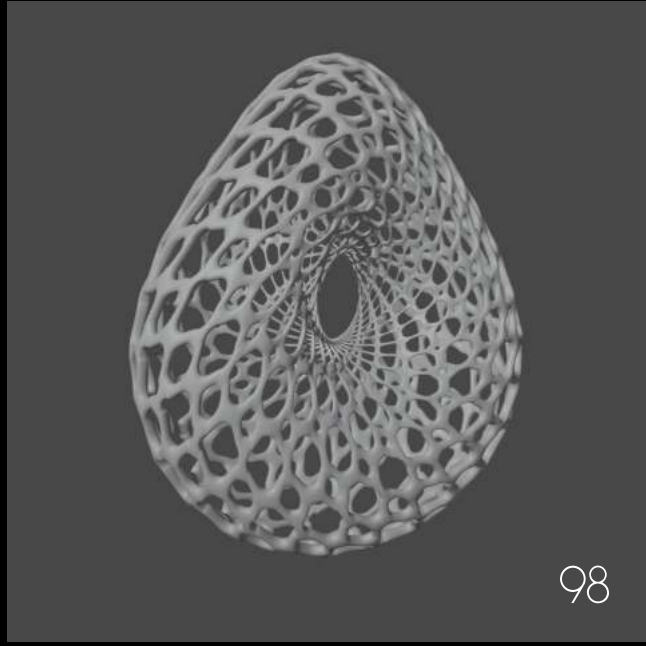
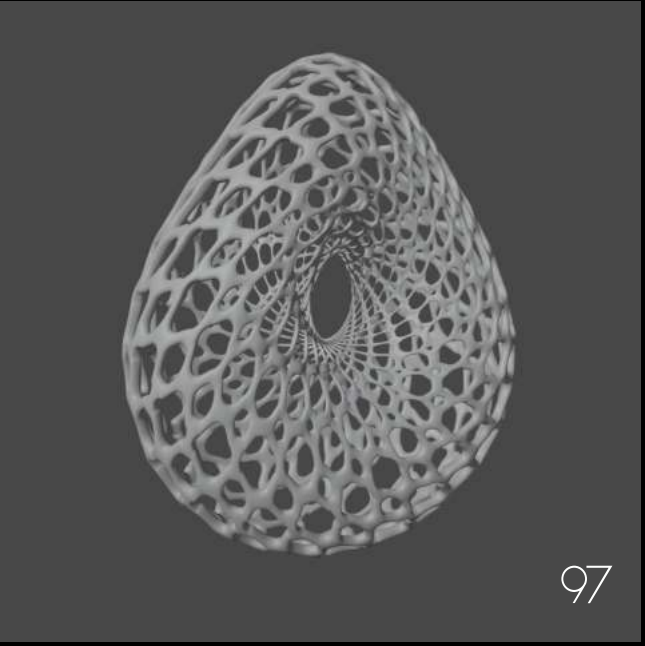
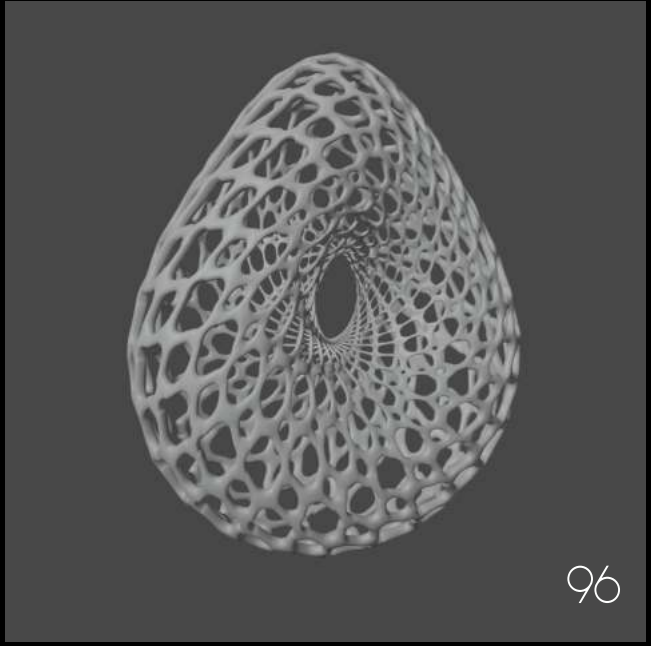
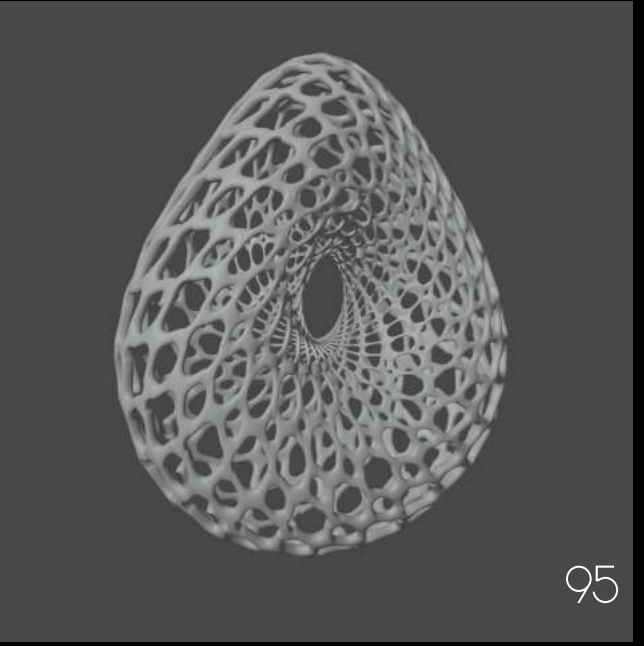
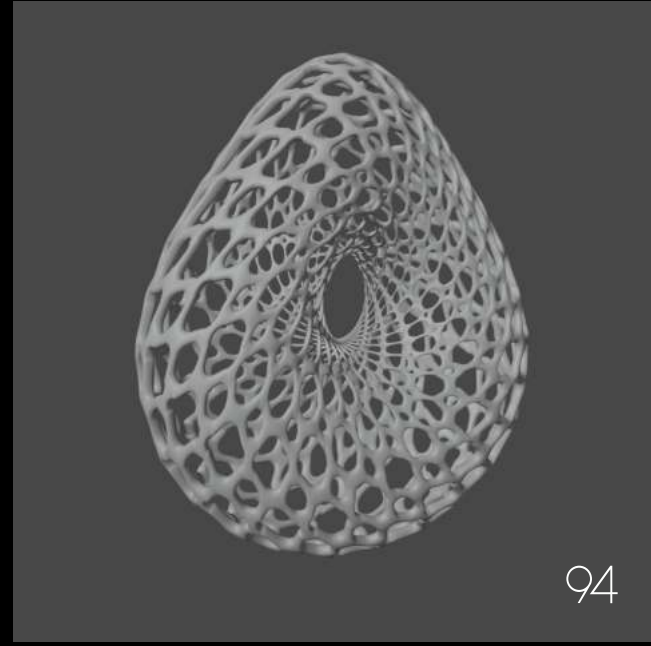
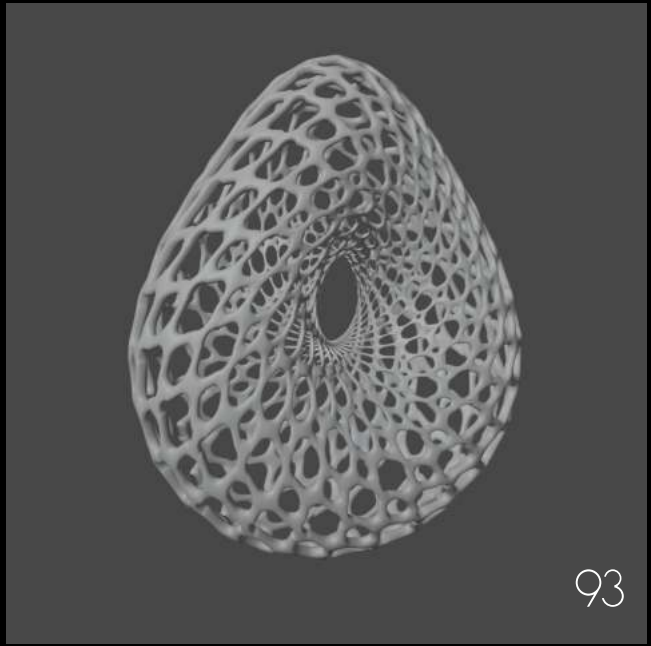
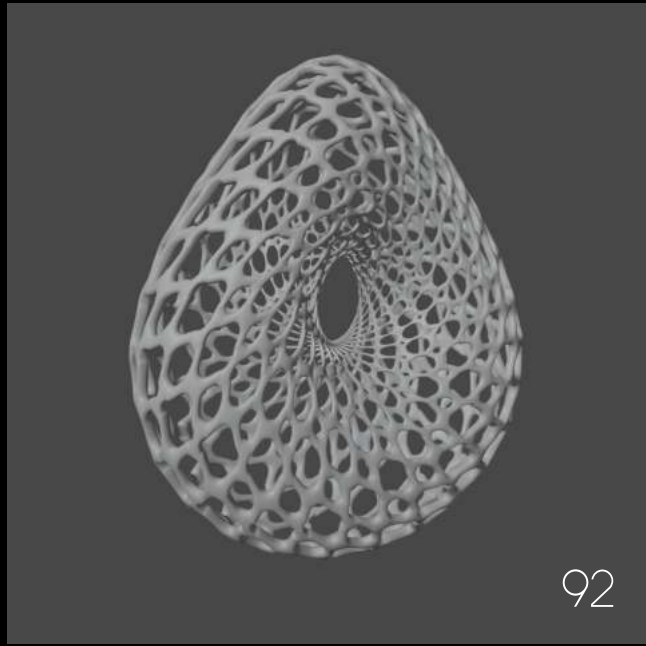
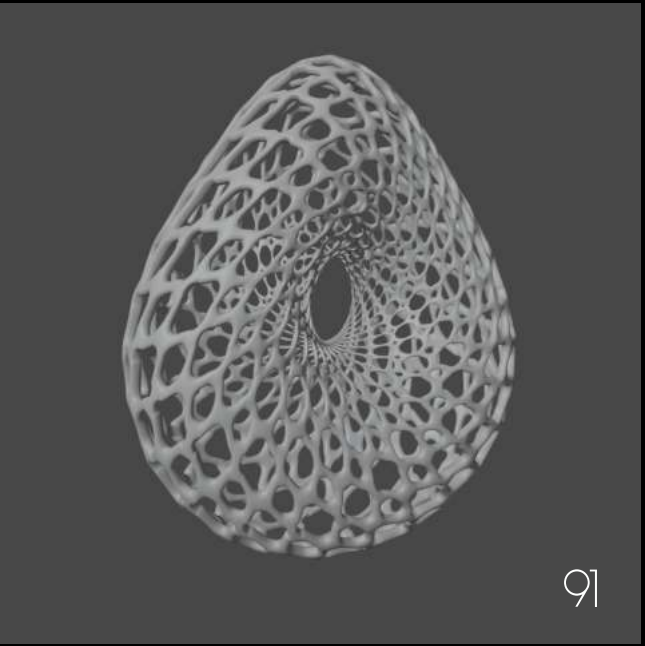
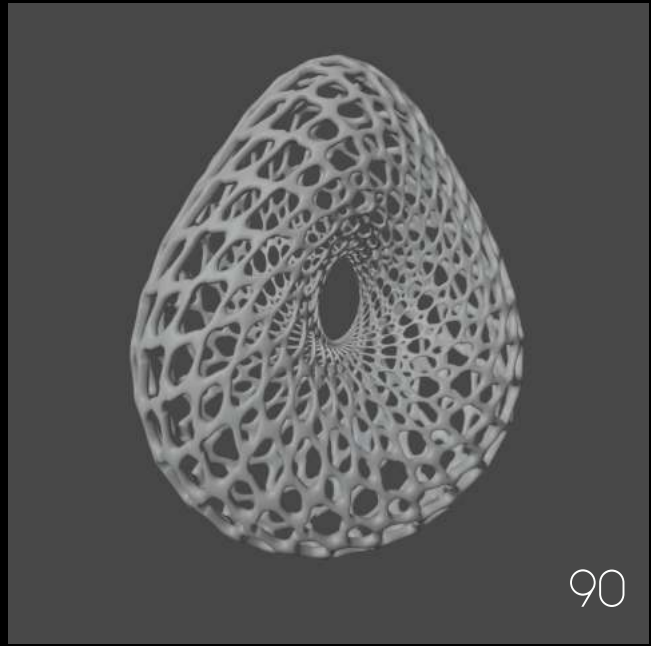
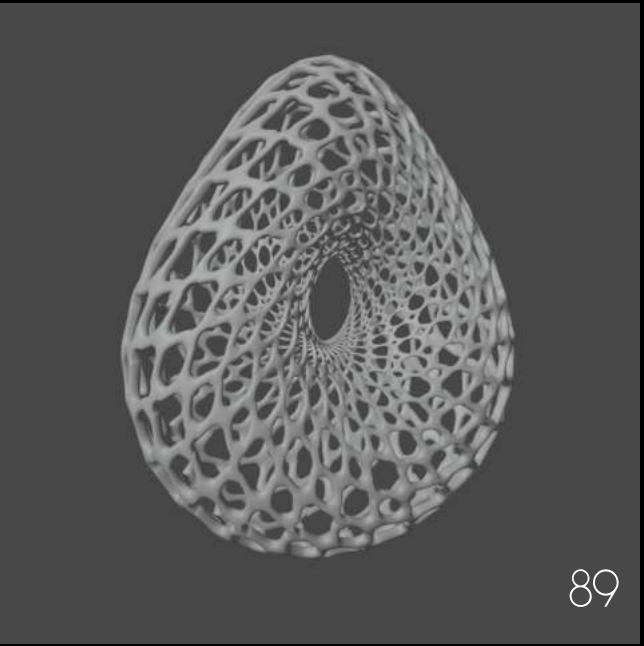
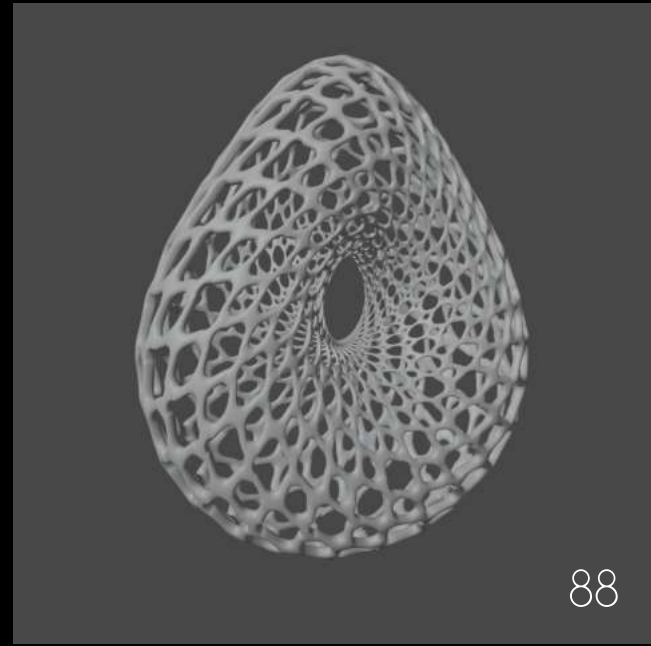
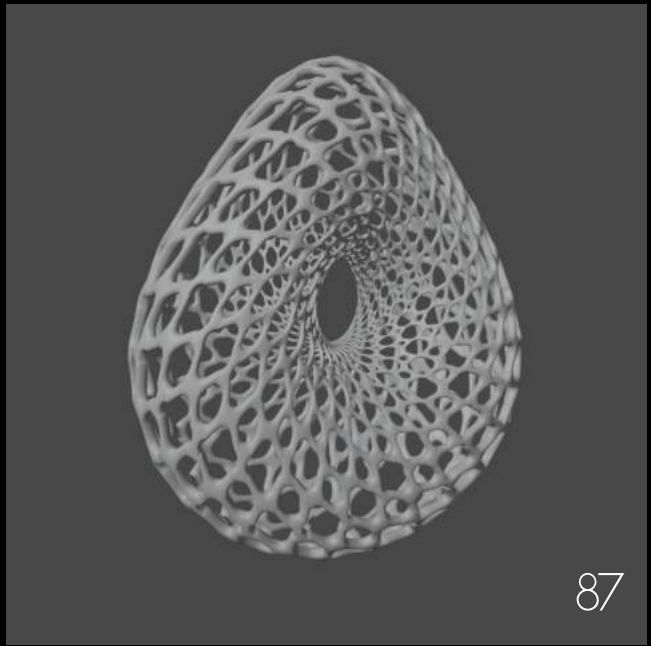
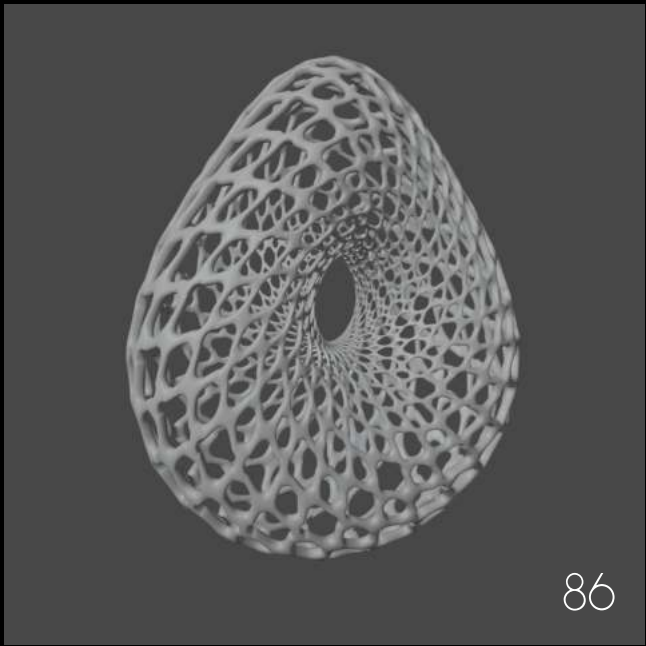
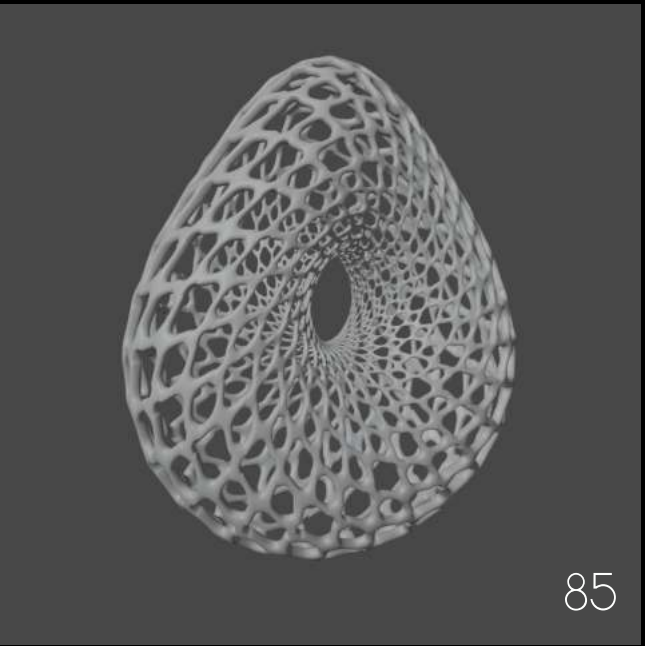
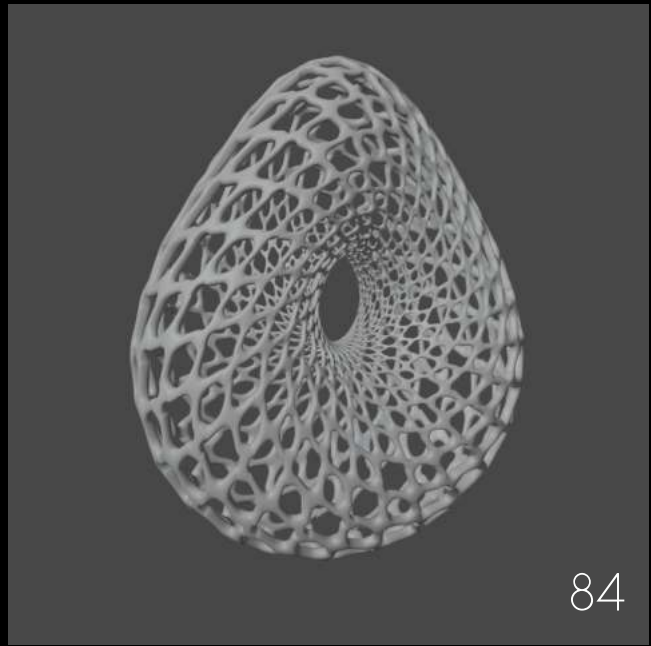
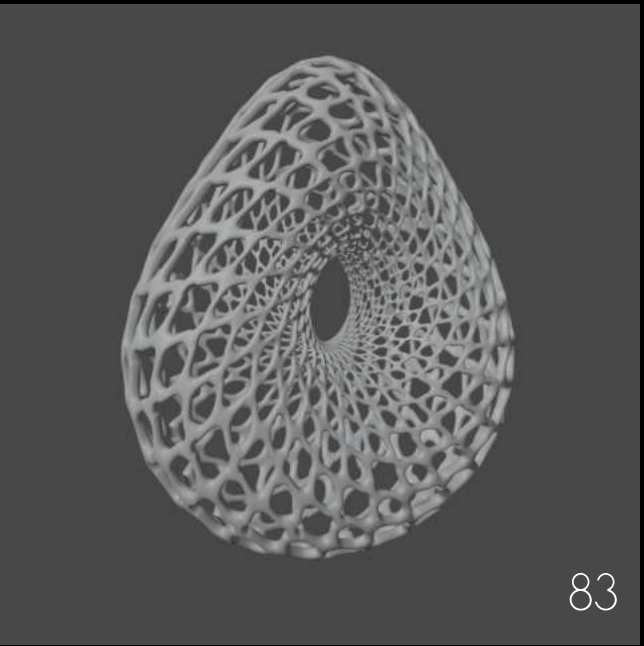
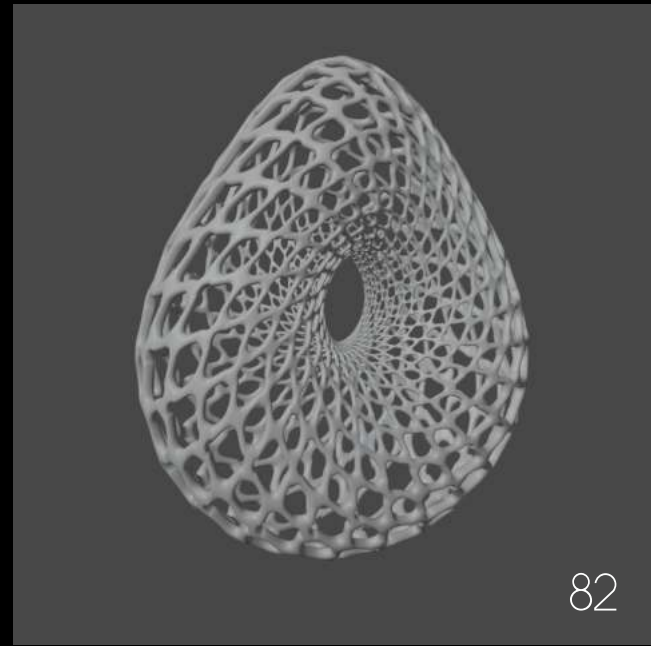
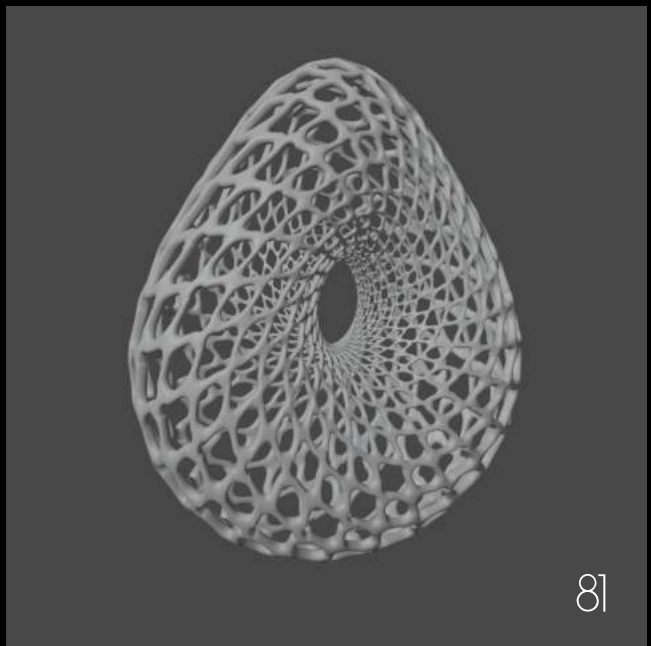
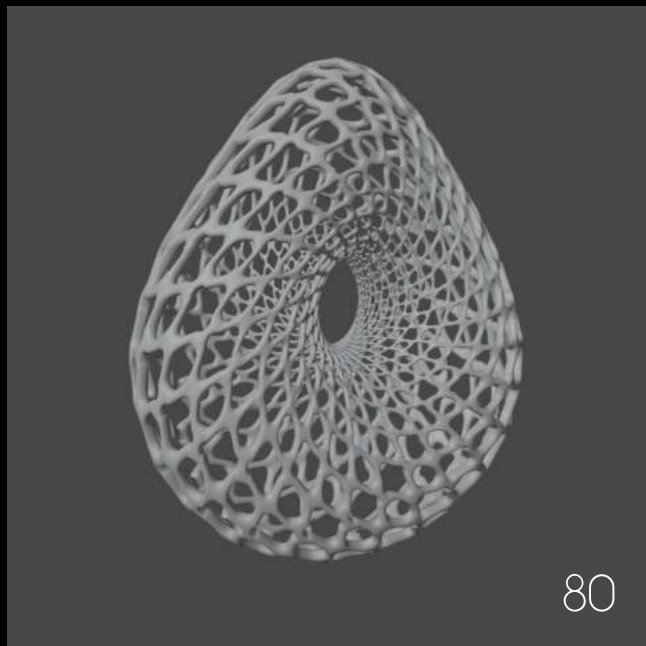
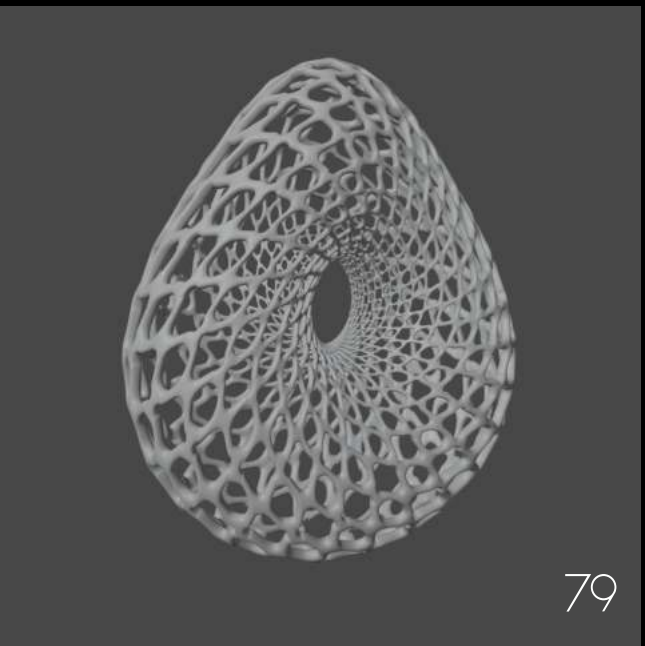
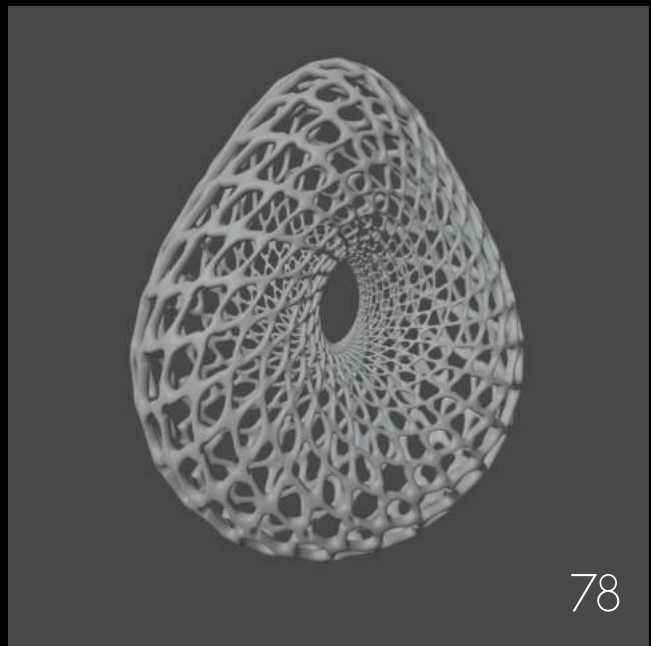
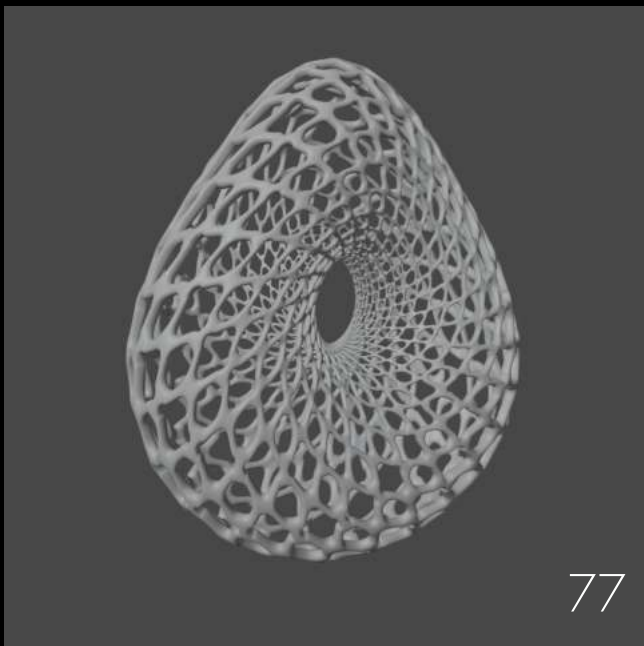
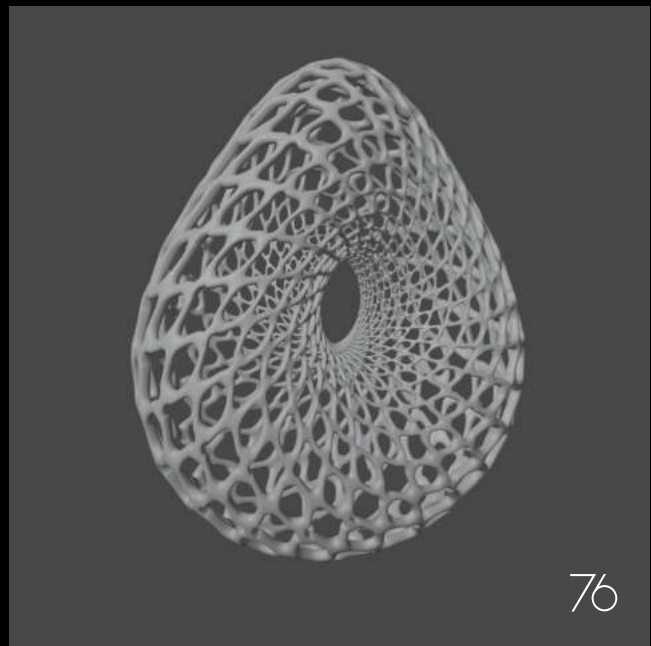


Iteration #51

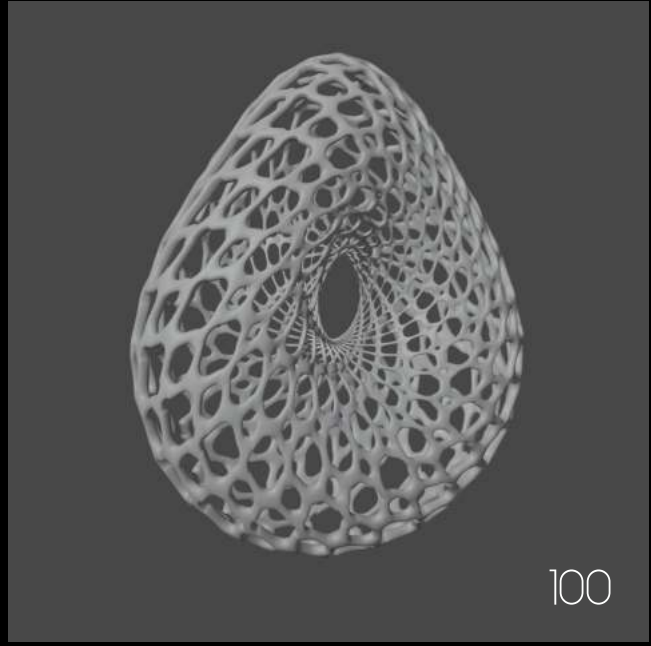


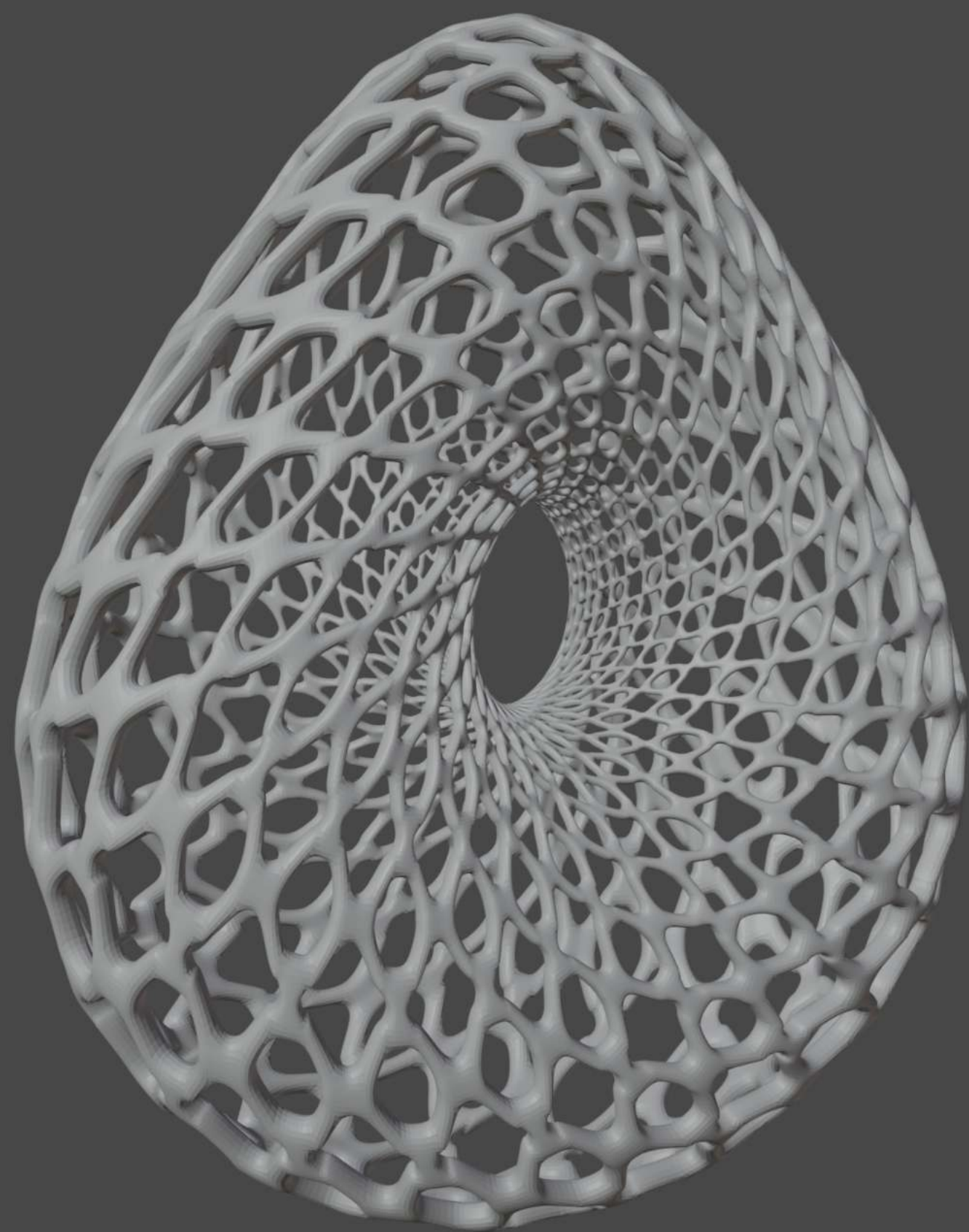
Iteration #75

We can examine that the connections stretch out the closer they are to the centre of the pendant.

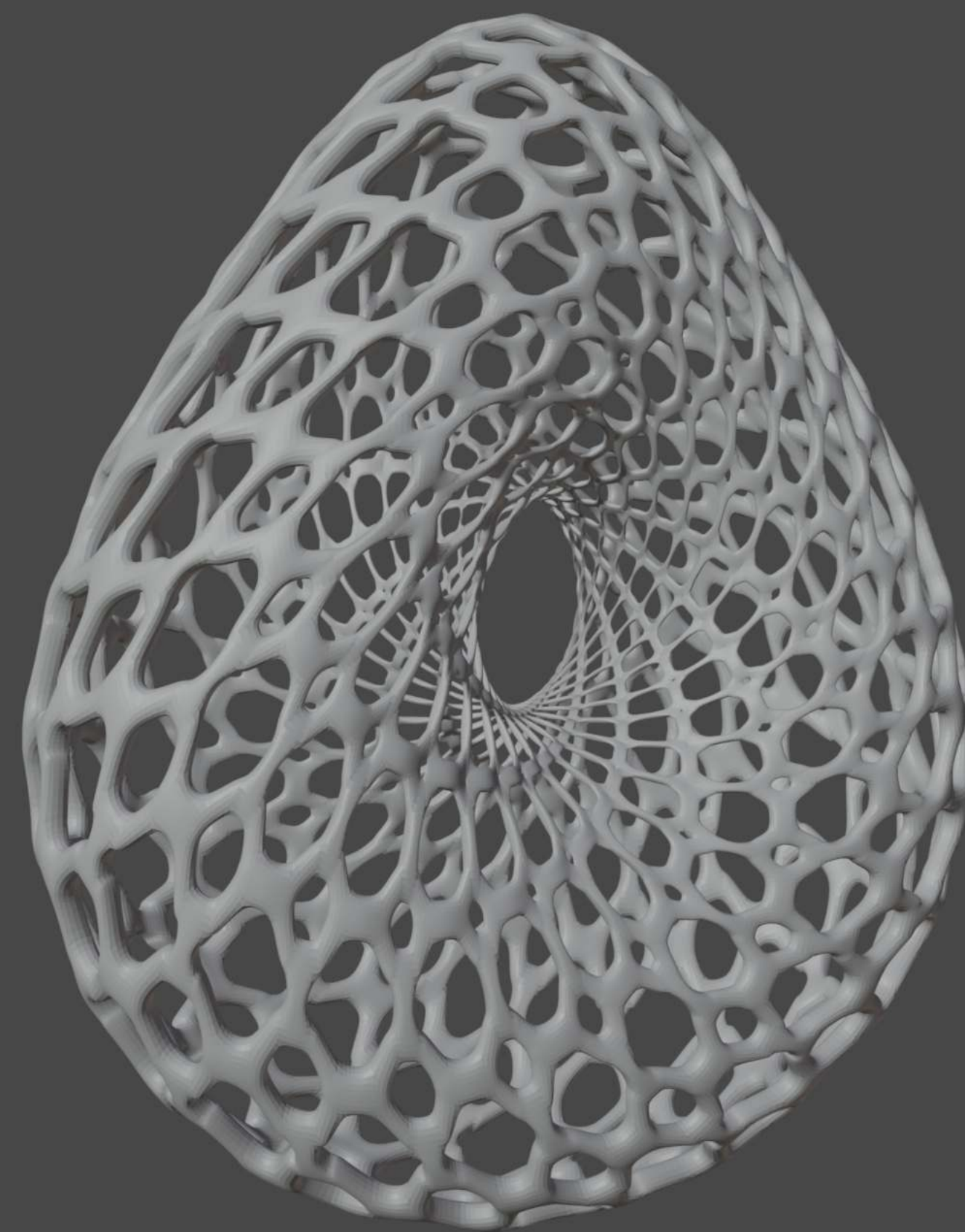


This fourth set of iterations combine the variables modified in the second and third sets of iterations. Iteration #76 shows both variables set to a value of 0.1. On the other hand, iteration #100 shows how the variable that determines the size of the holes is set to 1, and the variable that determines the length of connections is set to 0.75.





Iteration #76



Iteration #100

We can analyse how iteration #100 has both small holes in the middle of the pendant and also longer connections all around the piece.

Final Renders

