

# **The art of fabricating tangible surfaces**

# About me

Who am I ?

Hi !

My name is Baptiste Samoyault, i am in M1-HCI at Université Paris-Saclay.

I don't know what to do later, i like to design stuff so who knows ? Maybe i'll go in that direction.

I like to draw, from funny little things to more serious stuff, i never published anything since a long time though, i'm not often satisfied about things i drew.

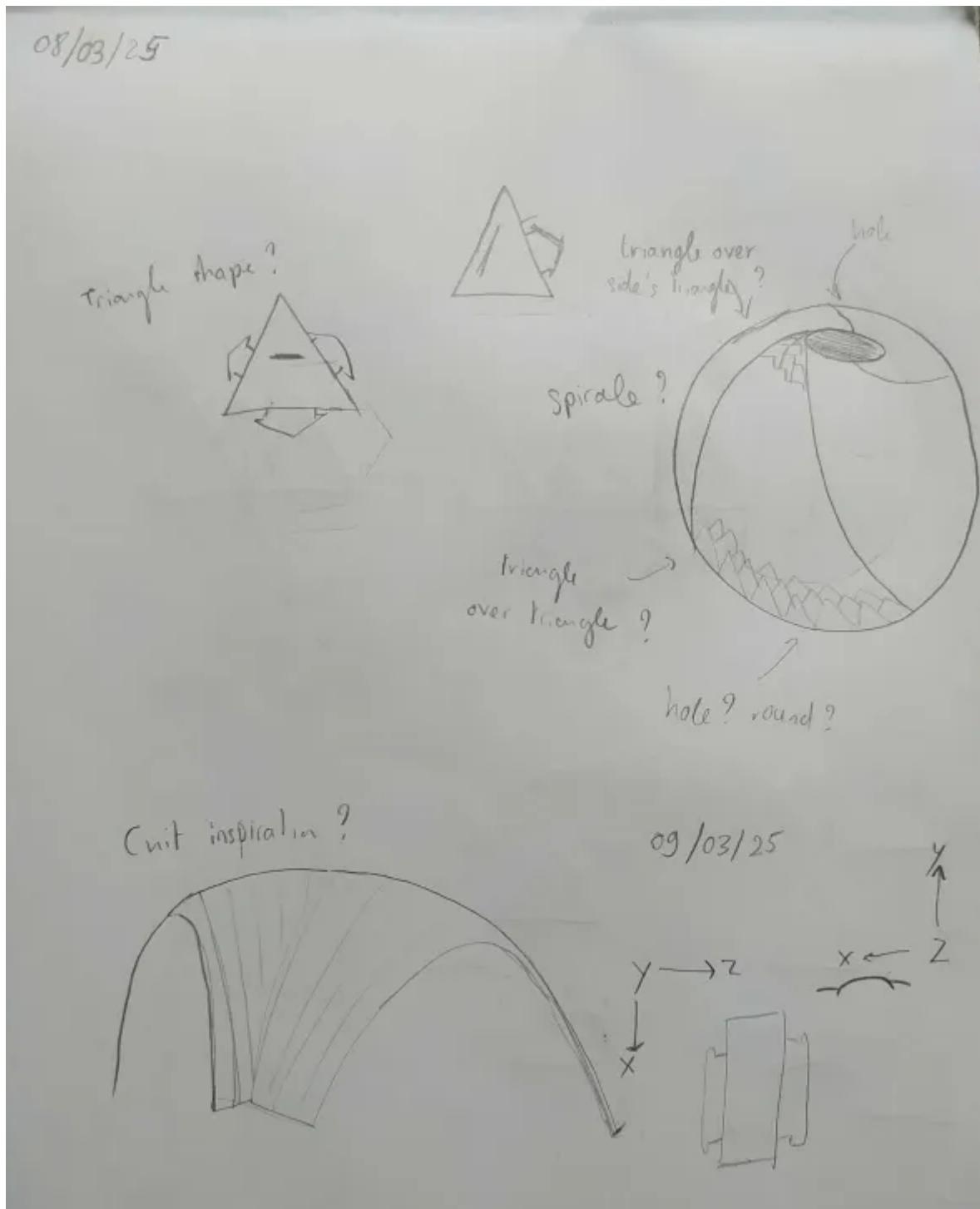
During my free time, i like to go cinema, watching old movies, otherwise i play video-games a lot, it help me focusing on something else and to relax.

Below you'll see what i have been up to this last week about my project for the class of "The art of fabricating tangible surfaces".

# Week 1

Sketches:

Sketch (08/03/25 and 09/03/25)



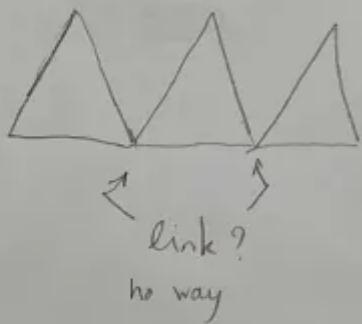
Here i thought about a sphere, tried to think about how to fill a spiral to make a sphere.

The next day, i went to check some construction's architecture, i found interesting to look at the way the Cnit's shape, but after a few hours, overthinking at it i realized i wasted time and efforts so i backtracked to my triangles idea. But kept the idea of making curved shaped object.

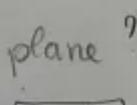
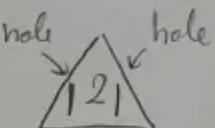
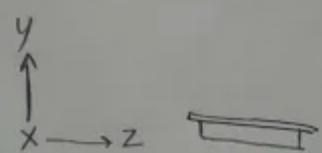
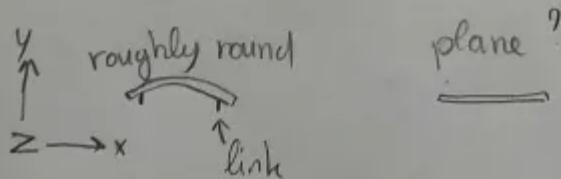
Skechth (09/03/25)

09/03/25

:( X won't do

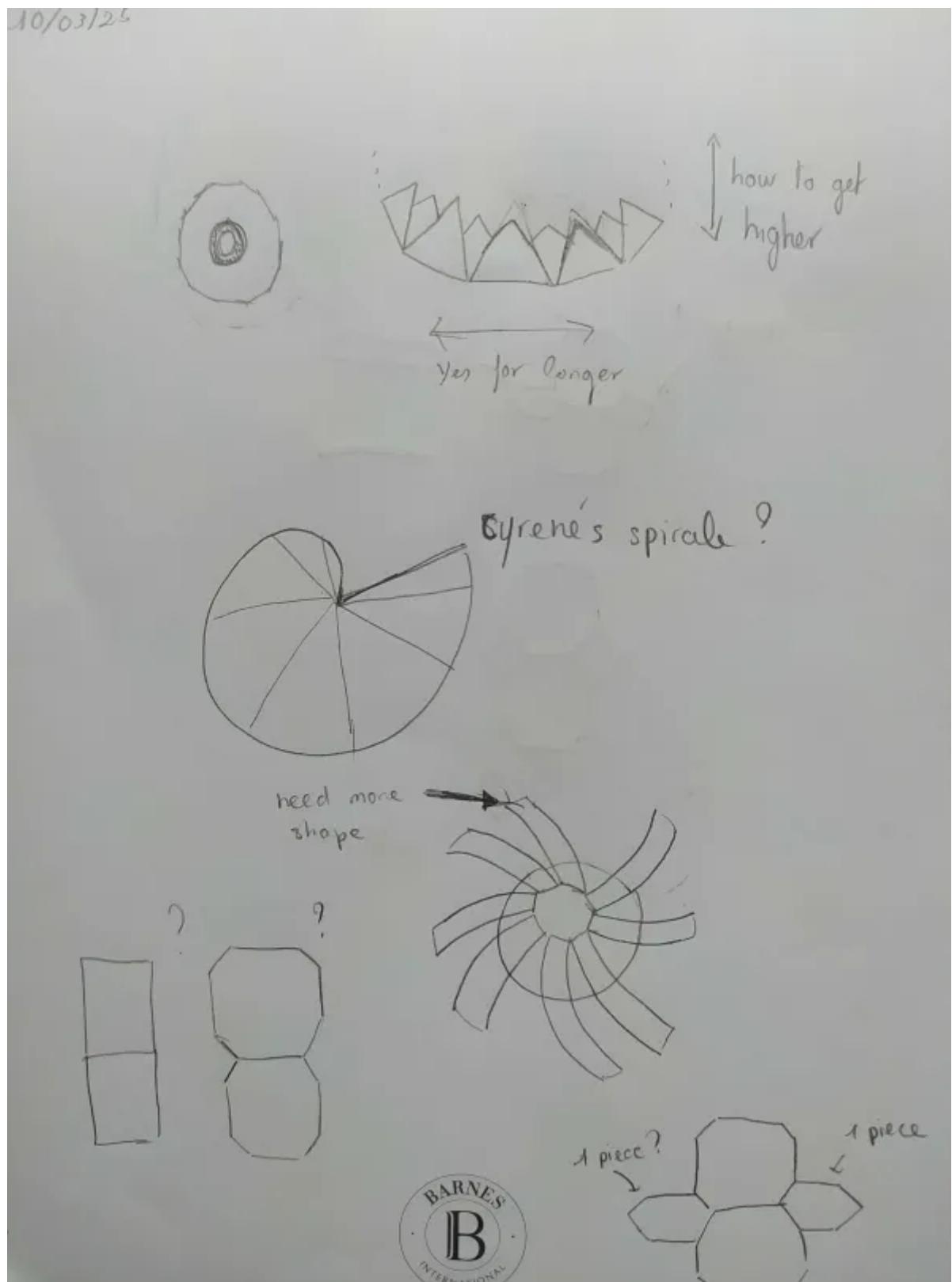


need 2 type (at least) now)



here are some sketches of how i'd try to make the triangles hold each other.  
I realized i would need at least 2 variations (or 2 different shapes), with ones with holes and others without.  
But after some time, i was not sure anymore about those triangles. I felt like it wasn't the right way, i tried to force it but didn't work well.  
So the next day, i wanted to come back to my 1st idea : the spiral.

Sketch 10/03/25



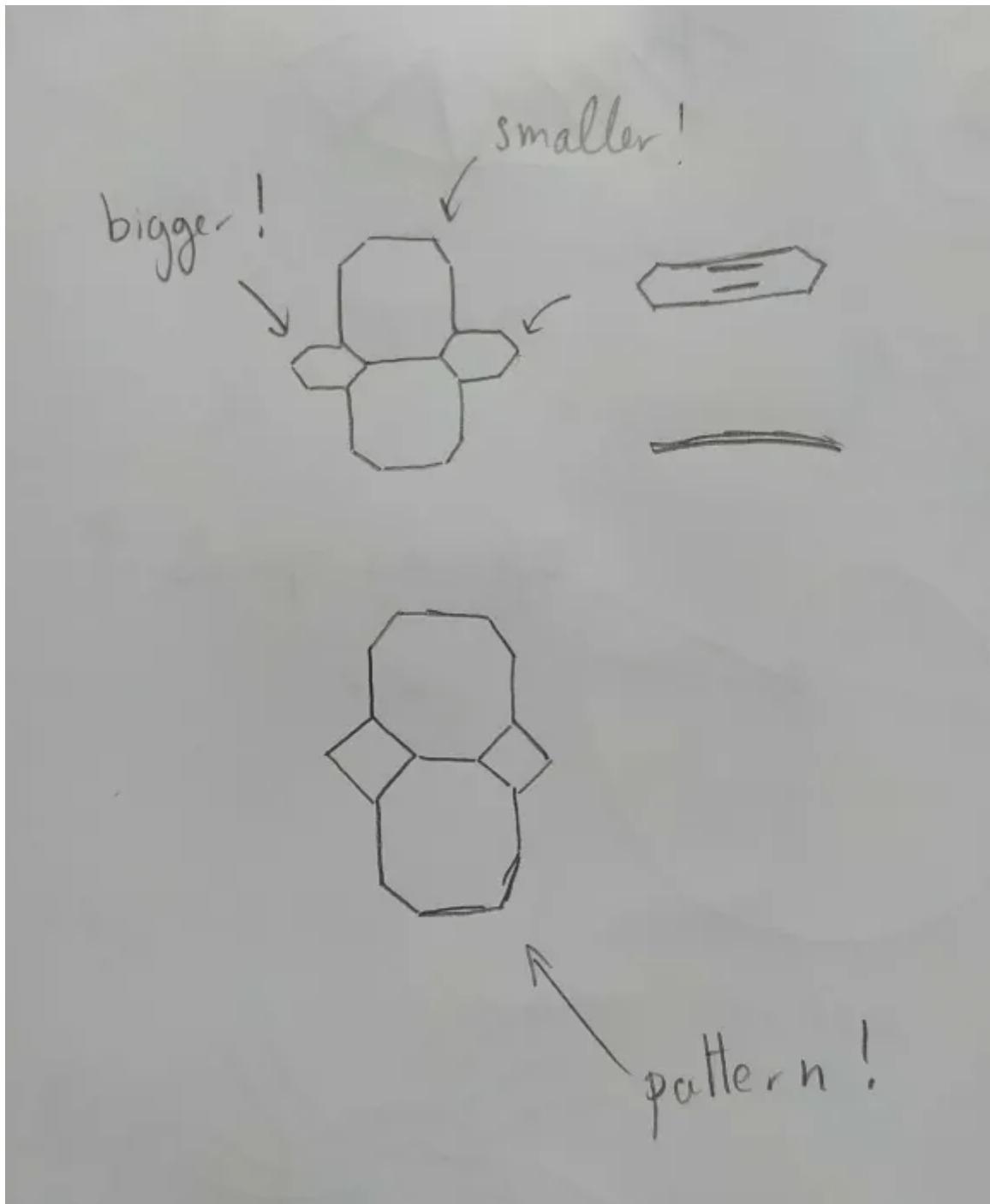
I still tried to give a try again to the triangle but as i was drawing them i looked back at it. I knew i could make a circle out of it, but a sphere ? Not like this. I'd need to think of it a bit more, but i really wanted to go back to a spiral first. So i went to check on some mathematics theorems, at first glance i was intrigued by the golden number theorem but i was more interested by the Cyrène's spirale.

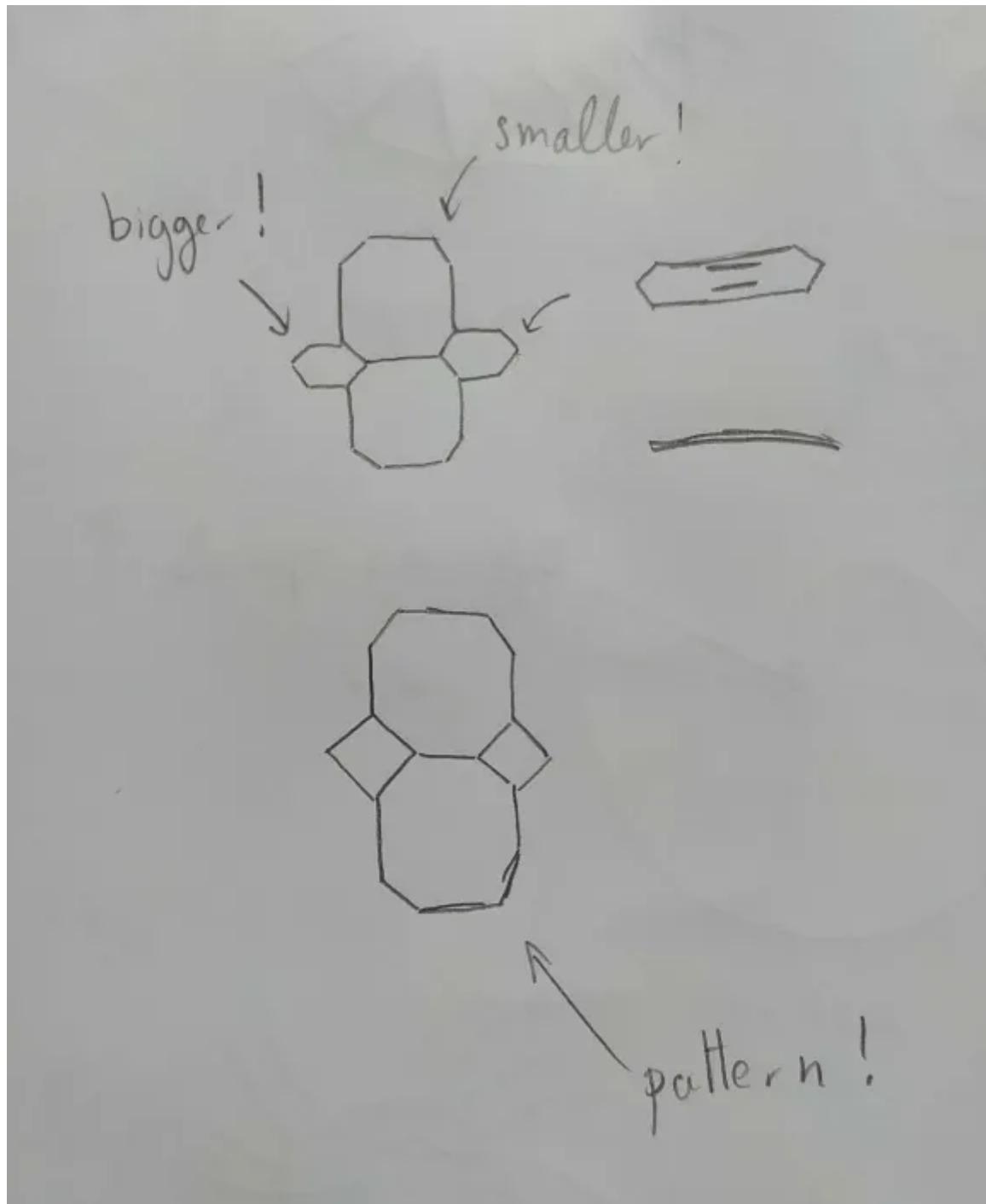
From it, i thought of various way to make a spiral.

So i drew big rectangles coming from polygon, then i wanted to make the rectangles into a composition of different shapes. A basic version was to make the long rectangles into smaller ones linked to one another, then i went to a different shape : an octagon. From it i added 2 news pieces.

Then i wanted to make those 2 pieces, a one piece only.

So i drew the next 2 shapes.





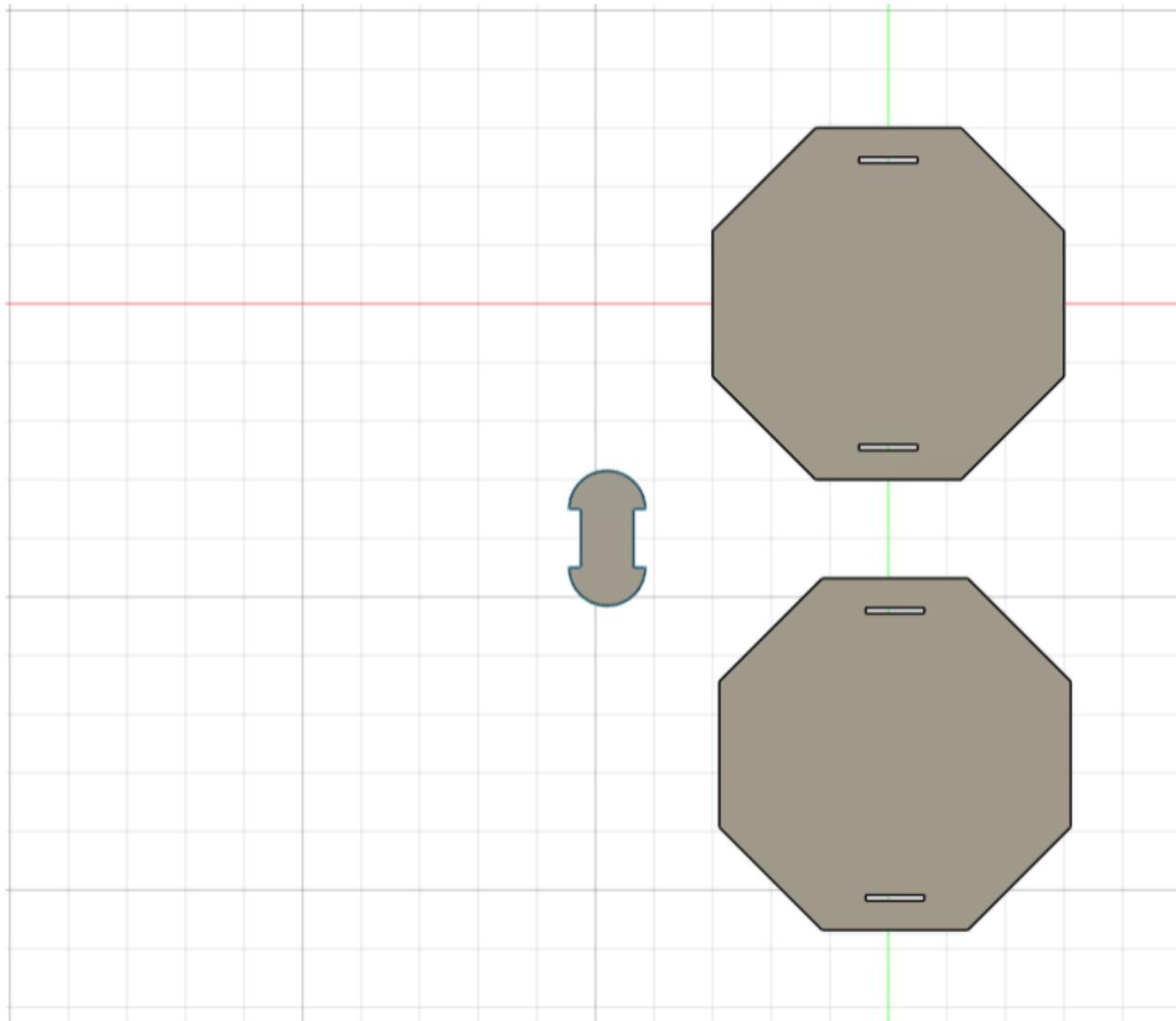
After some thought, i decided that one piece would be smaller, with holes to hold the octagons and with some curves.

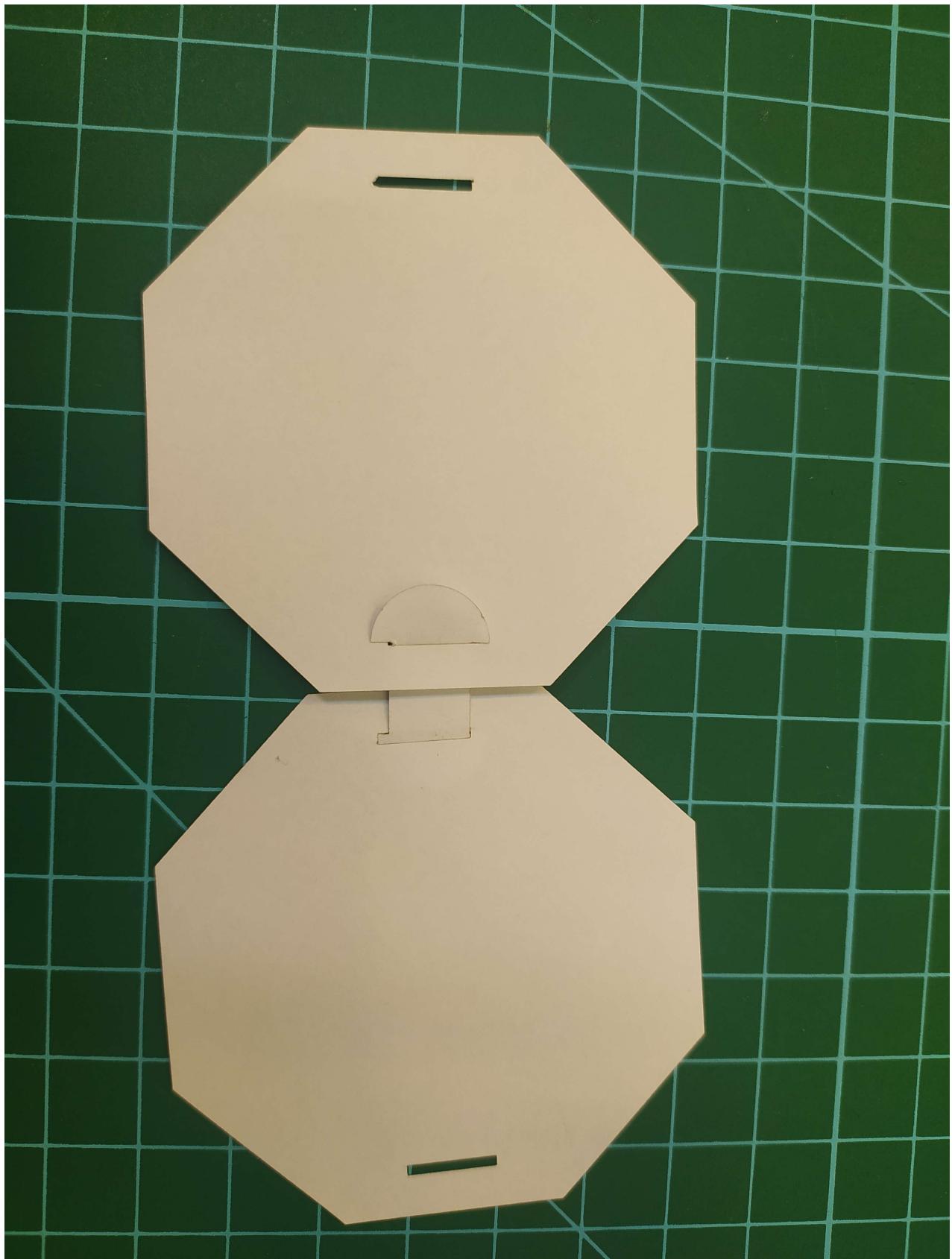
I have a base, but still need to think more of it.

So next time would be a more refined version made on Fusion 360.

# Week 2

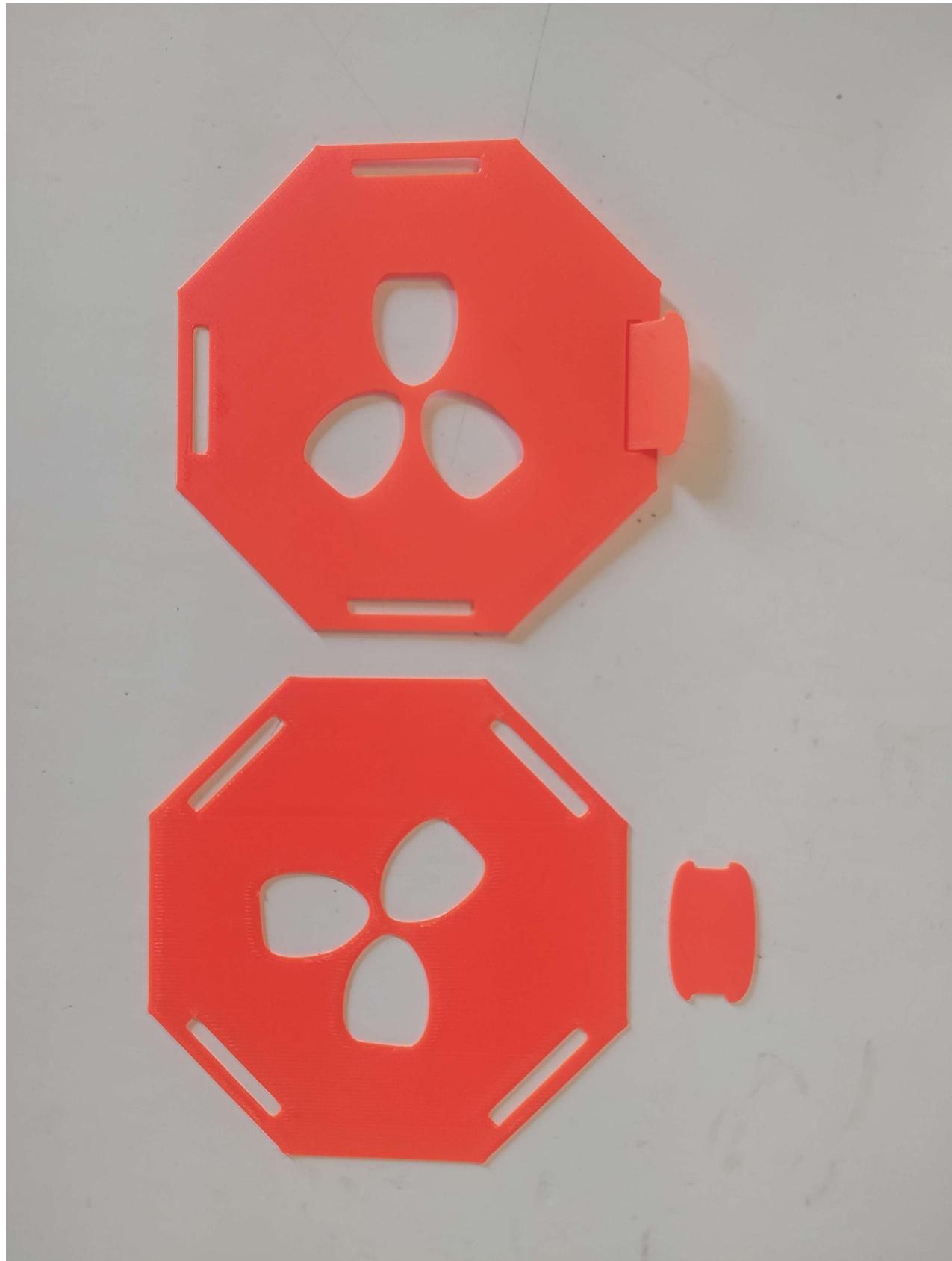
Here are my results on my 1st laser cut, to test how to make joint for my future work. Everything has been made on Fusion 360.





# Week 3

This is what i printed with the 3D printer.

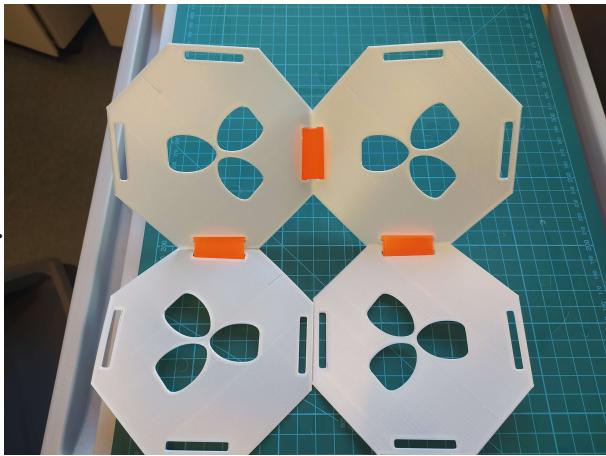


N.B. : The notch is almost at the right length and apart from them, the base won't be orange. Since my goal is to make a lamp, a white base is better for the light.

# Week 4

I kept printing more patterns. This time i tried PETG format for the base instead of

PLA.



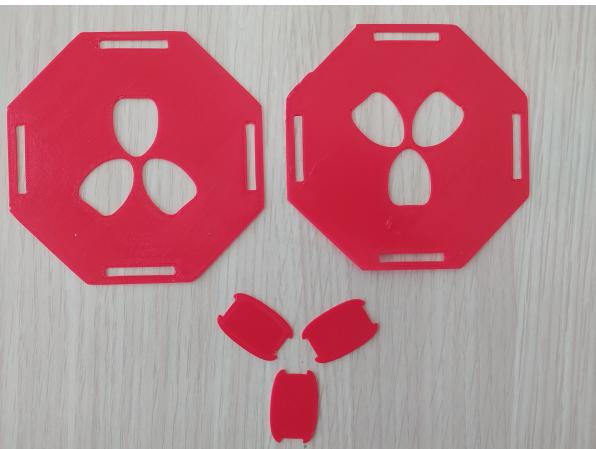
I also learned how to change the filament for the 3D printer.

# Week 5

More and more patterns printed this week, this time i added 2 more colors :

- Red
- Blue

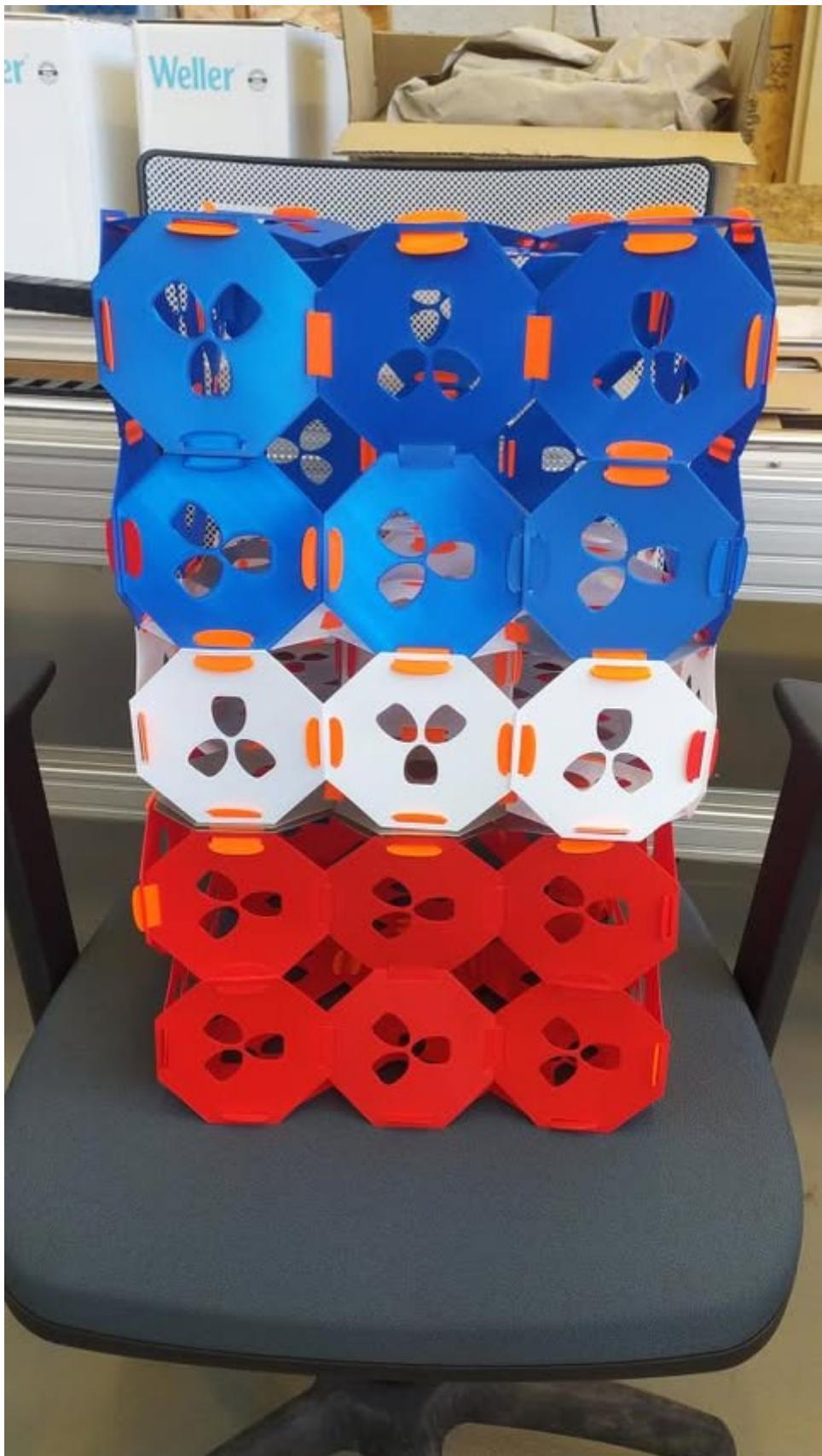
I'm gonna try to make a "french flag" like with my prints, we'll see how it's gonna be at the end.



Also, by staying late at the Fablab and ENS, I helped several people to print their patterns.

# Week 6

here the final design of my "2 in 1" french-lantern-thing



The blue and red can be "separated", the parts fit into each other. There are gray pieces to complete some parts of the design since i ran out of white.

# Week 7

Exhibition day

Time to show our work. Here is a cartel "explaining" briefly my work. The template was made by Sergei on Figma.

The image shows a teal-colored exhibition poster. In the top left corner is a QR code. Below it, the author's name "Baptiste SAMOYAUT" is printed. The title "French Lantern" is prominently displayed in large white font. A detailed description follows: "My incredible piece of art is a lantern, printing in 5 colors: blue, white, red (for the french touch) and gray and orange for connectors and to complete missing parts. At first I assembled my pieces randomly, then I had a flash of insight and wanted to make 2 pieces that fit together. The cubic shape of this lantern makes it perfect for a bedside or hanging lamp, the 2 parts are held together by the design of my connectors... and by the power of the holy spirit and hope". To the right of the text is a photograph of a 3D-printed lantern, which is white and has a complex, faceted geometric shape. It is set against a background of a teal grid pattern.



Photo pre-exhibition

We got the honor of presenting our work in front of everyone, what inspired us, what was our goal, etc...

# Working files

All the file in .3mf can be opened on PrusaSlicer 2.9.



attachePAR8.3mf

92KB

My connectors



DUO.3mf

39KB

Base of my design

The next file below can be opened with AutoDesk Fusion 360



Base et connecreur (V1 et V2).f3d

109KB