

# 3D SPREE'NTING AT FRANÇOIS MANSART !

*Product design students take part in the 3D printing frenzy during an intense 2-week workshop about the general concept of "saving".*

---

## ● SO WHAT IS THIS ALL ABOUT ?

We are in the second year of product design studies and for two weeks we worked on the topic of **3D printing**. It was during this workshop, which took place from January 4 to January 15, 2021, that we were able to meet and collaborate with the first-year students who are taking the same course as us. The workshop was organized and led by William Boujon, a professional designer, and by our design teachers: Mrs Tracq (in charge of the first-year students) and Mr Valentin (in charge of the second-year students). It was very interesting to be able to work with new people.

The topic of these two weeks of intensive work was "**save**". The aim of the workshop was to create a 3D printing object on the topic of saving. Separated into several groups of 3 to 4 people, we went in different directions, some looking for the saving of space, others the saving of material or the saving of time and effort. All this work then resulted in an object modeled on a computer and then manufactured by 3D printing. Each object created was intended to be useful and to help save time, material or space depending on the theme chosen.

## ● UNDERSTANDING HOW 3D PRINTING WORKS :

**3D printing is the action of materializing a digital object thanks to a 3D printer. This machine is able to create multiple layers, one over the other, to generate a new object.**

This machine is usually used to create **models and prototypes**, but it also is able to print more complex objects that need a more detailed process. For example, you can print the piece of an object that is broken and you can't find the replacement, like a spare part or also, you can create your own furniture !

The 3D printer is composed of three parts, first the **print bed** which moves on the Z axis (up and down) and the **glass tray** that goes on top of it. Over the tray is where we come to build our **layers of material**. The other component is the plastic filament, material that melts when it is hot and hardens when it gets colder, to give shape to the final object. The plastic is bought in spools that we come to introduce inside the liquifiers and an **extrusion**



**nozzle** using a drive wheel as support. The third part, and final part of the printer, is the mechanism, usually called nozzle, that is in charge of ejecting and melting the **plastic filament** depositing it on the glass tray, layer by layer until the object is completed. The nozzle moves on the X axis and Y axis (left to right and back to front). The object that we want to print is created on a **CAD software** (in this case we have used Solidworks). After creating the file, we used another software (Cura) to adjust the settings and prepare printing. For the material we used **PLA** (polylactic acid) but you can also use ABS, Nylon, Polyamide, PET and PP.

With 3D printing we can make models, or other objects in plastic which are more complex or which have a particularity that other processes can't achieve.

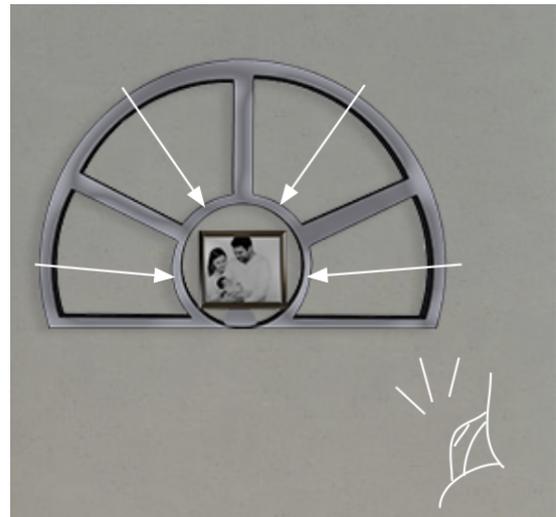
---

## CHECK OUT OUR PROJECTS !

### ● 3D CROWN

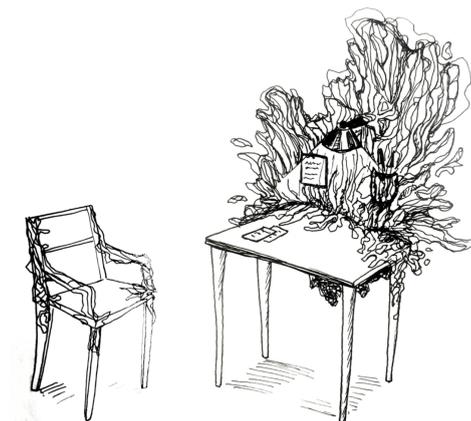
With the context of Covid, Marie, Calista, Li-Thong and Eva imagined an object around the topic of privacy and intimacy while respecting the concept of saving.

It will help the user to **re-focus** and **chill out** at home. We designed an object named 3d Crown: this is a 3d printed pedestal without legs which has the shape of a shelf, that shape integrates a pattern with **arrows** that all point directly to its center where the user displays the precious object. That ineffable object can make him remember **his own intimacy** by giving him good vibes. During the workshop we explored the application Cura, we made and tested some patterns which have inspired us for the aesthetic of our project and that allow us to save material.



### ● PARASITES

In the context of an economic design we've created Parasites. In this case, economics refers to a system which centers on living species and how they optimize their spaces and resources, saving their needs to survive.



For example the human blood vessels, the structure of the leaves and even the crown shyness among trees. The parasite is going to **invade space and appropriate our environment**. That's why this project was entirely inspired by the universe of nature and **biomimicry**. Our first attempt was working around broken objects and playing around different grafts to give a second life to the previous objects. Secondly, **we grafted** this new parasite to an existing monotonous object with the purpose of adding another functionality and a more unique aesthetic, as the ivy and aphids do on the leaves.

**All these parasites are going to come to our desks, like the virus in the pandemic to invade our workspace, they are coming to disrupt our habits, but for our well-being !**

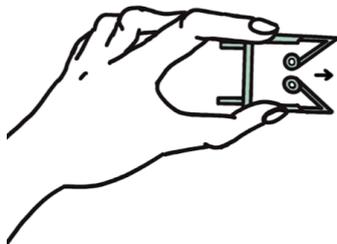
## ● FILAMENT

For this workshop I (William) worked with Anaëlle and Paul. We developed the idea of "saving time", around the notions of wasting and taking time, like meditation, and developing mindfulness.

At first we focused on the technical aspect, we wanted to create a **strong and flexible frame** with a thin layer of plastic with a process in which we print a **geometric pattern** to create a seat. Unfortunately, we couldn't test it on a real scale to see if the seat could resist a person's weight. Finally we decided to create an object for contemplation, a "**picture object**", which can be useful and captivating. We thought about a partition for private individuals. The idea is to hang modules together and suspend them on the ceiling. If I could, I would change the idea of the partition. I think we precipitated the idea because we were late in the project.



## ● CLAW - THE HANDY DESK COMPANION



As the topic of the workshop was about the concept of saving, we (Lea, Kawtar and Shanan) have decided to focus on the idea of saving mental space by suggesting a certain form of organisation in the workspace.

Our idea was to create an object that could easily be carried around and accompany a person in their **daily work life** to fulfill **multiple simple tasks**. This is how we ended up creating CLAW, a **cute 3D-printed desk companion** that serves as a reminder and trinket keeper. He can hold a few pens and papers, small notes and other stuff like a USB key and even a pair of glasses. His head acts as a clamp and his **claws help him** land anywhere. Once he gets a good grip he won't budge until he's accomplished his mission !

Because the workshop came to an end, choices had to be made. But as we gained experience **in analysing the matter** and **understanding the subject** more precisely, a future experience might lead us to deal with different concepts.

## ● HONEYCOMB

Our project focuses on the **saving of space and matter**. We tried to **build 3D patterns on the software and then print them to form a finished object directly, but it failed**.



We (Albane, Amélie, Lorène, Marine) then worked on **flat patterns** like those of the tapestry. The aim was to multiply hollow but resistant patterns to save material but which could be strong enough to serve as a support like a small shelf. We printed flat patterns with the 3D printer and then heated the material to be able to shape it and give it the shape we wanted. This step was difficult because the plastic must not be too **heated** or it will melt. It also cools very quickly and we only had a few seconds to give it its shape. Many attempts were failures but in the end we found a way to bend the material easily and evenly with an iron bar. Our final object is a **shelf** that can be assembled with others to adjust the size.

## ● DREAM NIGHT-LIGHT

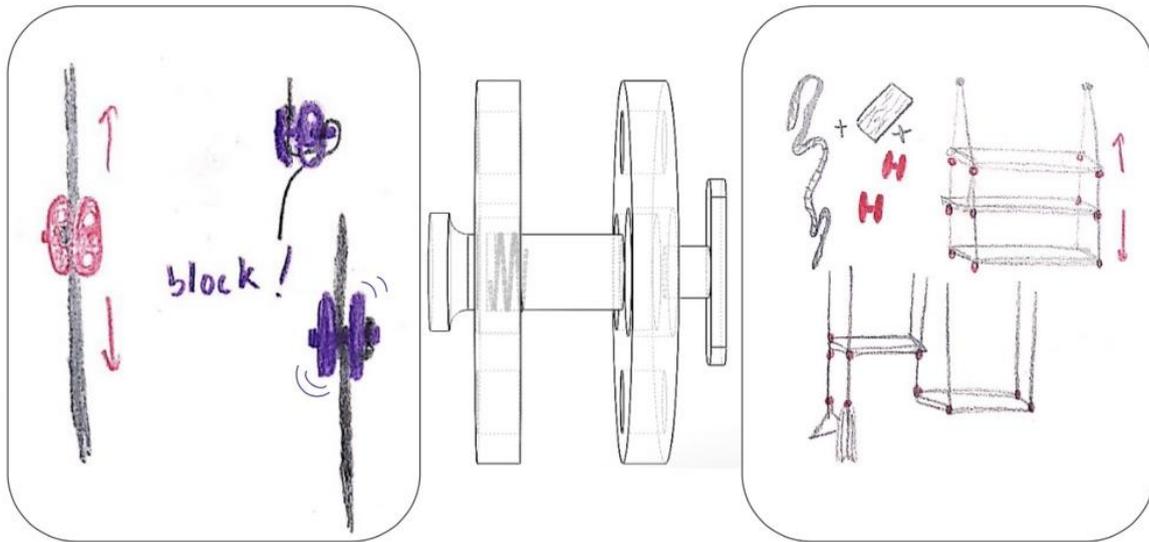


As you now know, we worked on the word “**saving**”. So to become familiar with the subject, we wrote a few key words depending on what the topic made us think of, like using as little as possible, saving material, saving space.

After, with my group, we (Alyssia, Nolwenn, Sarah and Carla) brainstormed on this subject, “**saving**” made us think of the word discretion. We therefore wanted to make **an object discreet**, which is camouflaged during the day. Then, during the night, with the light, **this object is revealed**, So we thought of making a **night light** for children. So we made a cube with just five faces and for the sixth, we created a rail in order to slide different filters with graphics on them.

On one side of these filters, there are drawings **in bas-relief** and on the other side, there is nothing. This last face is on the outside so as not to see the drawings before turning on the light. During the Workshop, we discovered how to play with the material to be able letting the light pass more or less. Thanks to 3D printing, we were able to test **a lot of assembly techniques**. What made it possible to develop the shape of our object was above all thanks to all these techniques.

## ● NODUS



The main question of our project was : How to use 3D printing as a means to save resources from our daily life ?

Our group LLPA (Lattana, Léna, Paul, Antoine) imagined a different way to organize space. We designed a 4,05 inch 3D printed object named **NODUS** that **grips on cables** and allows us to hang objects to it. It can help users arrange living spaces to make **our daily life fun**, simple and surely saving space. Before NODUS was finally printed, we researched the different **meanings of SAVING** or "Économiser" in French, to inspire us. We decided on the old meaning of "economy", **to manage and organize**. In addition we found quotes from **matali crasset**, a designer, and **Alexandra Midal**, a design historian, that made us decide to focus our attention on space saving, **through new gestures**.

Within our research, we explored several ideas and we proposed **a new solution that links walls and cables to store** and organize items. We realized (too late) that the final set up **reminds us of ropes on a sailboat**, maybe we could have pushed our thinking in that direction to create a more unique design and universe.

---

## LOST IN TRANSLATION ? HERE'S A LITTLE HELP:

- **TEST YOURSELF !**

This game allows more than 2 players to play. Don't worry, if you want to practice alone, you just have to have your account on Kahoot!

<https://create.kahoot.it/share/toolbox-3d-printed-vocabularies/abcc7b94-1411-4eaa-b06a-32e95348a2ff>

# how to play with friends (without account)

1. Click the given link
2. Select "play as a guest"
3. Choose "continue as a guest"
4. Choose "classic"
5. Enjoy!