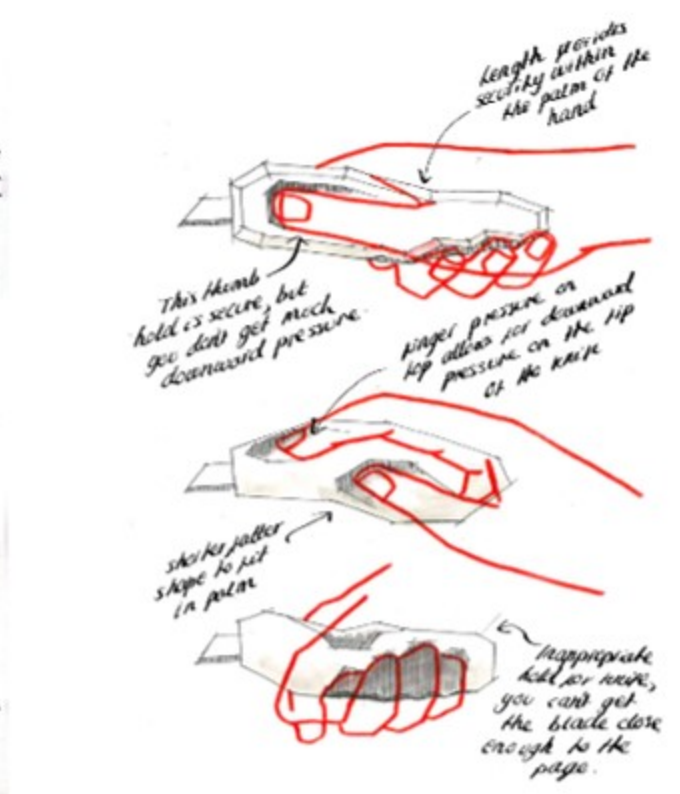
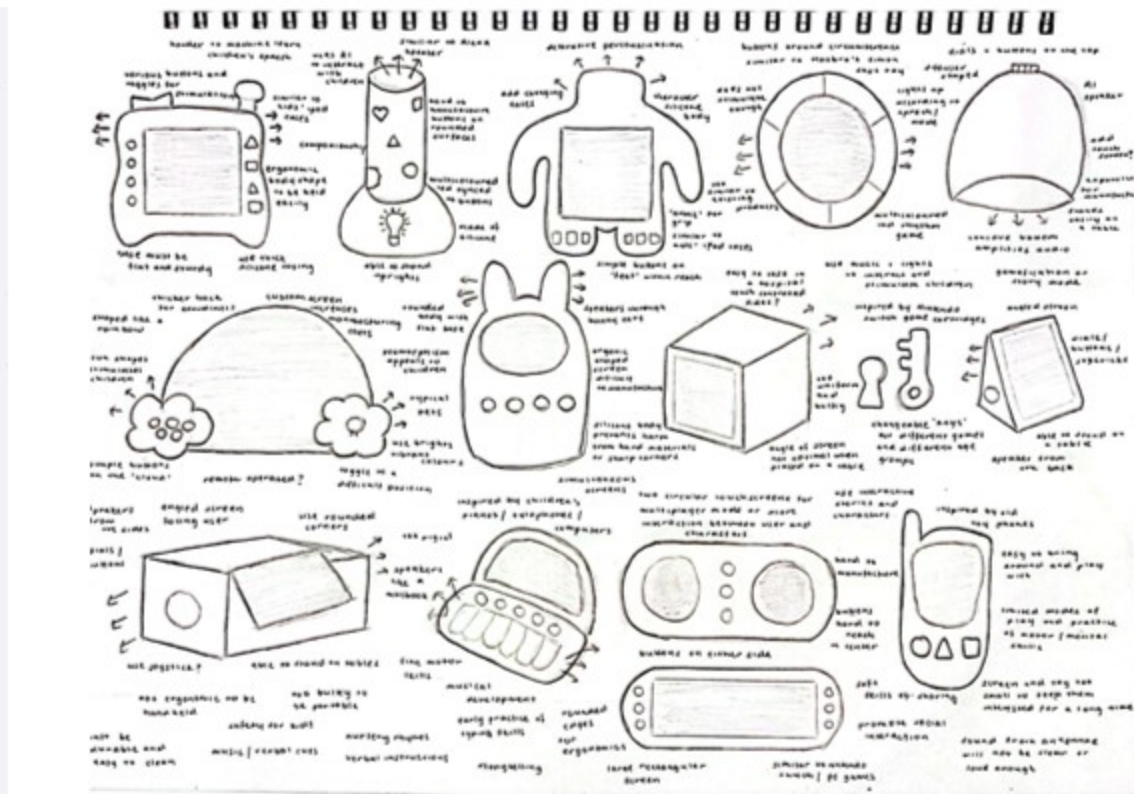
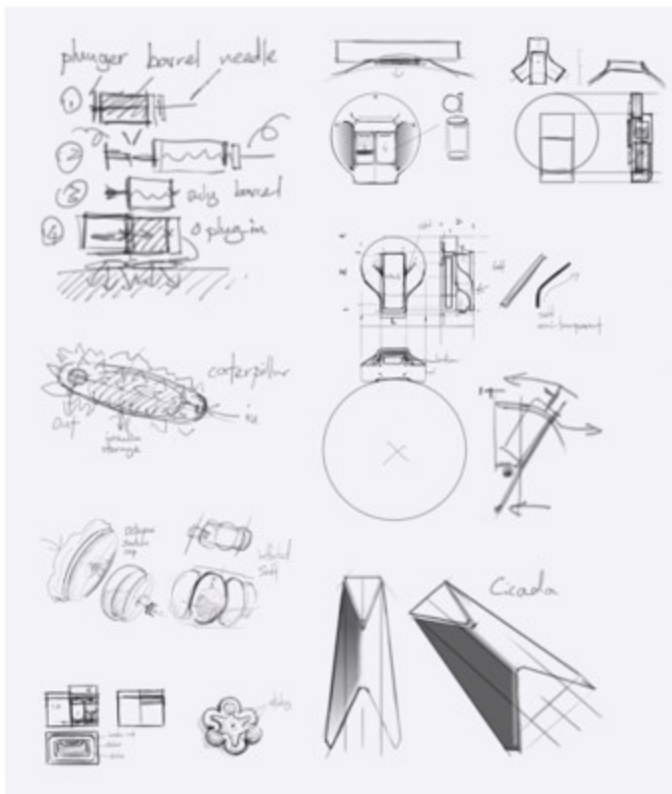
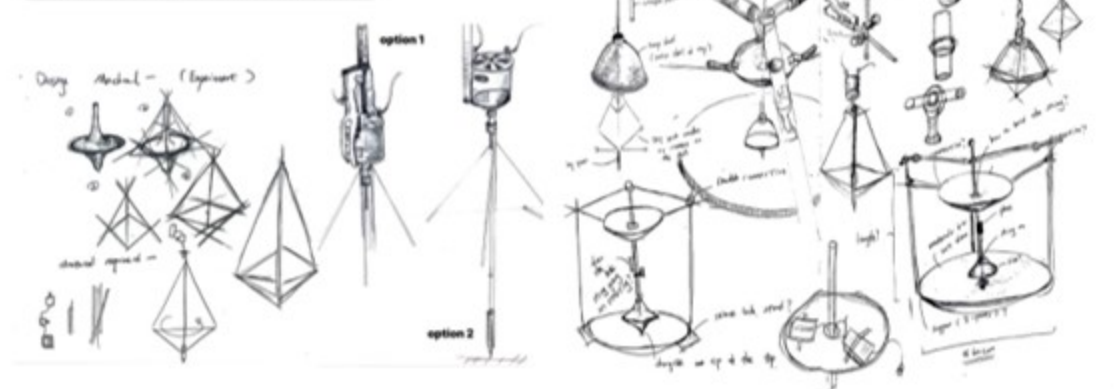




Applicant: now in Year 2

Applicant: now in Year 2

## Exploring Structure-

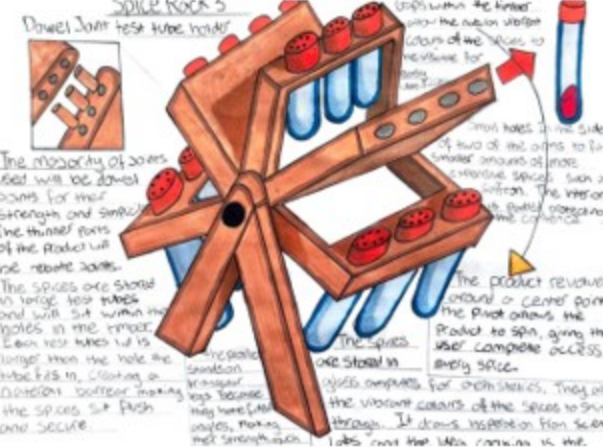


Applicant: now in Year 1

Applicant: now in Year 4

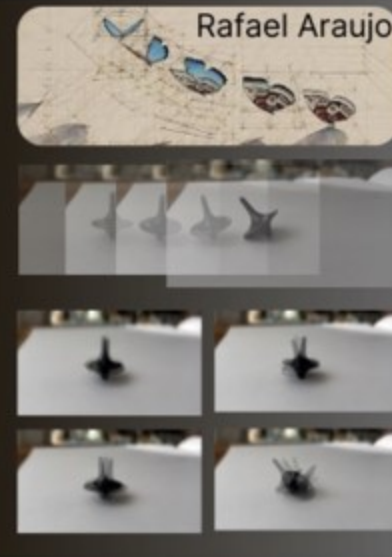


Applicant: now in Year 4

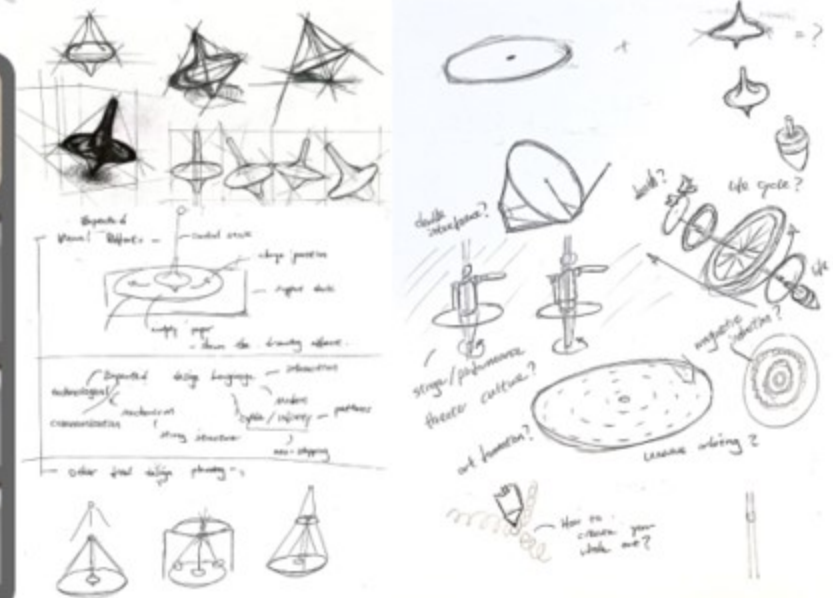


# BALANCE & CHAOS

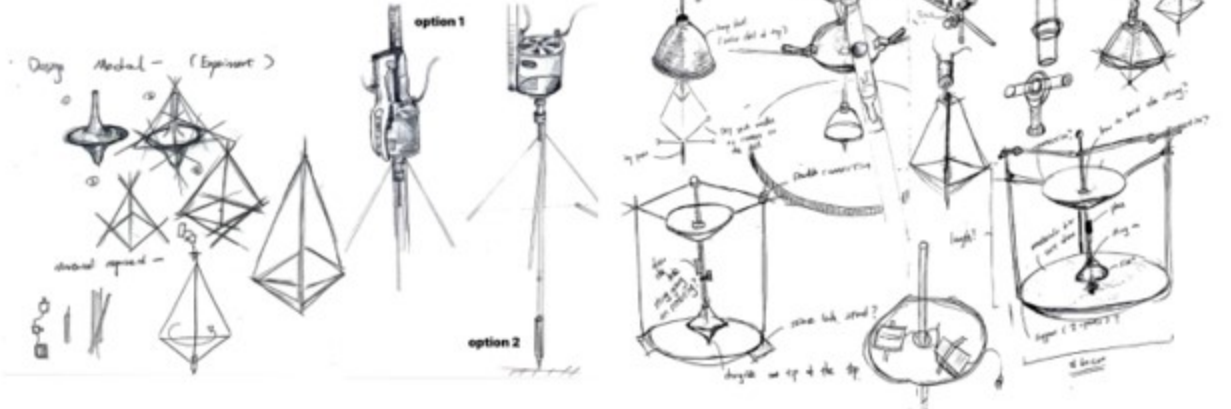
## Inspiration-



## Mindmap-



## Exploring Structure-



## Description-

When I playing spinning top as a hobby I was fascinated by it nature motion form balanced to unbalanced. This stage seem random, but it actually determine by multiple factors. One of the importance factor is the magnitude and direction of force from your hand acting on top's body. It could be completely different patterns when human is involved comprise to it naturally spinning on itself.

## Pre-Experiment-



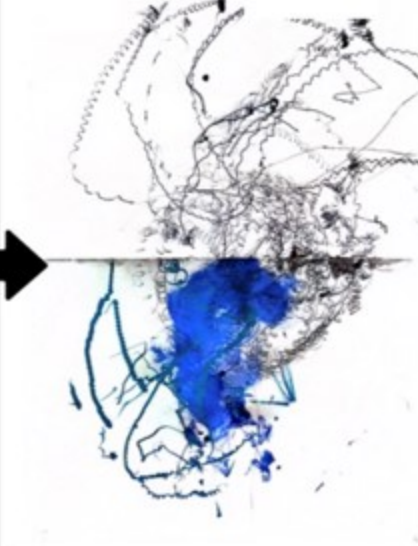
### 1. Effect-



## 1st Trial-



### 2. Effect-

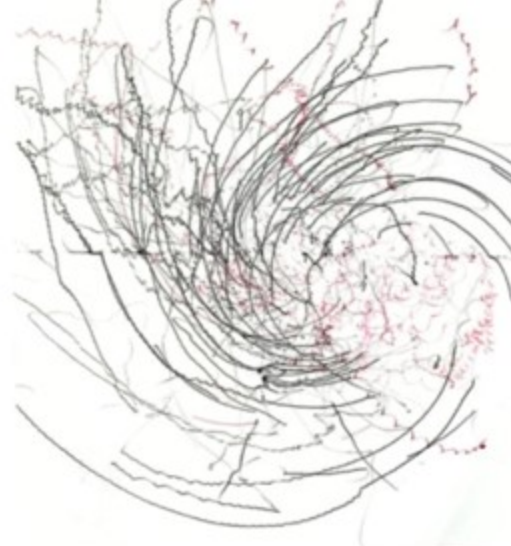


## 2nd Trial- (update x2)

### upgrading support structure-



### 3. Effect-

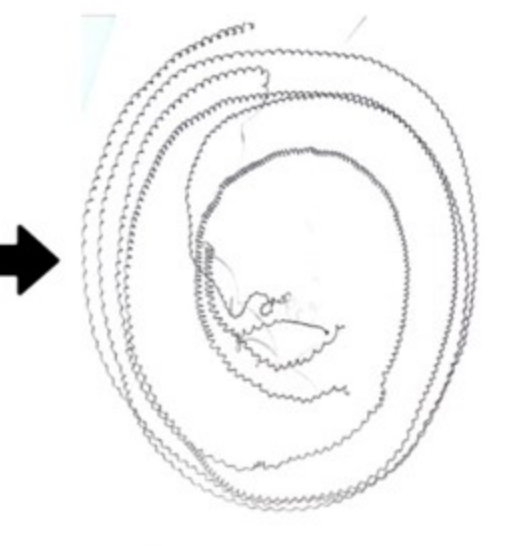


## 3rd Trial- (update x3)

### upgrading top structure-

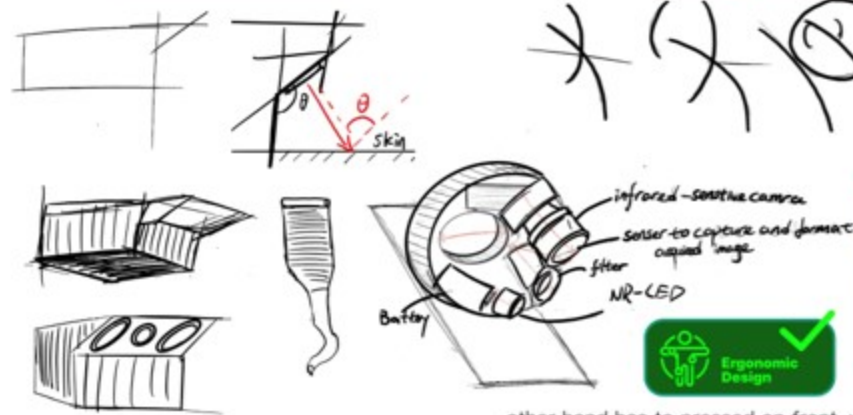


### 4. Effect-



## 2D/3D EXPLORATION

### Wristband



#### thickness control

thickness get low:  
angle are get too large  
some parts not able to fit in

can I increase the  
thickness?

new problems:  
difficult to wear

screen is vibrating  
as patient's body is shaking



### Fingerstall



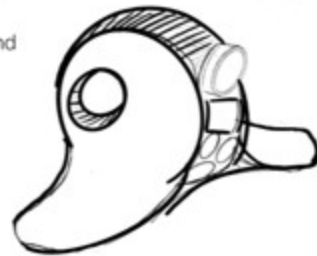
other hand has to pressed on front-wise of injection region

Can I design my product through  
learning the hand gesture?

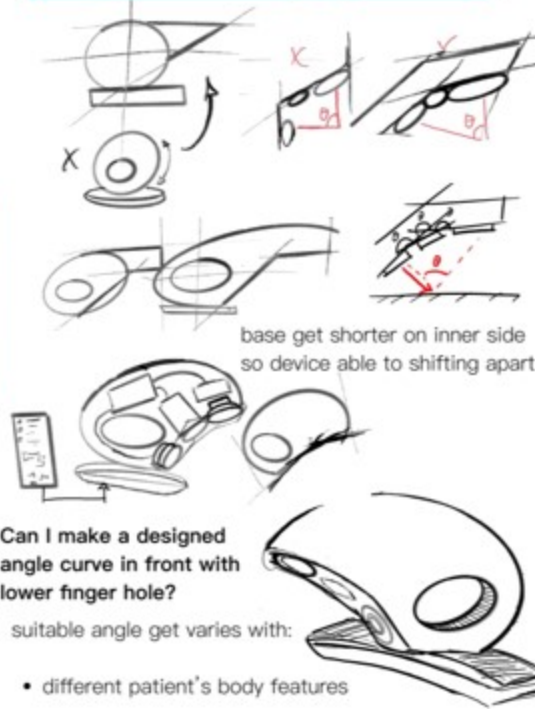
distance between thumb and  
finger get too large

affecting normal gesture  
position of device blocked  
the direction of needle

rounded shape not able to  
get a ideal angle



### Fingerstall(upgraded)



base get shorter on inner side  
so device able to shifting apart

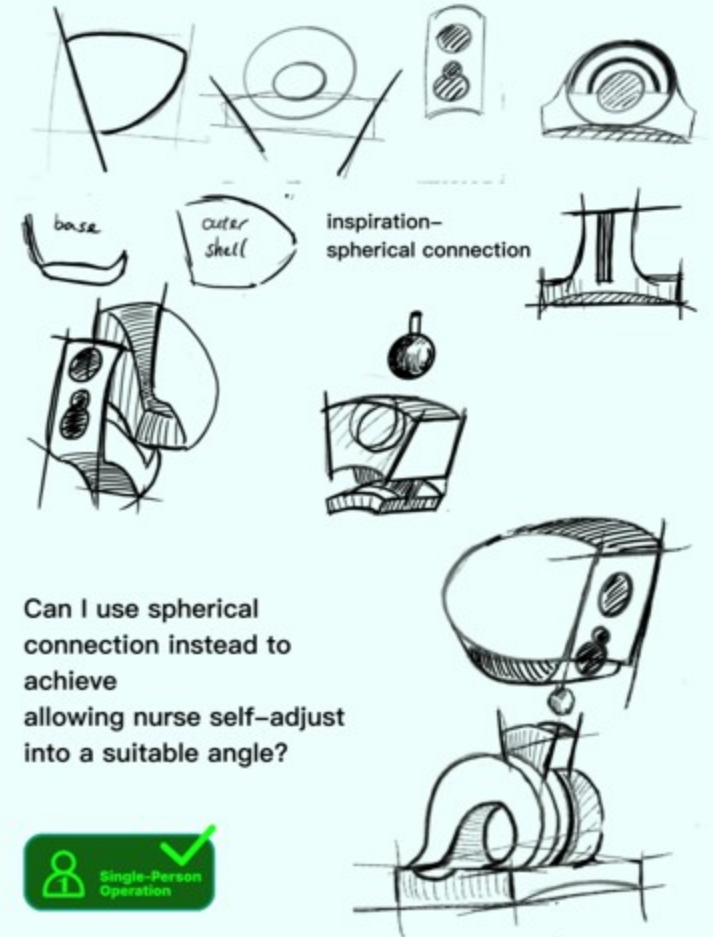
Can I make a designed  
angle curve in front with  
lower finger hole?

suitable angle get varies with:

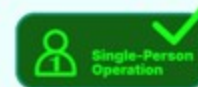
- different patient's body features
- different nurse's occupational habit

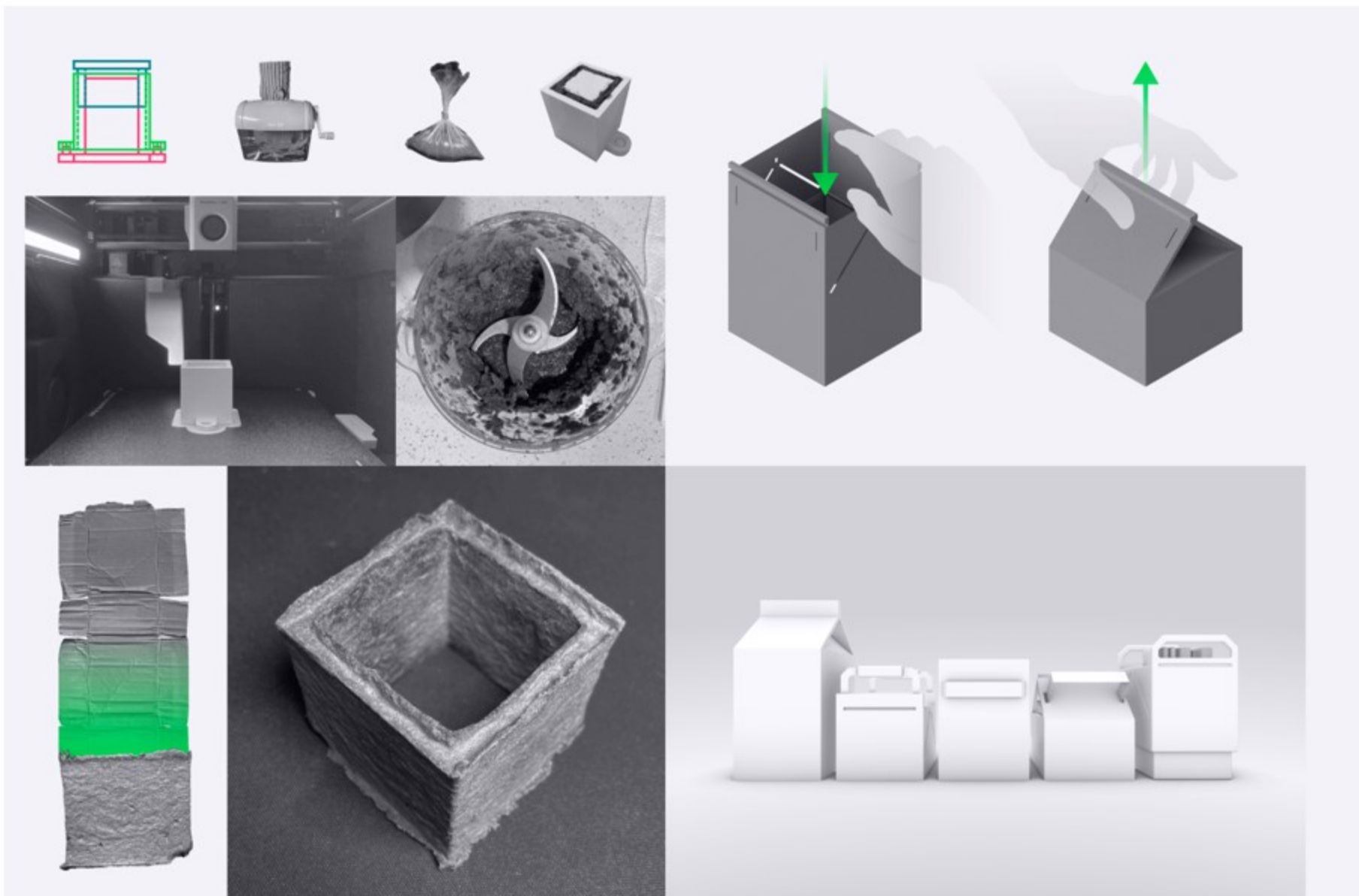
A finger hole affect the space for parts to filling in

### Fingerstall with Spherical Connection (FINAL PLAN)



Can I use spherical  
connection instead to  
achieve  
allowing nurse self-adjust  
into a suitable angle?

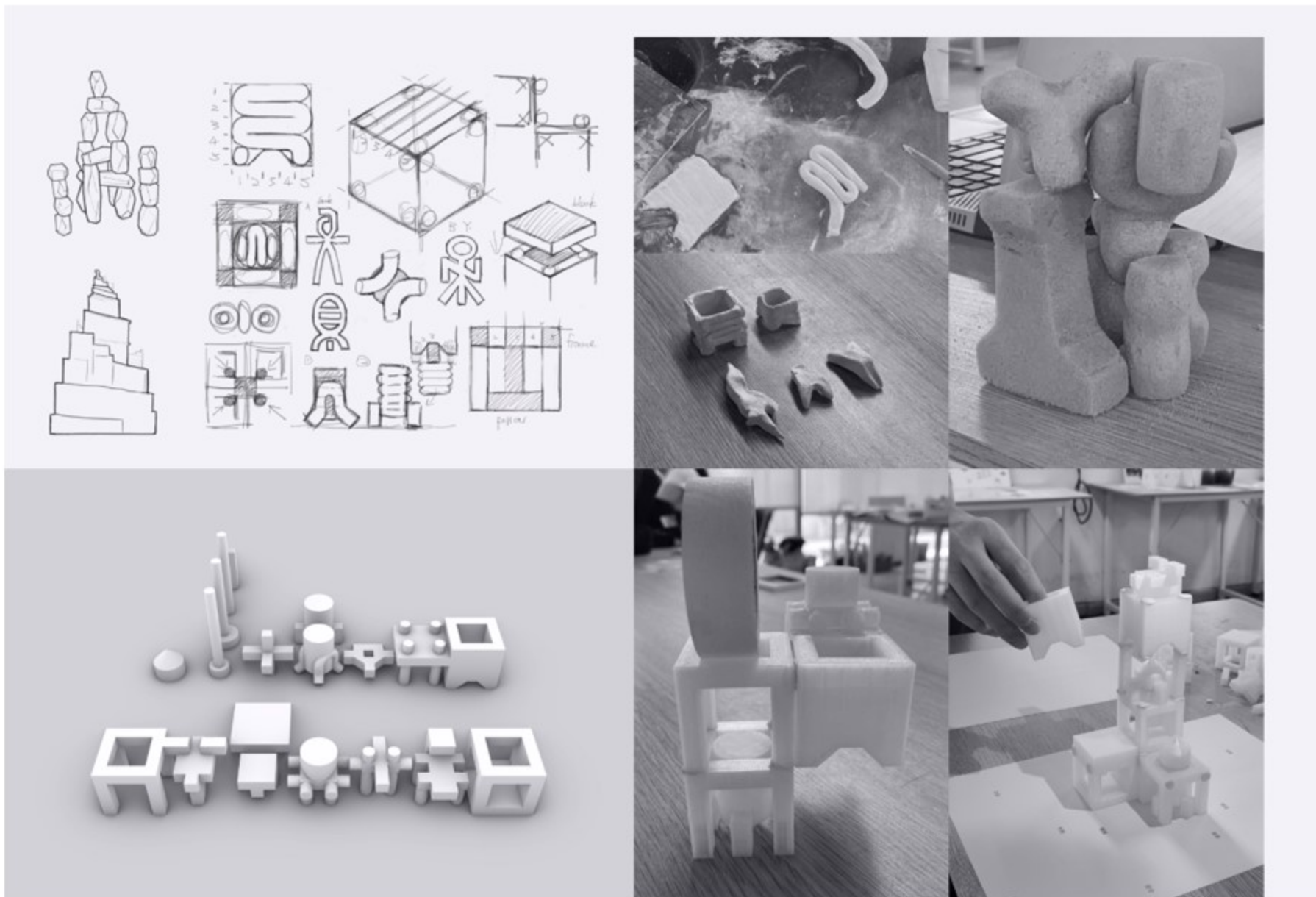




I was reading Manufacturing Processes for Design Professionals (Thompson, 2007) and decided to create a robust paper model using compression moulding at home as a low-impact material solution.

The mould has three sections: the press, the wall, and the base. They were separately printed using an FDM 3D printer with different infill and PETG. Initially, SLA 3D printing was attempted but it resulted in inaccurate gaps between components.

I used my paper shredder to shred leftover cardboard from my deliveries. I tried making rice glue from overnight congee but it failed, so I switched to corn glue. I used a meat grinder to mix them. The paper pulp was then compressed and naturally dried. The result is a compact material used in products or packaging.



Inspired by the simplicity of Balancing Blocks, a toy in which children stack geometric blocks and prevent them from collapsing. We envisioned each building block symbolizing conversations, representing how words can strengthen or weaken communication by building a tower. Our thoughts were immediately drawn to the Tower of Babel myth, chosen as a theme. These towers act as trophies, motivating family members to continue playing.

To conceptualize tower blocks, we explored ideas like organic shapes and armour units which are stackable stone blocks by the ocean. We experimented with foam, air-hardening clay, and 3D printing to create a large collection of varied blocks.

Clay is commonly used in early education and is familiar to children. This medium is used to give a detailed reference of texture for digital sculpting for the final work

# — Recycled Armchair Project —

**Step 1:** Making the pillow and seat with bubble wrap and denim, to try and have comfort



**Step 2:** Making the base with layers of cardboard, with more to cardboard to smoothen the edges

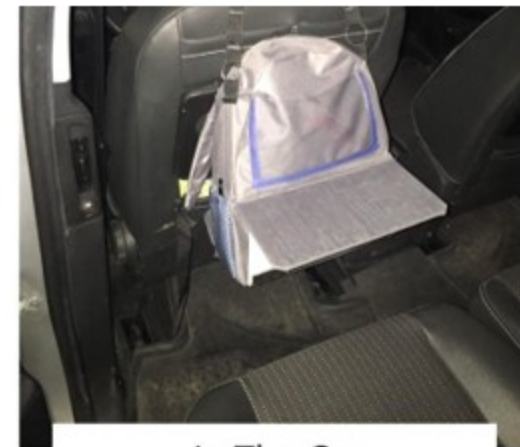
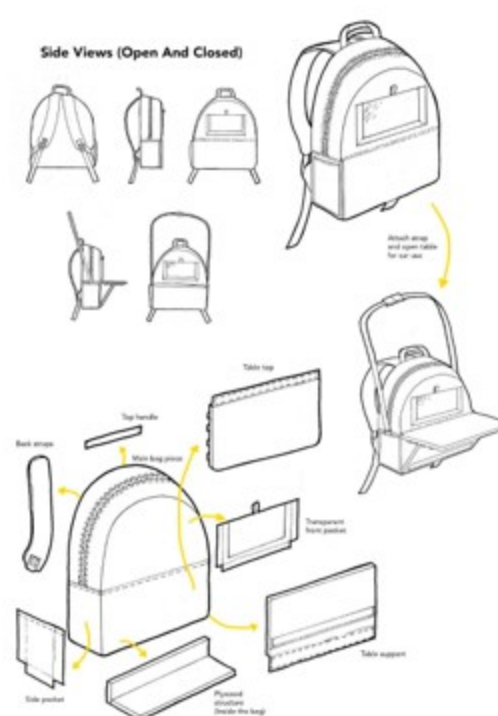
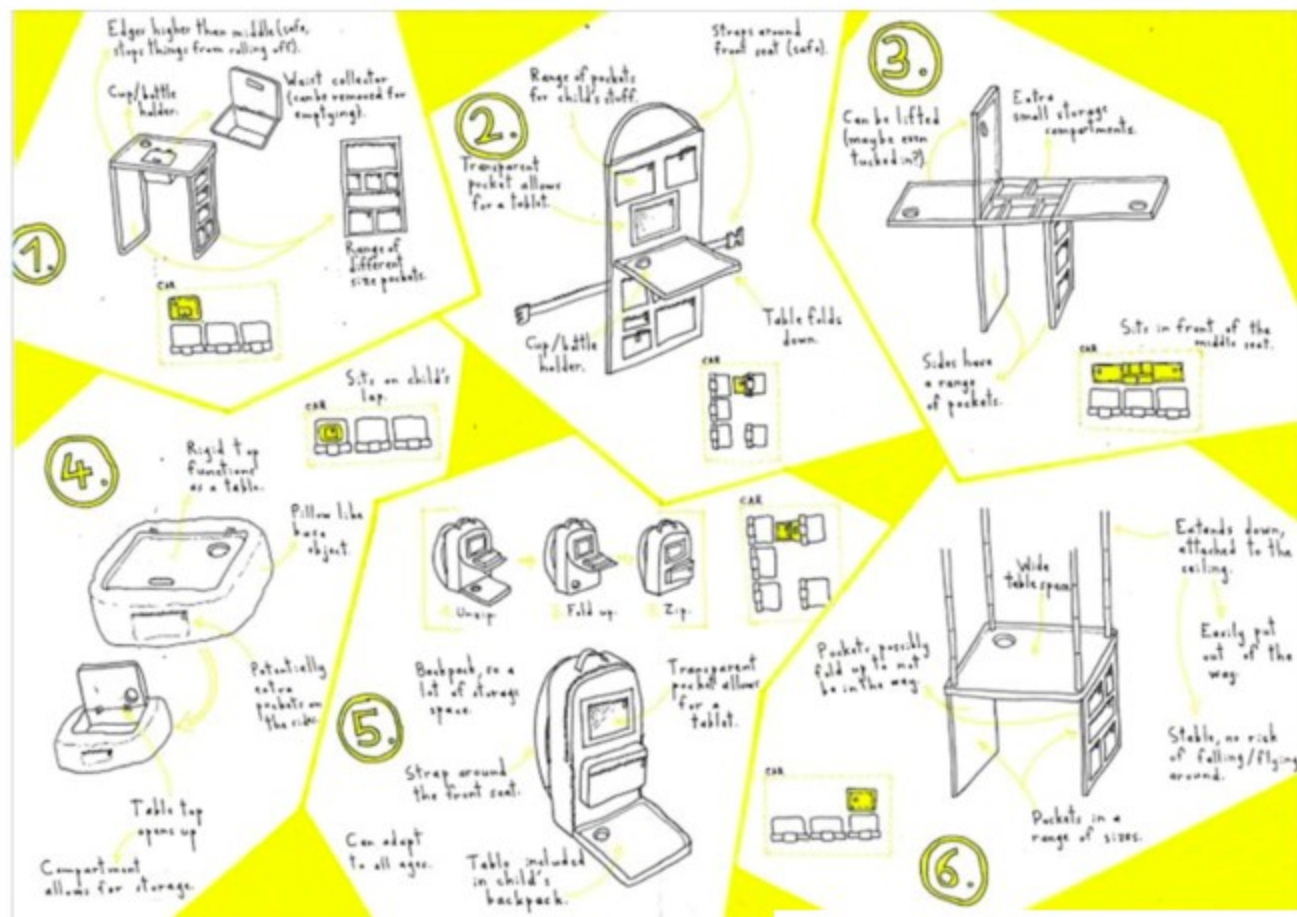


**Step 3:** Colorful collage time!



**Step 4:** Per usual, cleaning up the mess from my over excitement as usual



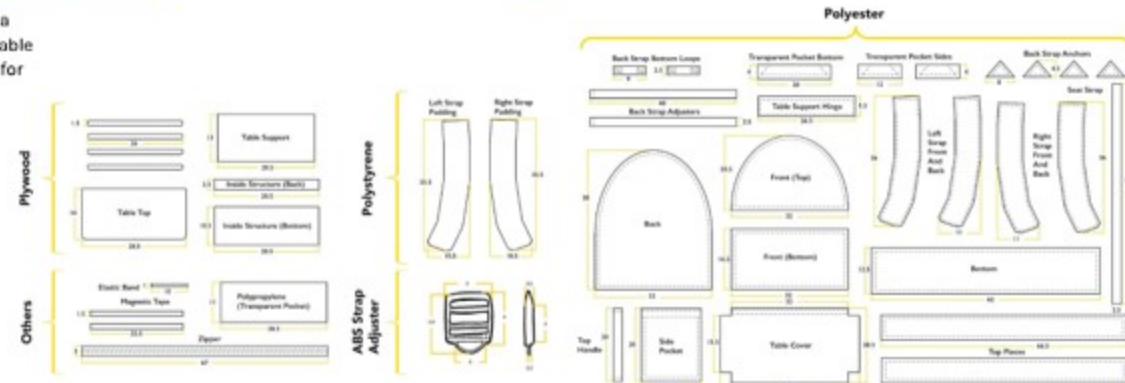


In The Car



Backpack with an unfoldable table and a transparent pocket for children to use in the car.

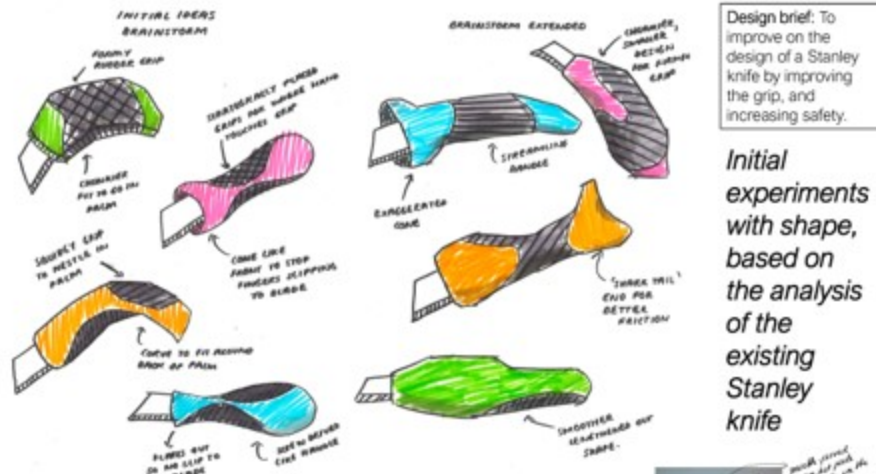
Initial idea planning for a product that serves as table and organisation space for kids in the car.



Backpack Mode (Closed)



Car Mode (Open)



To begin I identified some **design flaws** of my existing Stanley knife. I noted how it is streamlined and visually pleasing, however in practical use I found some 'pain points':

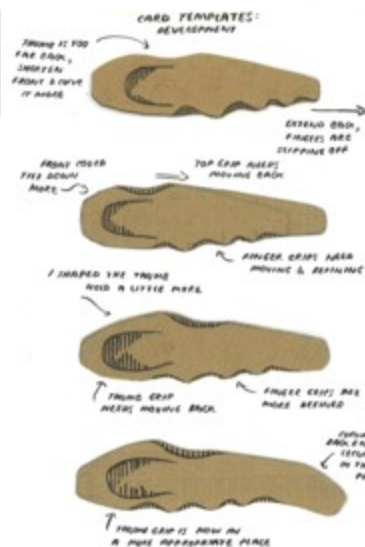
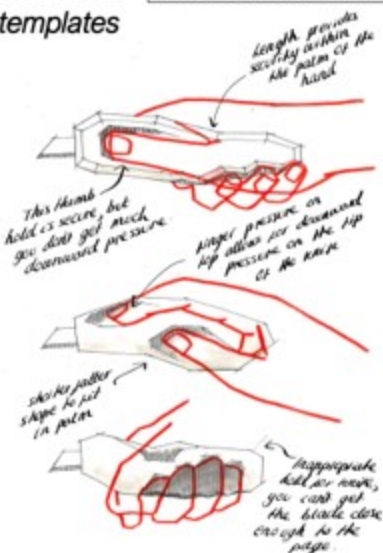
- Too heavy
- Unused clip
- Too thin (uncomfortable)
- No proper grip

I began brainstorming by sketching out a variety of ideas for my knife. From my observations I knew I wanted to change the shape of the to better fit the hand and protect the fingers. I experimented with the placement of contours, curve of the handle and the positioning between the fingers and the blade.



*Analysis continued: cardboard templates*

After looking at different types of grip I drew up the general shapes of each grip as a handle. I prefer the top design best as I think it allows for the sturdiest hold and also has an elegant sloping shape to fit the palm.



I made a series of four cardboard templates (to scale) based on my favored design. Having the physical cardboard meant I could hold the templates and make adjustments to the fit. In each cut out I further refined the features until I came to a shape I was generally happy with.

After drawing up ideas for the shape of the design, I did some research into the grip, as the shape of the knife grip would determine how tightly and safely the user can hold the knife.

So I could try out grips, and visibly see the shapes created by the hold I made some salt dough and squeezed it into various hand holds. As it held its shape, I was able to observe the contours that a human hand made. I tried out different grips to see which was best suitable.

*Initial experiments with shape, based on the analysis of the existing Stanley knife*



### Analysis of and research on grip holds and form



Right: Gaudi's doorknobs and handles, designed 1902

I started by creating the black foam prototype: The placement of the finger grooves was generally okay, but I wanted to make a few adjustments. I also found I was wrong in the assumption that having thick width would make the grip better: I found 3.5cm to be too thick meaning the fingers couldn't properly wrap around for support.

Foam  
prototype  
work

To improve I made a new blue foam prototype that was thinner widthways, and I improved the finger grooves. I was really happy with the grip, but I think the size could do with enlarging as a hole to fit more hands.

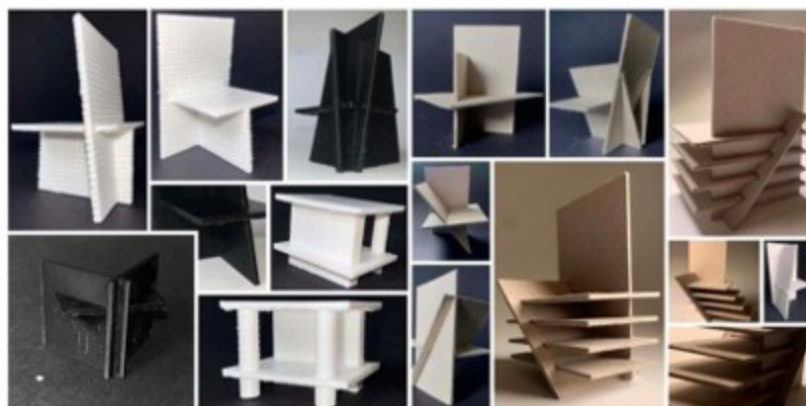


To inform my prototyping I mapped out the general 3D shape by drawing a more detailed design of the knife. I drew it from various angles to account for the variety of curves and contours the knife was going to have. I observed my salt dough moulds to find the placement of grooves.

### 1/5 Scale BBQ Model



I am in the process of designing and producing a sculptural BBQ for my 3D Design A Level Course. I scaled down my Fusion 360 model to a 1/5 ratio. Using a scale model made of acrylic 1mm deep and I was able to achieve a polished concrete finish, I used small wire mesh to create the needed structure support. I used a 3mm aluminium sheet and a 10mm piece of plywood. I laser cut out the the battening out of plywood and finished all the plywood with a dark stain. I used small metal bars and snipped them to the correct angle and length for the metal batons.



### 3D Printed Models and Card Models

As development and discovery of form I used my Fusion 360 models and exported my files to be able to 3D print them. The 3D models were a simple way to see the Fusion 360 models in proportion. I then went onto develop these forms further through the use of card to create a series of models. This led to the development of card models and Fusion 360 models into the 1/5 scale model. I created several card models experimenting with the joints.



One of the Designers I have been influenced by is Boris Tellegen, particularly his precise modern forms. These forms and designs have influenced my concrete experimentations. As a result of these models I created the impression of decay and natural regrowth. This shows a natural process of decay similar to that seen when objects are left to weather in the elements. This demonstrates the need for structural integrity when building large scale structures.

### Boris Tellegen Response