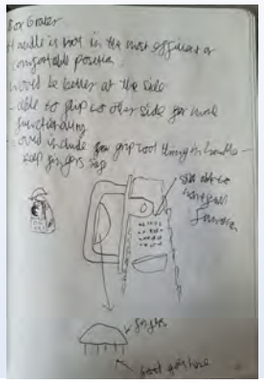
Design Portfolio

Contents:



Box Grater – existing products analysis.

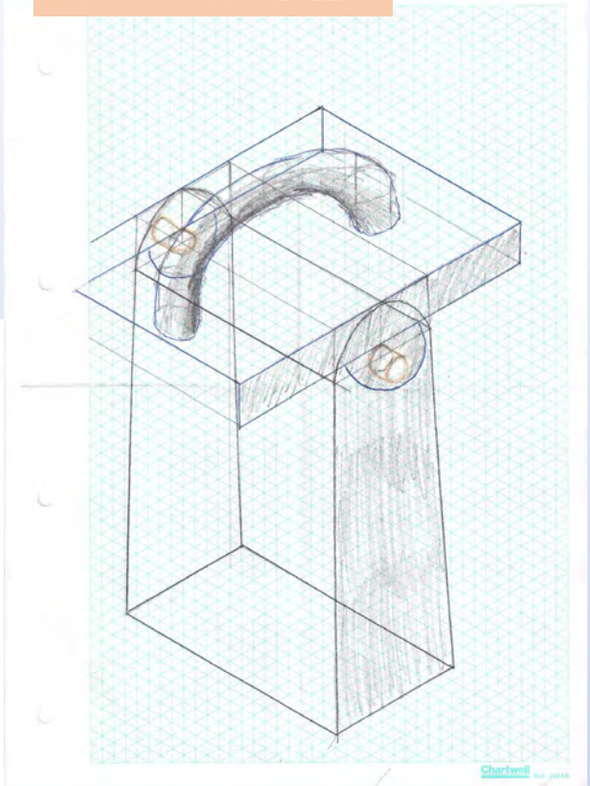
Many graters especially older and cheaper ones come with a simple metal handle – this handle is thin and very uncomfortable as it can dig into the hand during use. However it does save on material costs – when balanced out though the extra cost is likely worthwhile.

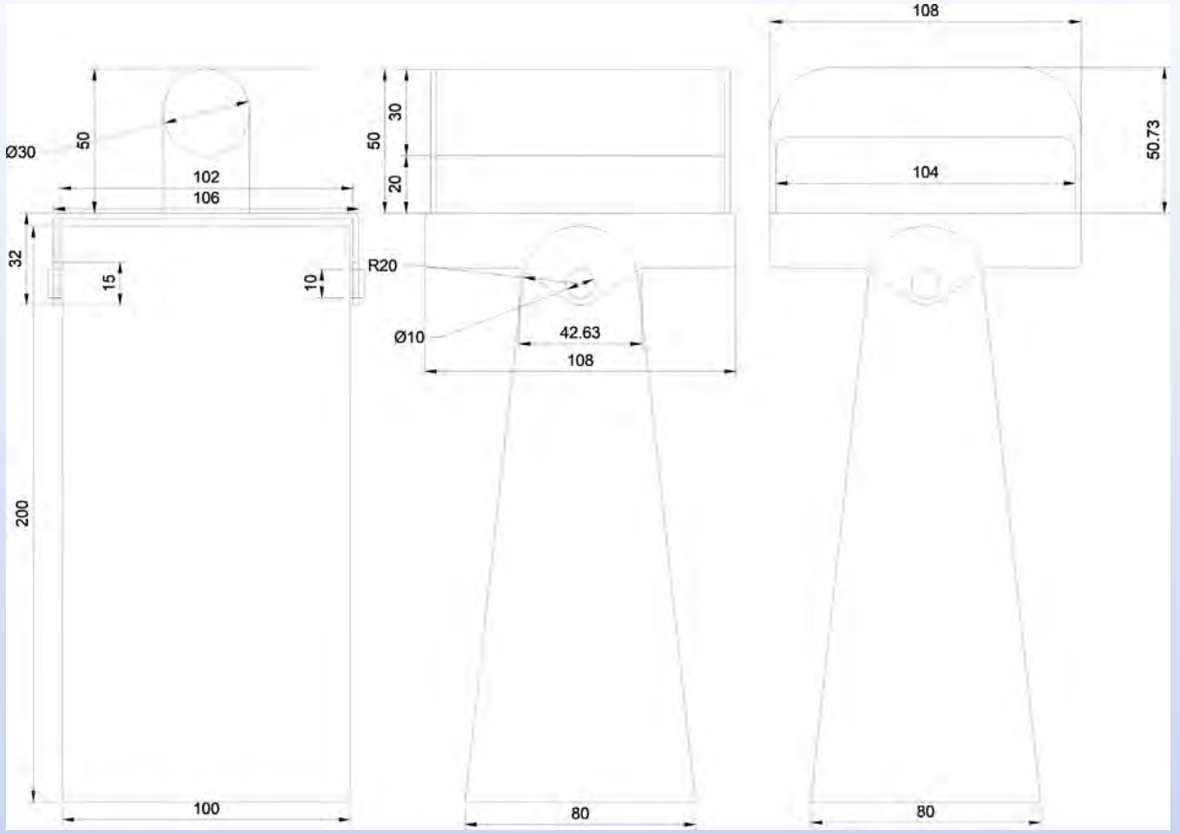
The OXO grater improves on the classic design and includes several design choices I would like to include. The large handle is undoubtably more comfortable so I will make sure mine is as well. The grater also has rubber feet which help with stability this is a good design choice.

The side panels of the grater are very rarely used and do not require a large surface area – there would not be a functionality loss from using some of the sides for the handle mechanism.

The problem I have identified is that the current grip position of graters may not be optimal. In this image it can be seen that the hand on the grip is strained. It is my understanding that a grip on the side may allow for a more relaxed operation.

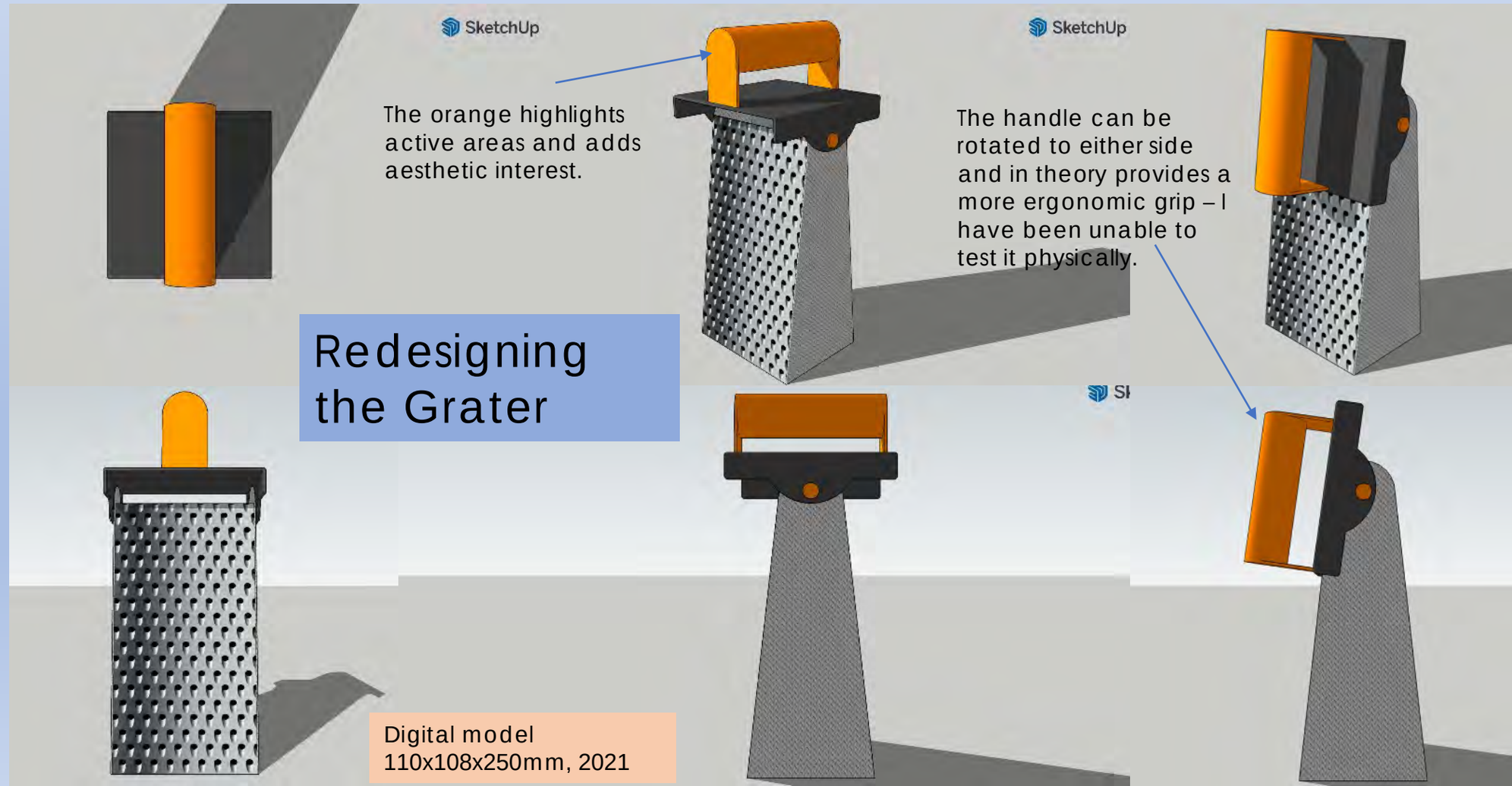
Sketch on A4 - 2021





I needed more design work for my portfolio so in the lead up to Christmas I asked my family for design problems they had that I could try and solve. My mum proposed that box graters could be more ergonomic. I began by taking notes and observations about the problem and drawing some basic sketches of ideas. I also conducted some research of existing products. I then drew a nicer isometric mock-up before moving into 2D Design to create a working design. Using the measurements from 2D Design I created a full 3D model in SketchUp. I have considered a couple of designs for the handle and concluded that a curved one was quite awkward to produce. I would like to experiment further with incorporating some sort of protection for your fingers. Additionally, it would be nice to create a physical prototype. I have used minimalist colours inspired by early Braun and Dyson designs.

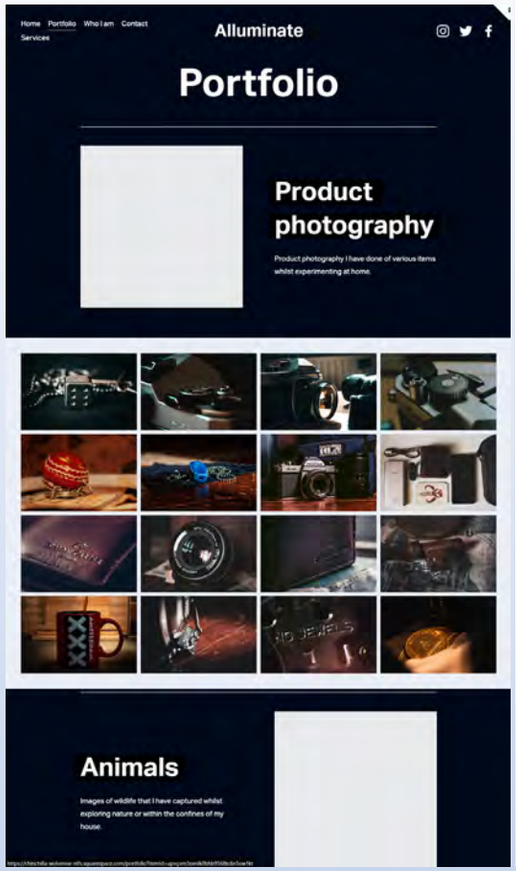
Redesigning the Grater

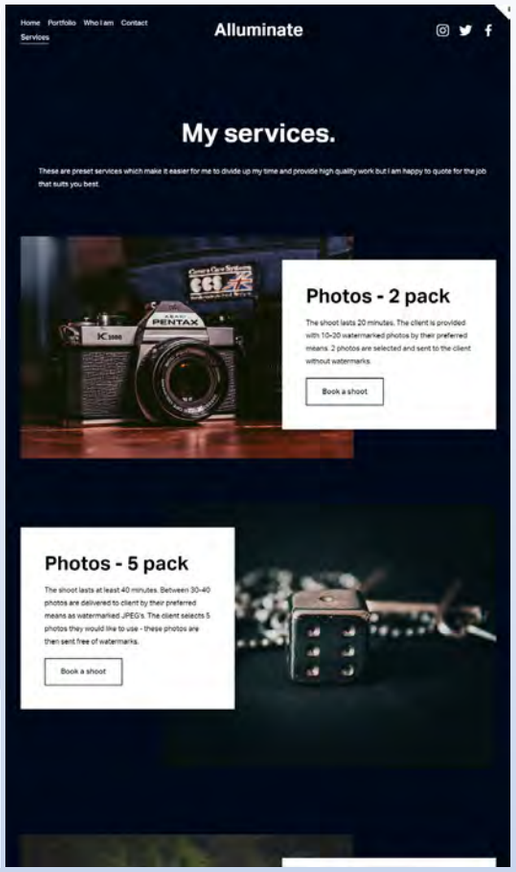


Digital model
110x108x250mm, 2021

Other Design Work

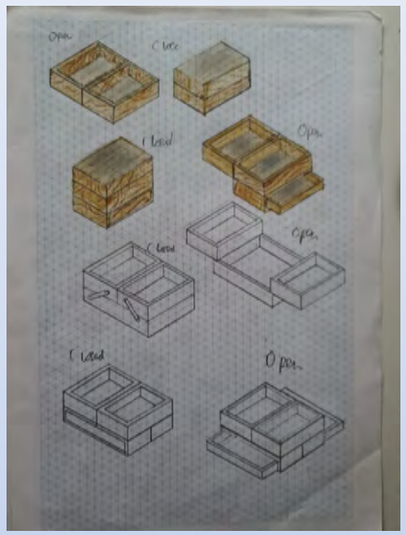
I have also completed several other design tasks both at home and in school.





During the first lockdown I decided to try and make some money from my photography so I created a website. I designed it to be quite minimalist and aesthetically consistent.

Wood and plastic, 24x24x9cm 2017

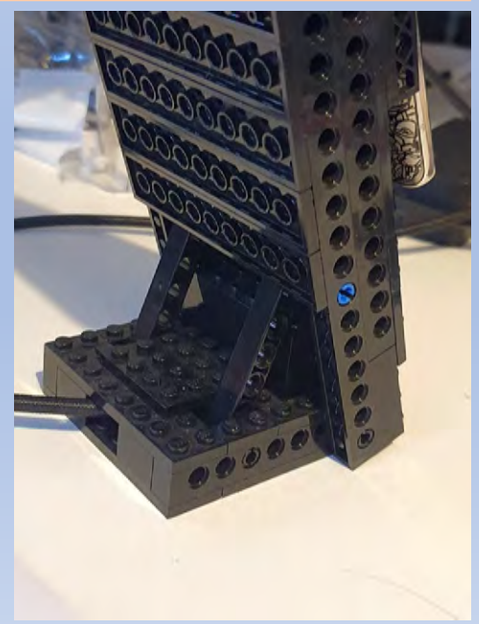


One of the projects that we did in school was to create desk tidies. I never had time to finish mine however it has had a permanent place in my room since and is very useful.

When I nearly lost my camera after getting caught in a storm I decided to make myself a waterproof cover using yogurt pots and freezer bags. My design doesn't hinder my use of the camera and has served me well for nearly 3 years. Winter 2019

I was annoyed at my phone not sitting at a good angle on my desk and the cable trailing so made a stand out of Lego to hold my phone and cable in place.

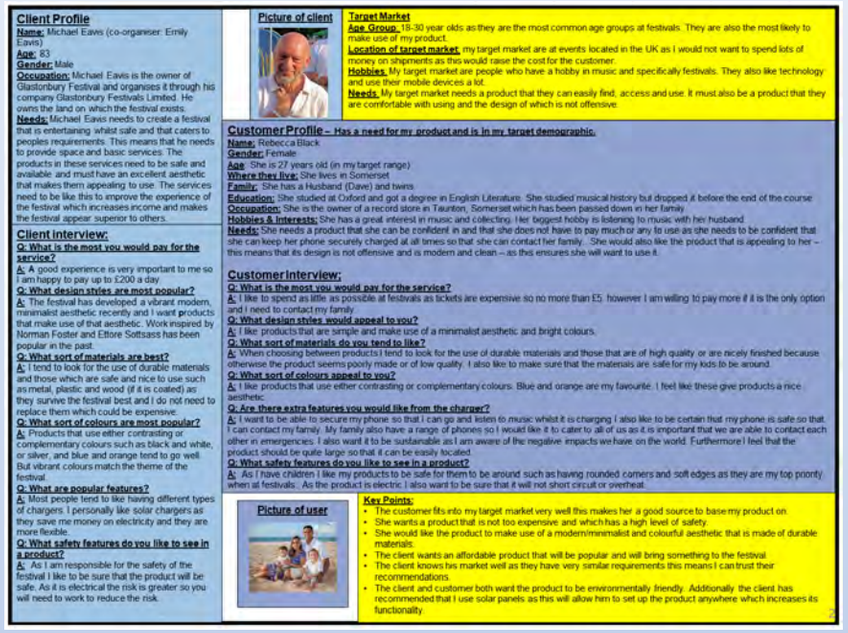
Lego, holds phones up to 7.5cm wide, 2019

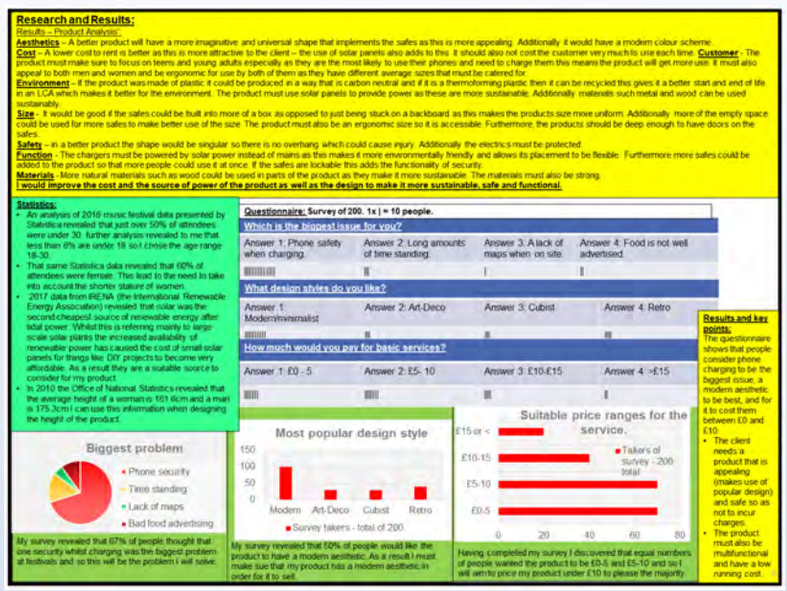


GCSE DT – Exploring The Problem

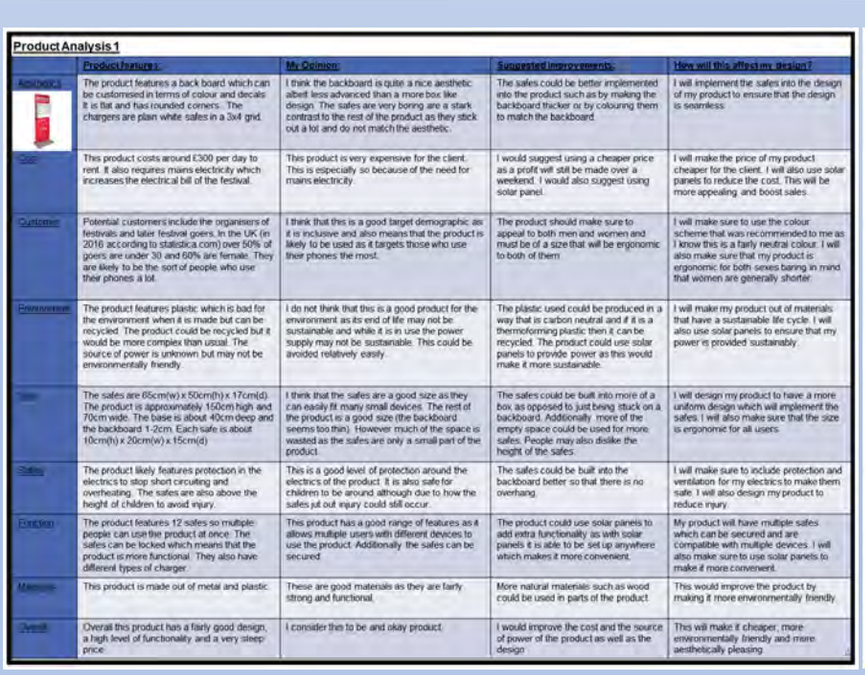
August 2019 – September 2019
Slide pages are A3

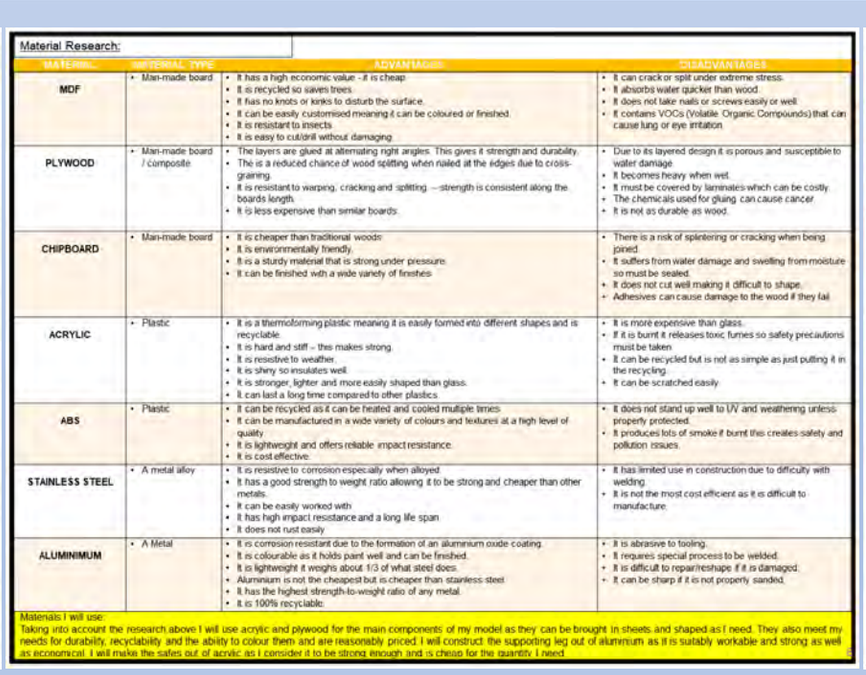
For GCSE DT we were given the task of solving a problem at a 'high profile activity or occasion'. I undertook in-depth research into the task in order to start the project. I began with a task analysis identifying and expanding on two key problems (phone charging & seating).





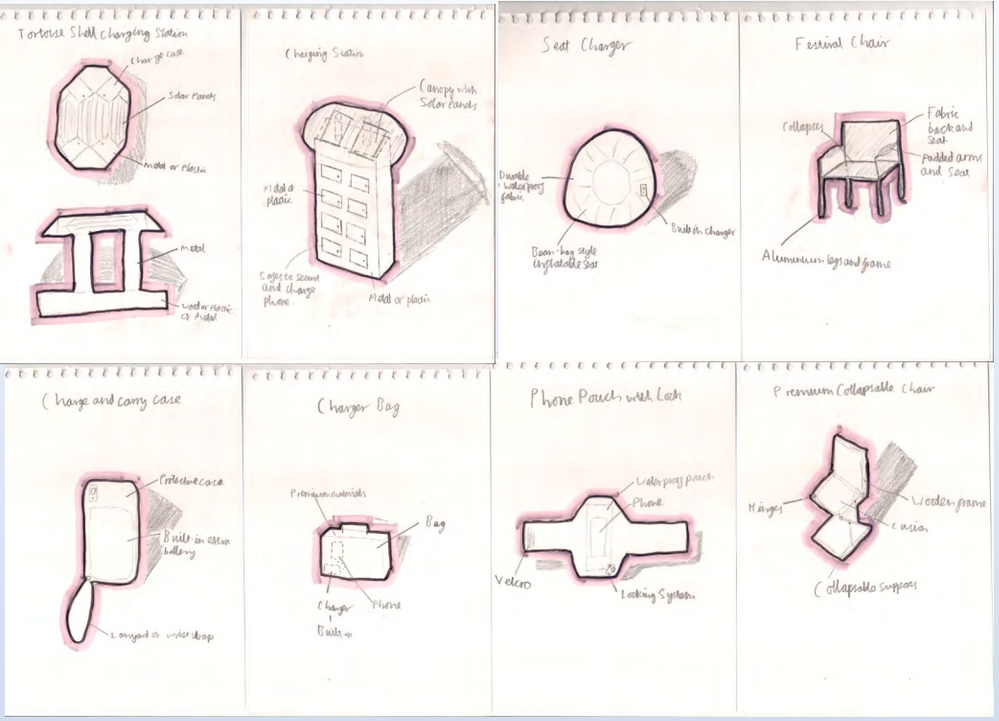
Having identified the problems I then researched them further, creating client and consumer profiles and identifying specific needs and wants to hone my specification as well as producing some mood boards. This led me to focus on phone charging.

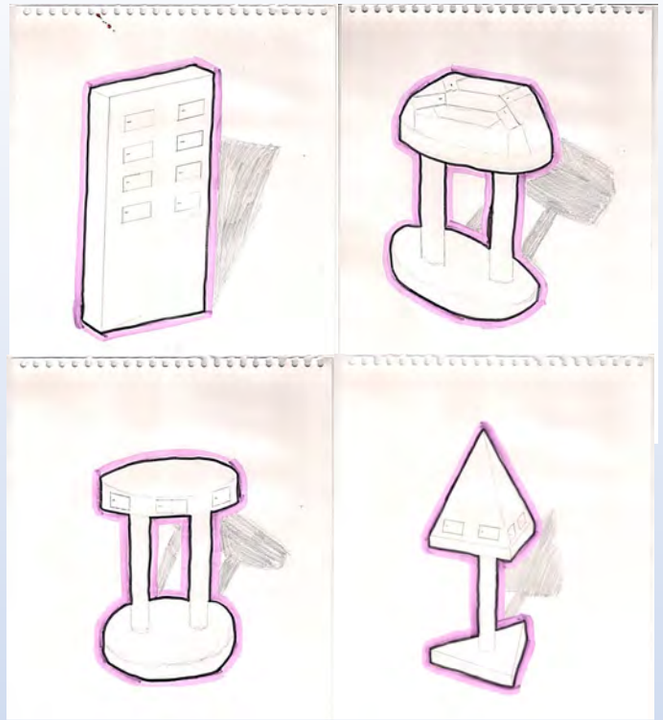


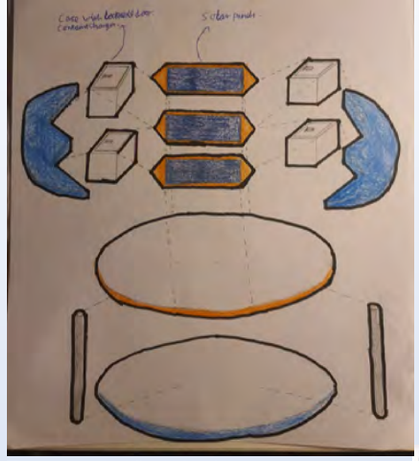


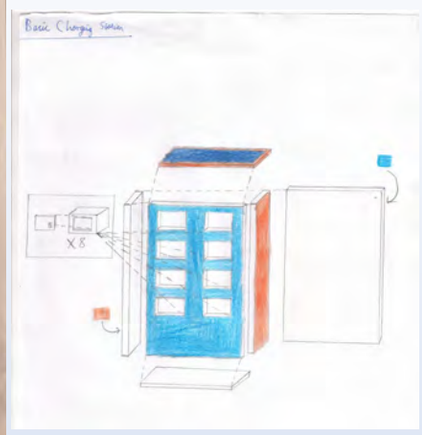
I then analysed (in-depth) existing products that attempted to solve my problem using the ACCESSFM formula to ensure I covered all aspects. I also completed material research of appropriate materials for my product before creating a design specification once again using ACCESSFM.

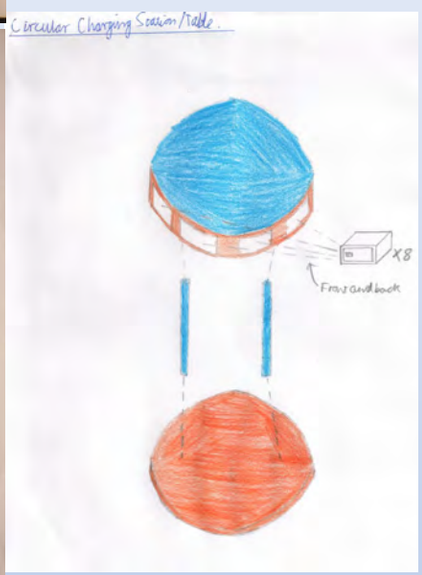
Due to the nature of the school environment the research conducted was staged and meant that I was not able to respond to new problems which would have been nicer. It also meant that any assessment was very subjective.



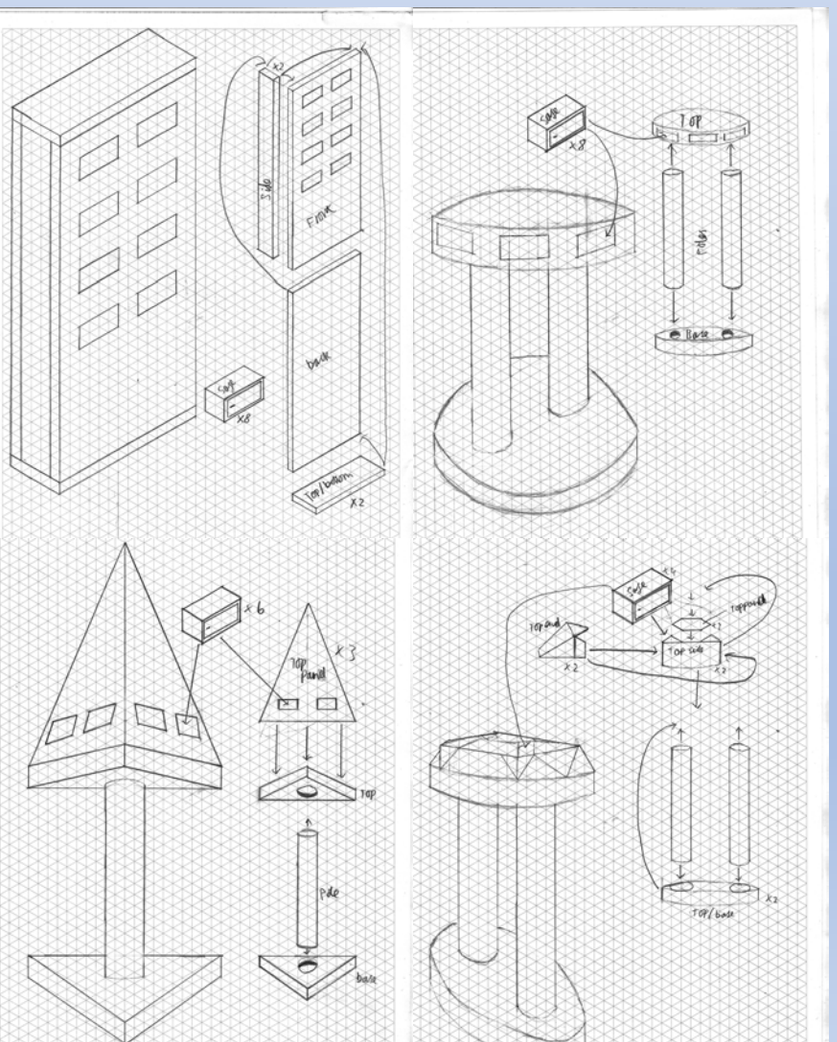






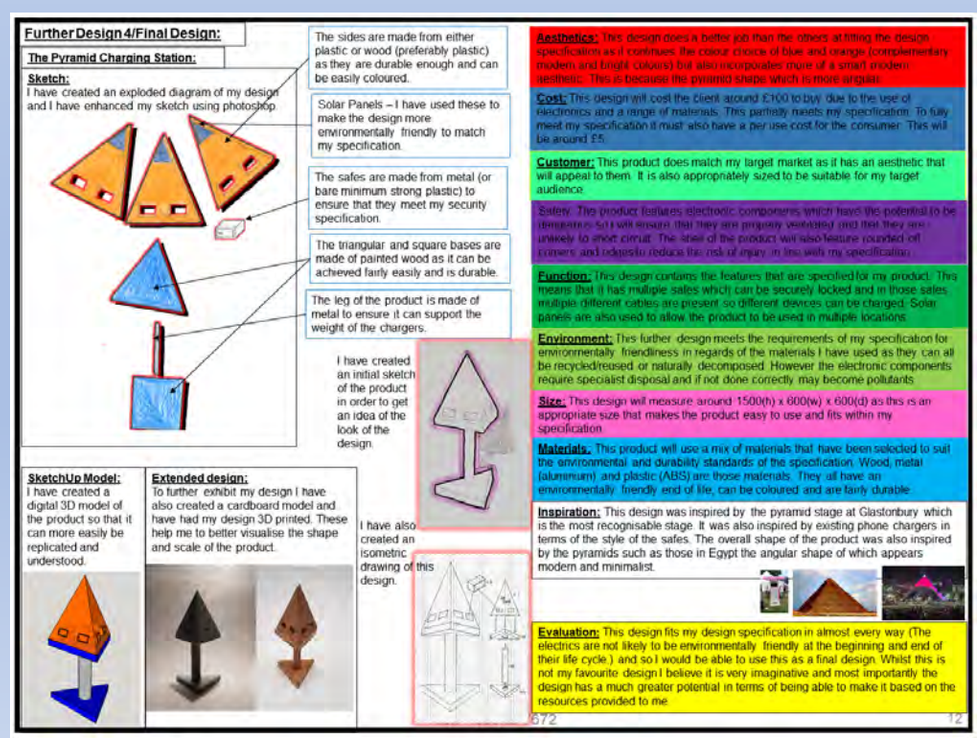


Initial sketches are A5 all others are A4. Completed between September and November 2019.



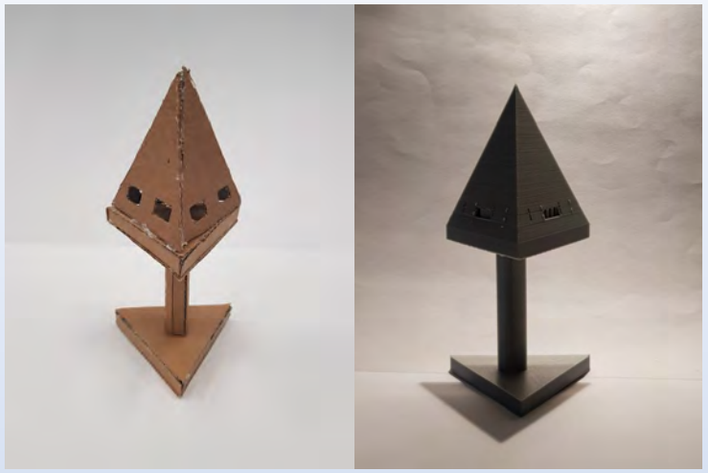
GCSE DT - Designing

Once I had identified a problem – how to safely charge your phone at events such as music festivals - I began to create some initial ideas (top left) of phone charging solutions. I produced these drawings rapidly and on a small scale. Following further research I identified a specific type of product and drew up 4 ideas as sketches (above). For each of these ideas I also drew isometric drawings of the product both exploded and constructed (left) as well as exploded sketches in the colour scheme I had chosen (top right). For each idea I produced a full evaluation and annotated the exploded sketches which I added graphic techniques to using photoshop. I also used SketchUp to make basic 3D models of my 4 ideas. After this I decided on my favourite design the pyramid/triangle shaped design.



GCSE DT Production

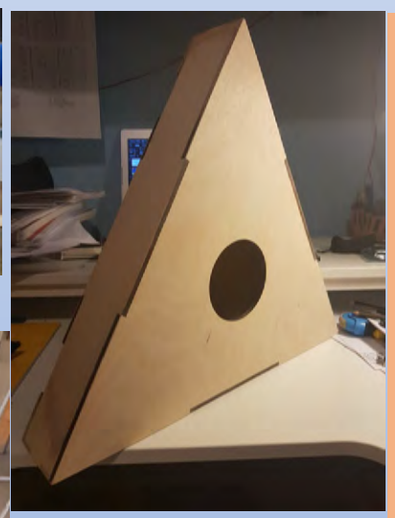
Final Piece is approx. 180cm(h)x50cm(w/d). Mixed Materials. Completed over around 4 months in 2019/20



At the beginning of creating my charging station I created a cardboard model and 3D printed my digital mock-up to begin to get an idea of physical aspects of the design. The models are approximately 1:10 scale.

My product consisted of three main components – the plywood blue triangular prisms that form the base along the aluminium tube as well as the acrylic pyramid at the top and then the acrylic safes where the phones go. Each presented its own unique challenges and really tested my ability. By the end of the production I had used basically every tool and machine in the department and made use of a wide range of processes.

My most important takeaway was a recognition that I should take the early stages of design more slowly so I don't need to make lots of changes later.



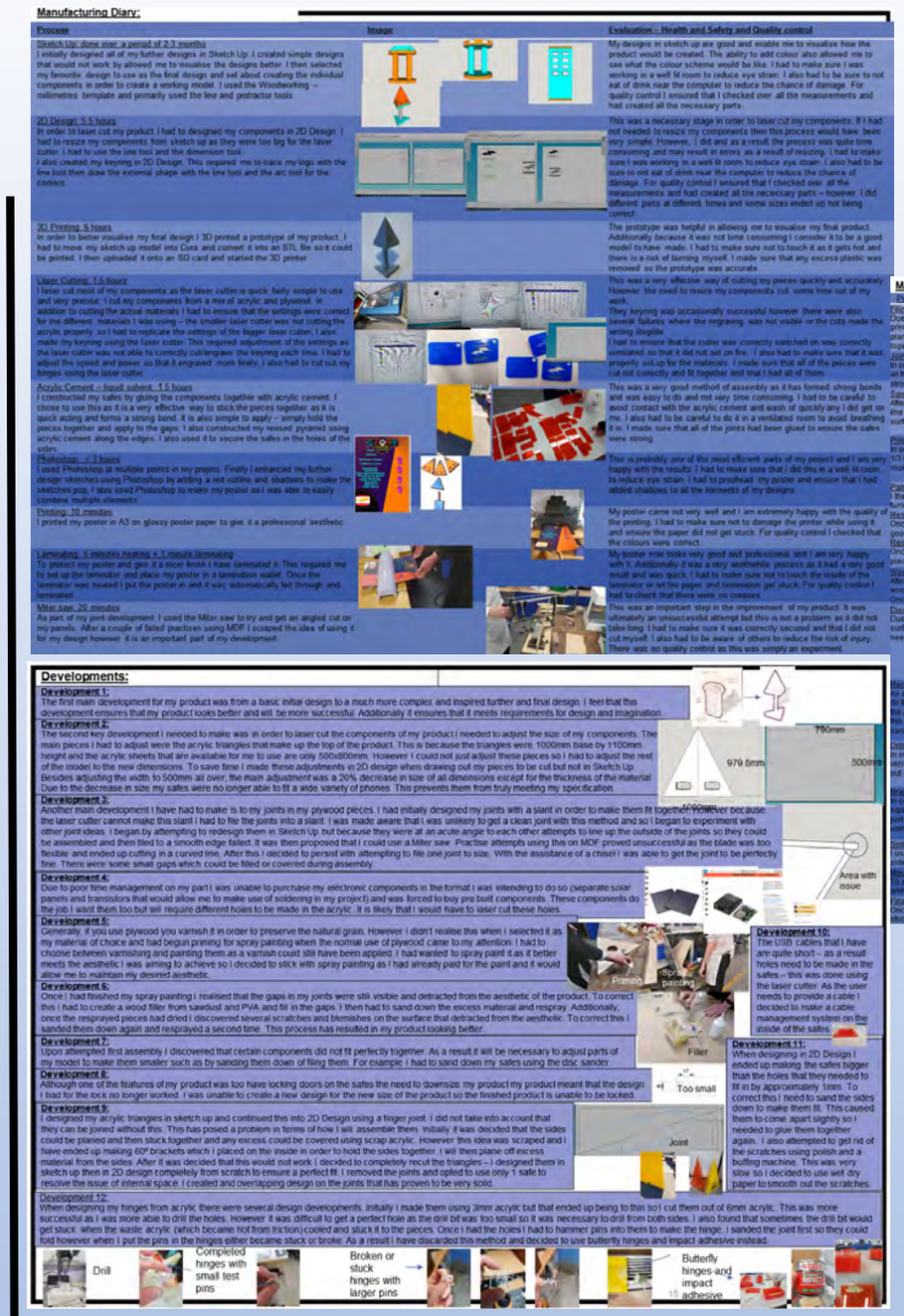
The biggest challenge with the plywood triangles was finding a way to physically produce the corner joints which I had easily created in SketchUp. I wasn't able to plane the wood due to the offset of the joints and the mitre saw was too flexible so I ended up chiselling the joints and filling any gaps with wood filler. I then spent a long time sanding the sides before spray painting them.

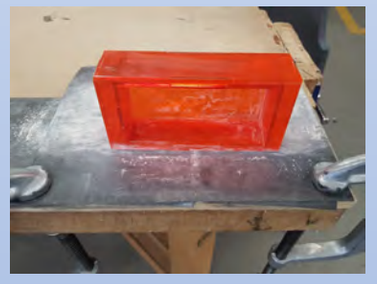
The large acrylic triangles that formed the top took a couple of attempts due to oversights on my part. Firstly in regards to how they would be joined which led to experiments with joints and internal connectors and secondly with number of safes I could include. Initially I designed it to fit 6 but didn't recognise that there wasn't enough internal space so had to halve it. I had to change them to yellow as we ran out of orange. Choosing a triangular pyramid was definitely a challenge but it has given me a lot of experience.

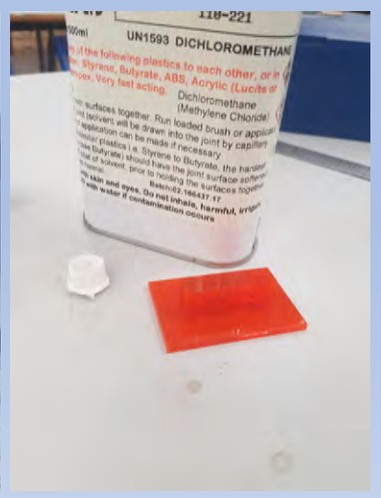
GCSE DT Production - Part 2

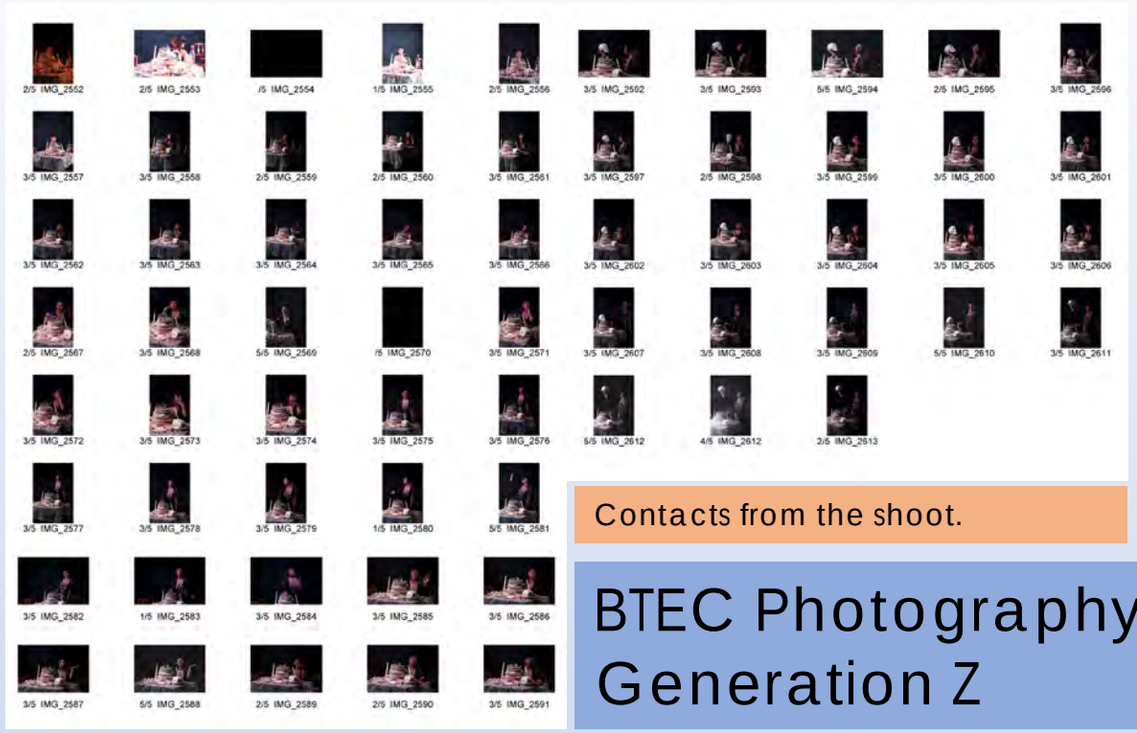
The safes that the phones would charge in were made of acrylic. One problem with the safes were the hinges. I initially wanted them to be made of acrylic however they were problematic and inconsistent to produce so I had to find an alternative solution using impact glue with butterfly hinges. The second issue was the size of the boxes. During the various reiterations of their digital design I ended up making them about 1mm too large for the gap they had to fit. I couldn't re cut so had to sand and polish them down; this caused them to lose some of their finish and strength however they did the job for the purpose of demonstration.

I recorded each stage as I went, producing a detailed production diary detailing changes and decisions as well as the various processes involved.





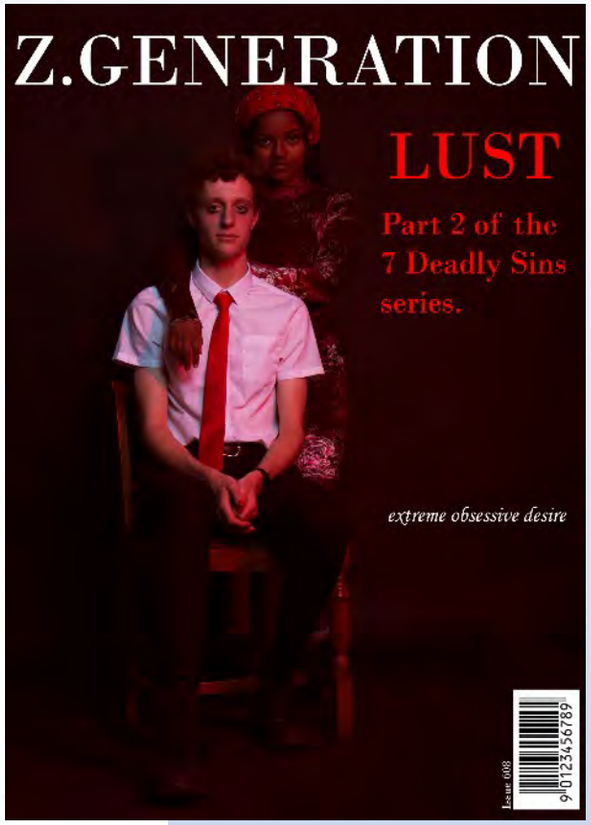




Contacts from the shoot.

BTEC Photography – Generation Z

The Generation Z project that we did in photography was one of my favourite projects. We decided as a group to focus on the 7 Deadly Sins and the relationship between them and our generation. We each selected a sin to photograph. A lot of time was spent brainstorming themes and ideas relating to the different sins and I enjoyed creating and experimenting with the elaborate set up in my shoot. I then took the photos from my shoot as well as the shoot I was in and created magazine covers from them.



Digital product, A4, Summer 2021

I took my own shoot further creating some more pages of the magazine including an extract of an article explaining the shoot.

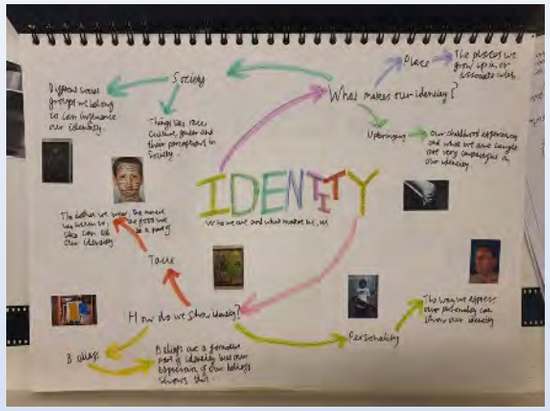
Generation Z and the 7 Deadly Sins

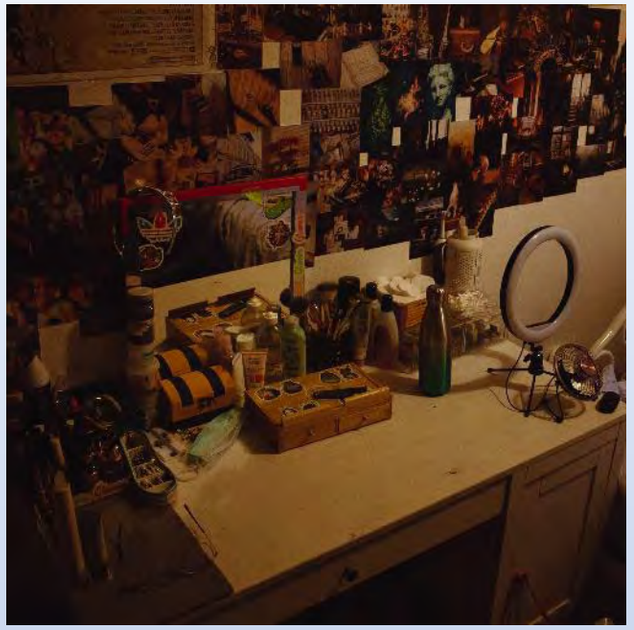
The youngest generation in our society Gen Z are often viewed negatively by their elders. Perhaps a result of their liberal views and a desire for change or for their heavy use of technology. Whatever the reason links are commonly drawn between Gen Z and the 7 Deadly Sins. This photo shoot aims to mock these ideas by placing Gen Z at the centre of conceptual images based around the 7 Deadly Sins.

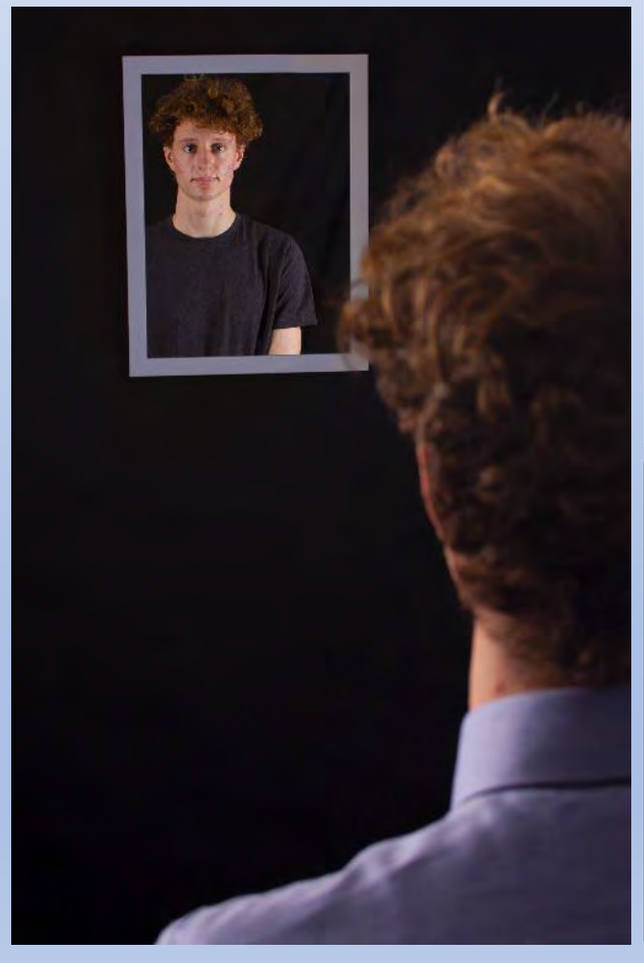
In part one of the 6 part series the sins of Greed and Gluttony are combined representing Gen Z's supposed desire for material wealth and to consume beyond their needs. The sins are represented through the remnants of a large meal and the implication that the other attendees are no longer with us as well as the extravagant outfit.

BTEC Photography - Identity

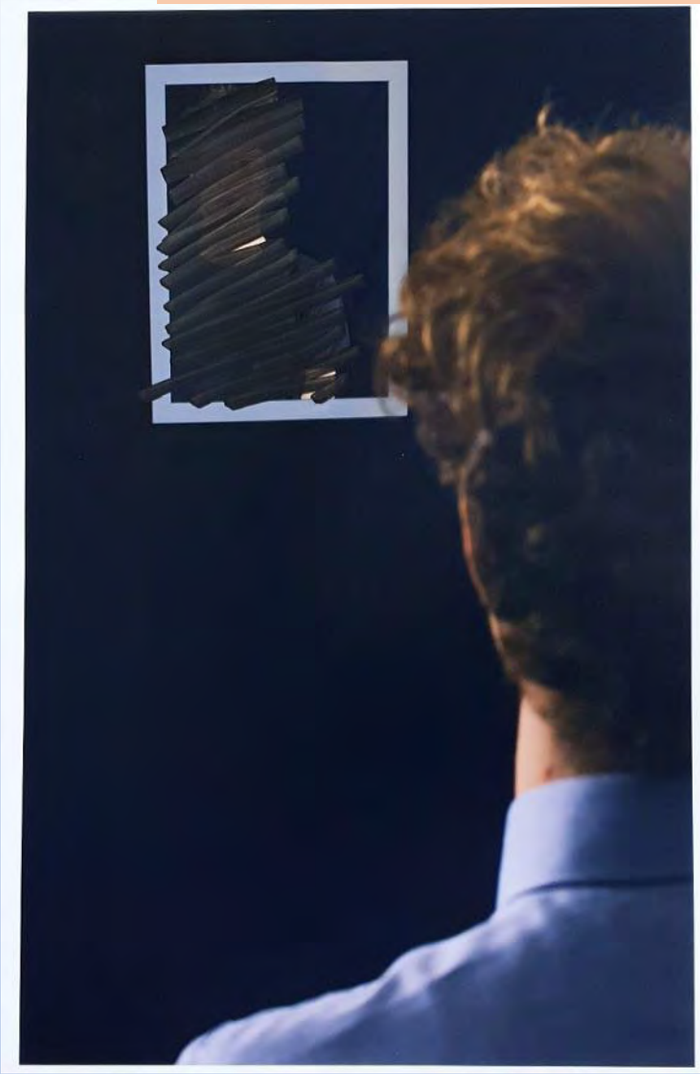
One of the projects I have completed over the last year was the Identity project. This explores the identity of people, places and things and how they can relate and tell a story. A focus whilst completing this project was on my creative process. I began by mind mapping and creating mood boards before selecting some artists to research and emulate. I then created my own work around the topic experimenting and evaluating as I went along.







Final prints made to A4 – November 2021. Accompanying sketchbook is A3.

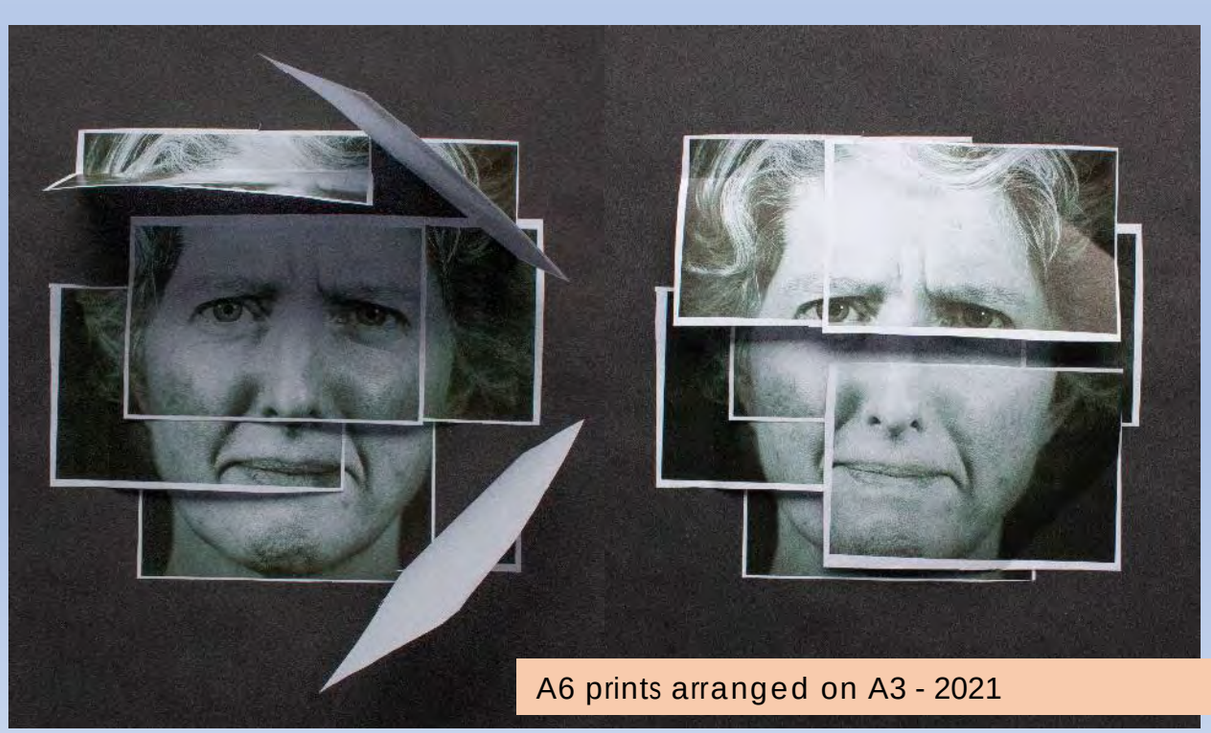


A3 Cyanotype print - 2020

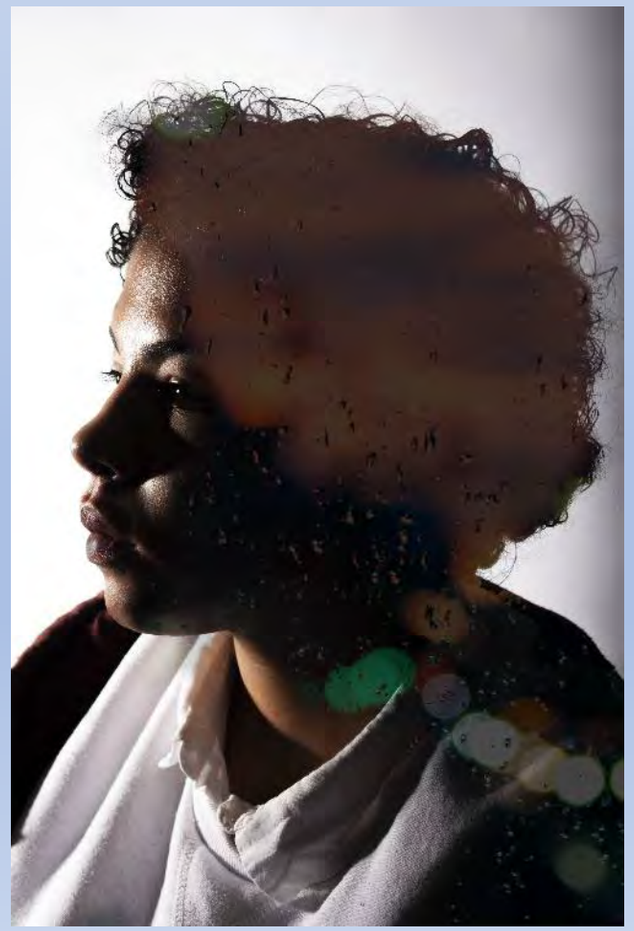
A4 modified print from film negative - 2021

A key element of our work in photography is the exploration of different materials, techniques and processes. I've found this encourages me to experiment and push my creativity. At each stage of my projects I am considering what else I can try and what I could do differently. I think this is a really important practise in creative work.

BTEC Photography – Experimenting



A6 prints arranged on A3 - 2021



A4 layered prints on acetate - 2021

When we are designing products for use by humans should we design for the average, the extreme or the individual?

Poor and ill-fitting design is everywhere. Generally, it is nothing more than an inconvenience and often, if we encounter it every day, we adapt to overcome it. This is especially the case in mass-produced and commonplace items. This includes doors that you push when they need to be pulled, taps you turn for cold water but get hot, the chair you sat in that was too small (or too large), or simply the items in your life that you find awkward to use and interact with or even understand?

Unfortunately, in some cases, this poor design can cause us harm or even kill us - which begs the question; why do we put up with it? As Caroline Criado Perez explains in her book *'Invisible Women'* (Perez, 2019)[1], bad design can be deadly because if something designed to keep you safe such as a stab-proof vest or the safety features in a car are not designed to fit you, they will not keep you safe.

We should not have to put up with bad design in everyday mass-produced products so I will be exploring the issue and evaluating the different methods of designing for people in order to suggest ways we can improve the way we design.

This is not a new problem. People have designed for people since the start of humanity. When people first made tools, they designed them to fit their hands, to be a manageable weight - they designed for people. In more recent times many designers have attempted to define design for people and come up with key criteria for other designers to use ((Pacheco, 2019)[2] gives a brief history of this development which I have cherry-picked and expanded upon.).

For example, Henry Dreyfuss explained in his 1955 book *'Designing for People'* (Dreyfuss, 2003)[3] that it is the job of an industrial designer to design for the user and to consider factors such as their size and their psychology. He and his design team made use of Vitruvian Man-esque drawings of a man and woman named Joe and Josephine (See appendix – Image 1 and Image 2). Constructed from data, they represented the average and extreme 20th-century Americans and "*remind us that everything we design is used by people and that people come in many sizes and have varying physical attributes*". When they designed, they designed to fit Joe and Josephine with the intention of removing friction between people and products or in other words, ensuring that interactions with the product are comfortable intuitive and enjoyable.

In 1988 Donald Norman coined the term Human-Centred Design. He explains in his book *'The Design of Everyday Things'* (Norman, 2013)[4] what the term encompasses and how and why its

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[1] Perez, C.C. (2019). *Invisible Women - Exposing Data Bias in a World Designed for Men*. London: Chatto & Windus.

[2] Pacheco, J. (2019). *History and Nature of User-Centred Design - Joshua Pacheco - Medium*. [online] Medium. Available at: https://medium.com/@joshuapacheco/history-and-nature-of-user-centred-design-18e20f86294f [Accessed 5 Sep. 2021]

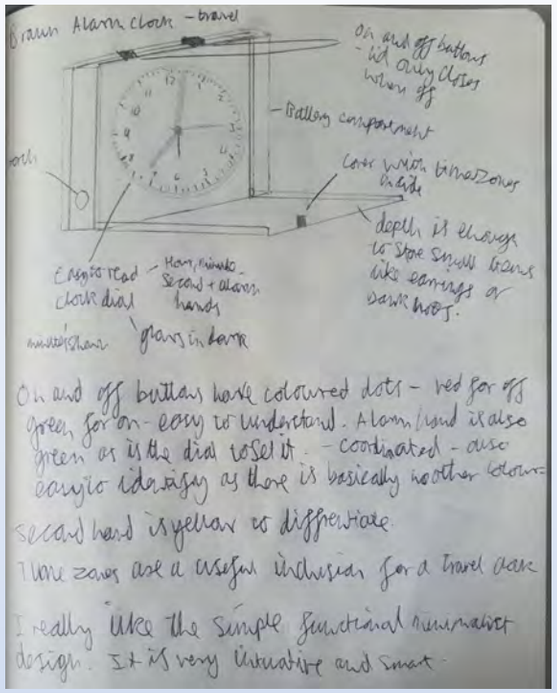
[3] Dreyfuss, H. (2003). *Designing for People*. 3rd ed. New York: Allworth Press.

My Extended Project Qualification

For my EPQ I decided to explore design and specifically designing for people. I found this project to be really valuable – it expanded my understanding of design and the books and articles I read as research helped reignite my interest in the project and get me thinking about design more closely.

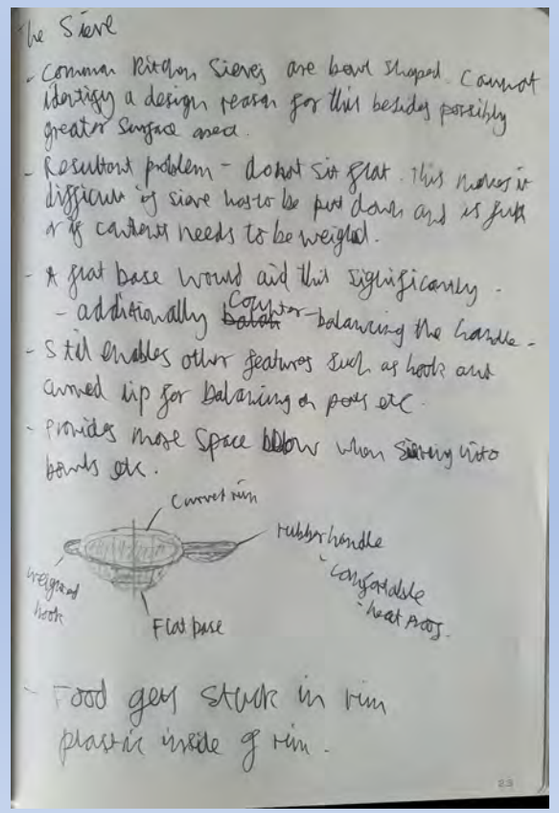
Notebook Pages

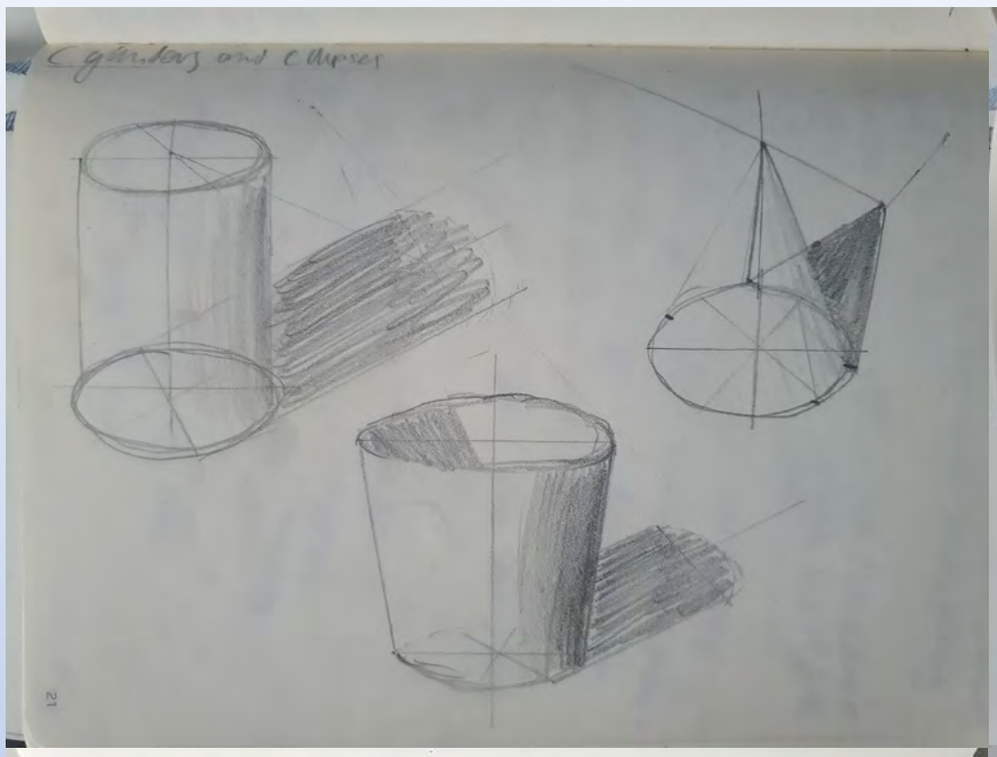
A5 sketches with pencil - 2021

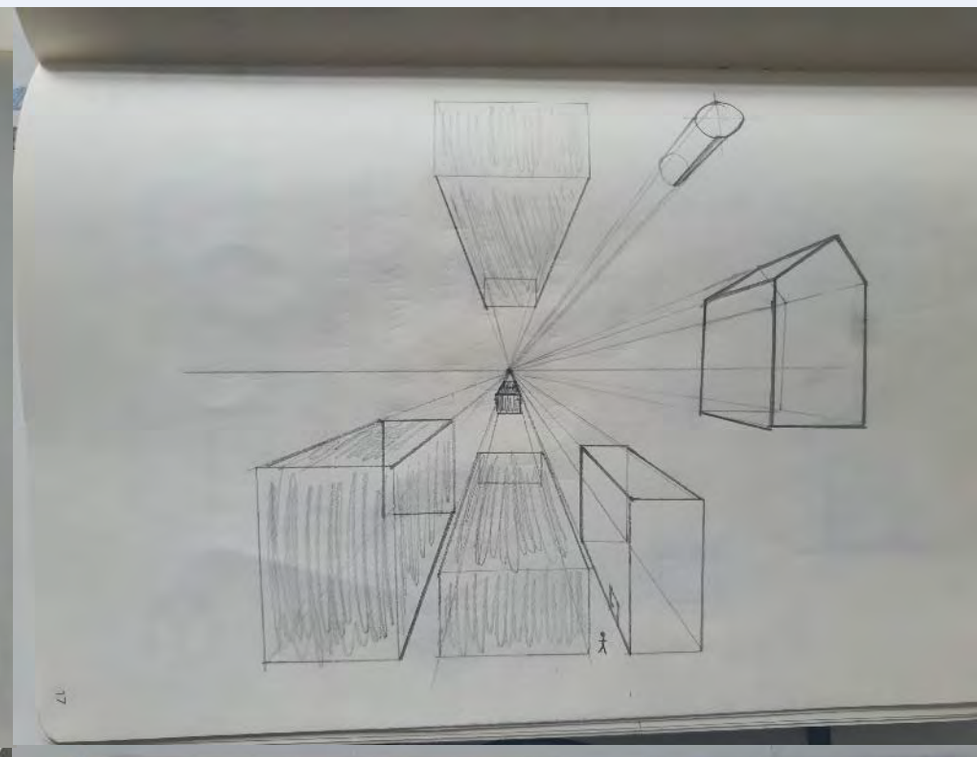


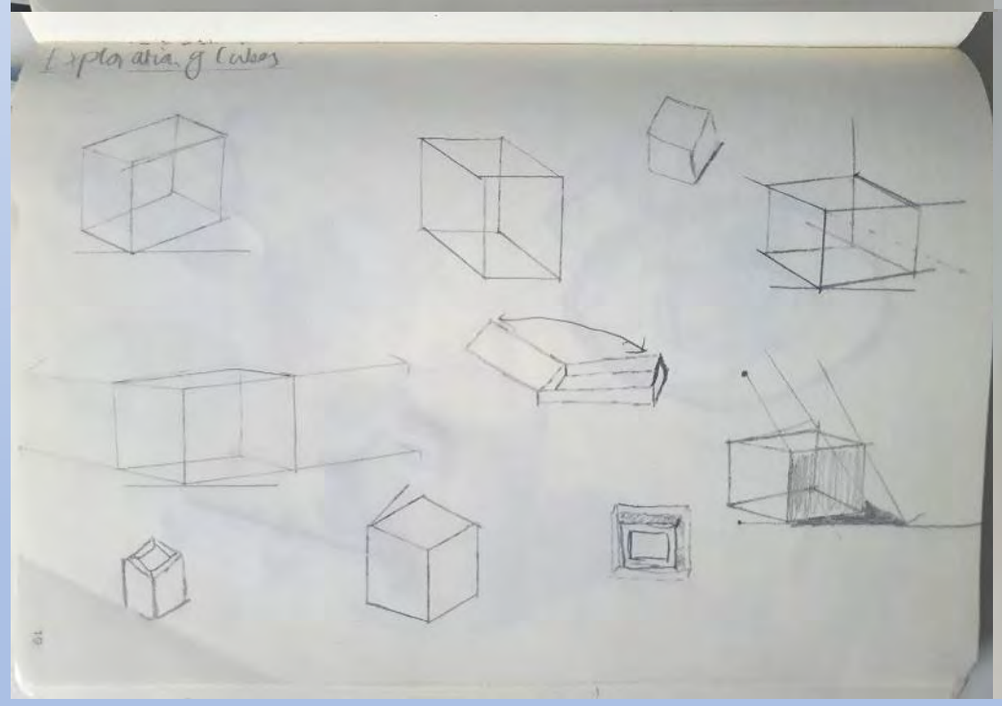
Here I have sketched a Braun travel clock a product that I like and have made notes and annotations on features I like.

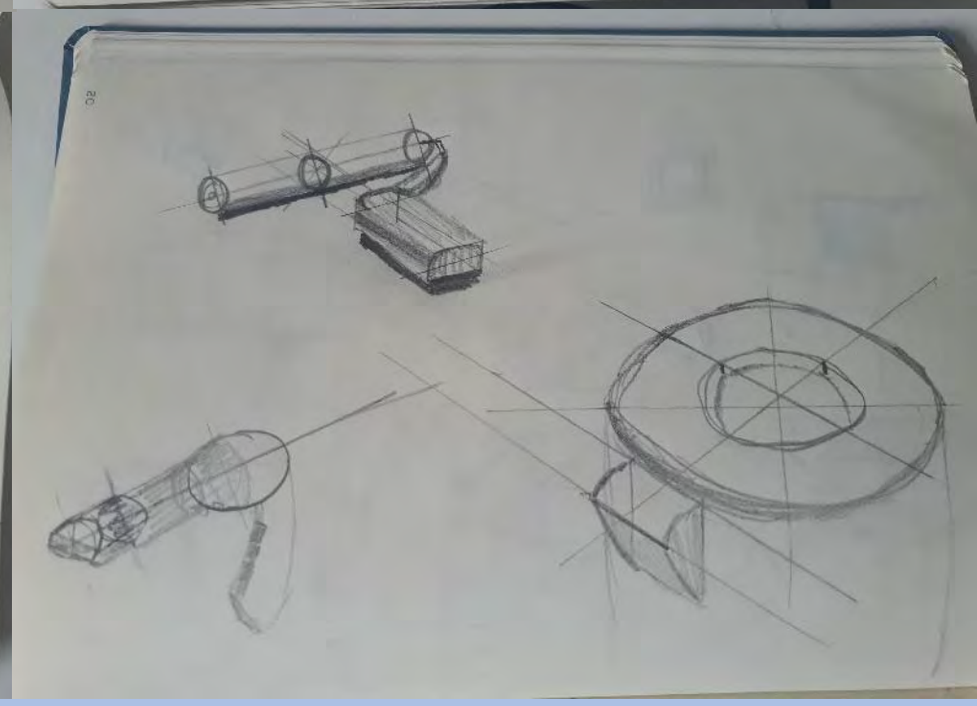
Another product that I considered redesigning was the Sieve – I have analysed the problem and done a basic sketch.







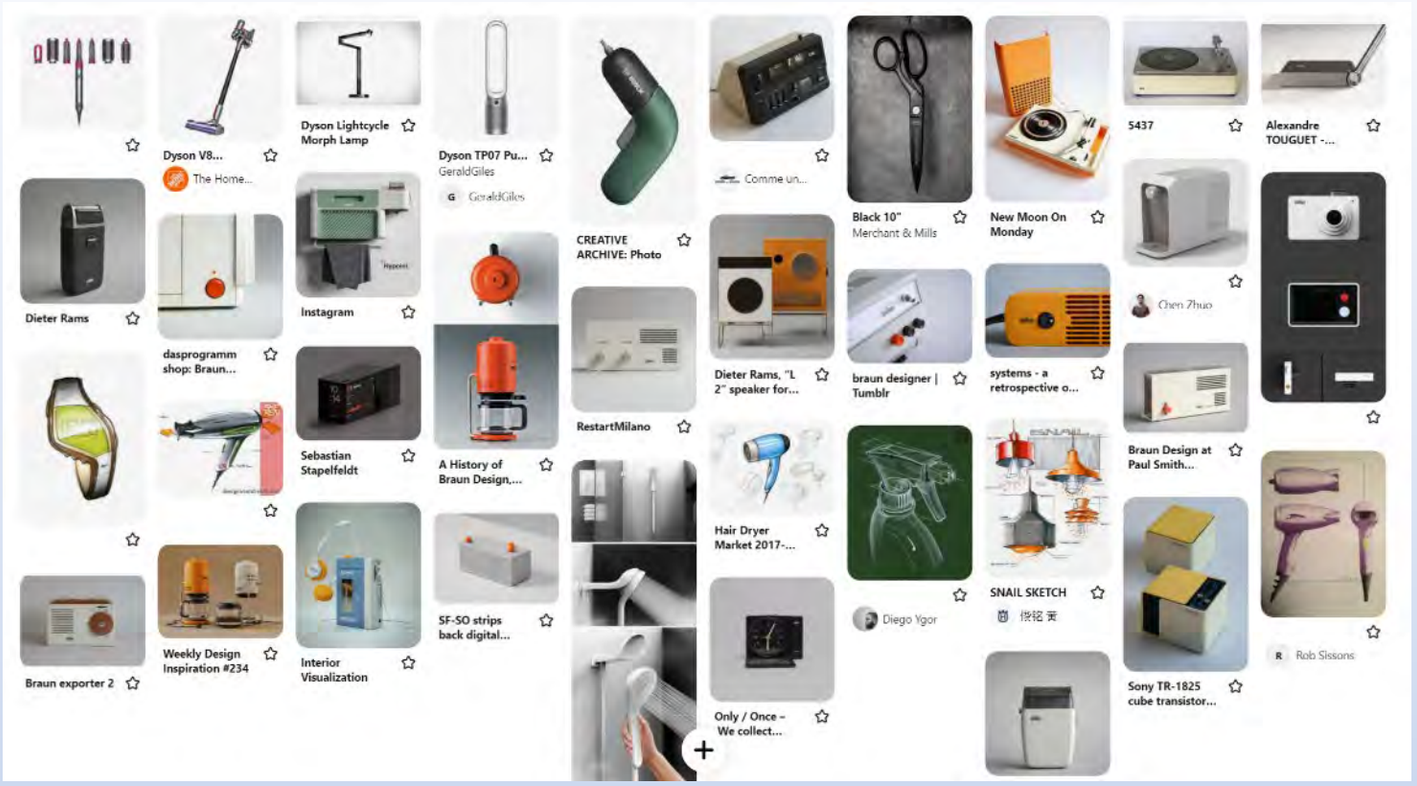


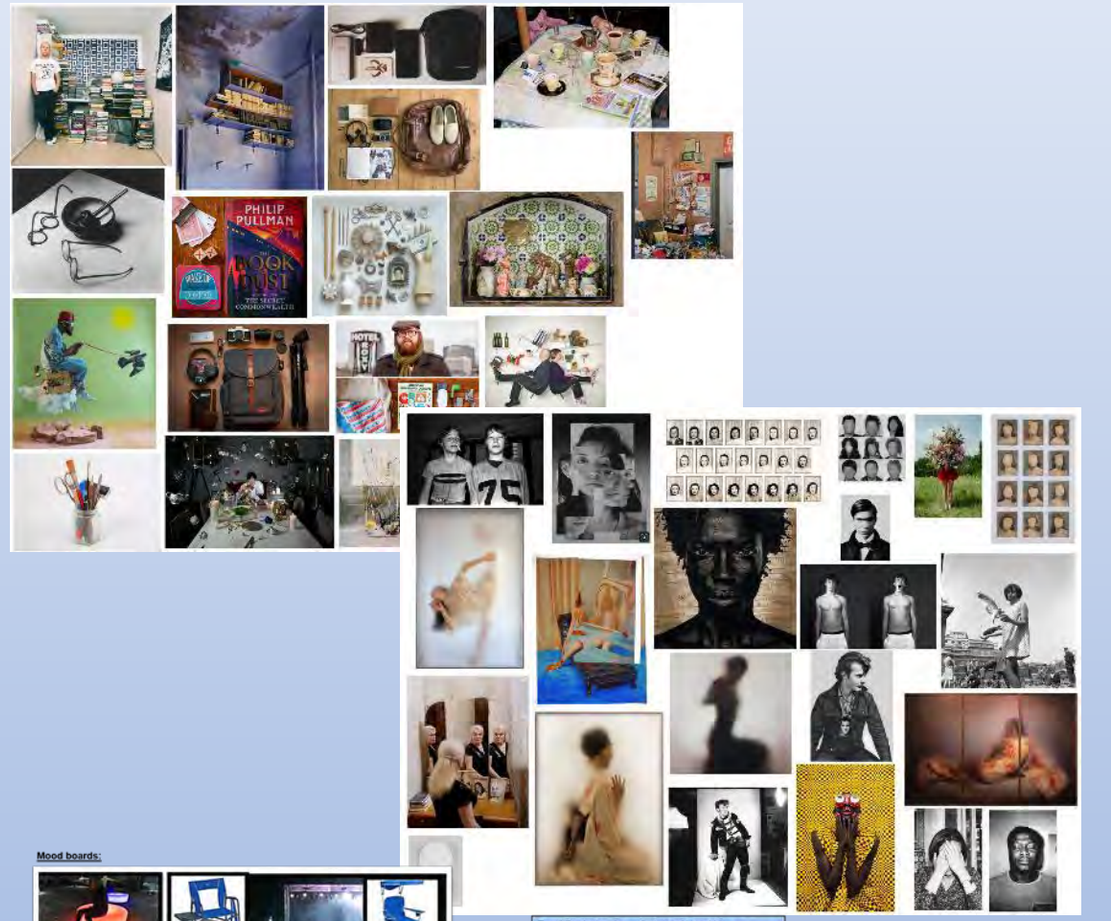


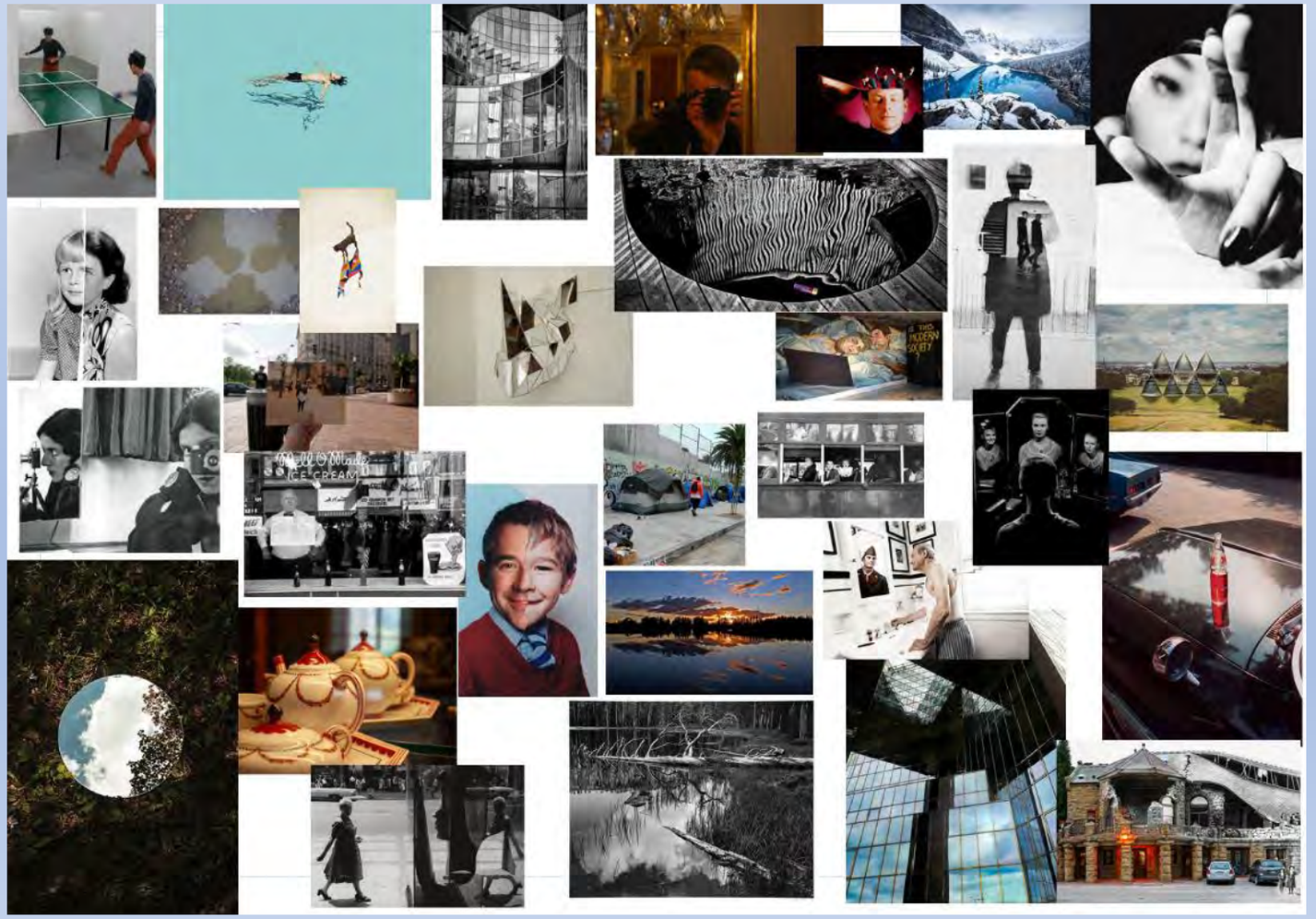
This is a sample of some pages of my notebook where I have experimented with drawing different shapes and objects in different perspectives. I have explored common drawing techniques and experimented with shading and shadows.

Mood Boards

With my creative work I like to gather inspiration as a starting point. Sometimes I will do this intentionally for a project such as with the photographic mood boards pictured. Or as an ongoing source of inspiration like the product design board on the left.







Mood boards:

Event/Products – In my first mood board I have compiled images that represent my chosen occasion(a festival) and some products that link into my initial ideas of chargers or seating.

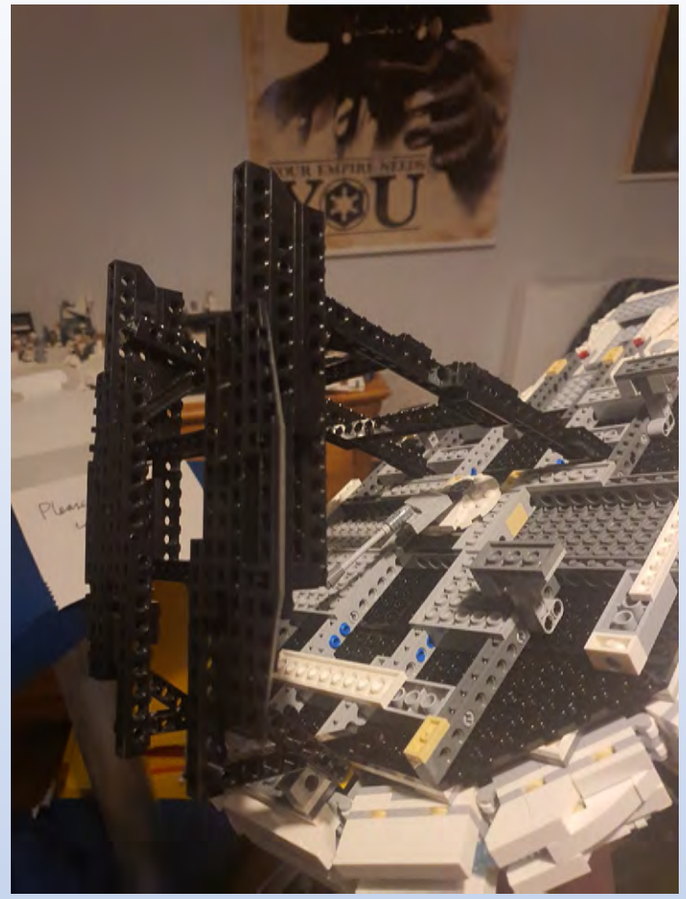
Designers – I have chosen 4 designers for my mood board whose style I can incorporate into my product, Norman Foster, Marcel Breuer, Ettore Sottsass, Gerrit Rietveld. They make use of styles which my research has proved are popular.

Personal Photography

Photography is also one of my biggest creative outlets. I think it is really valuable as it forces me to slow down and take in the world. It is also gets my creative juices flowing.

Design Through Play

One of my long time passions has been for Lego. I cant remember a time I haven't had it in my room. I enjoy building sets but what I enjoy more is modifying them – making them my own design. I have also found Lego to be a useful tool for designing solutions to problems.



One example is with my Lego Hoth Base from Star Wars. Having purchased the doors as a set I decided I wanted more to my base and created the left hand portion to accommodate different elements of the base and attach to the doors.

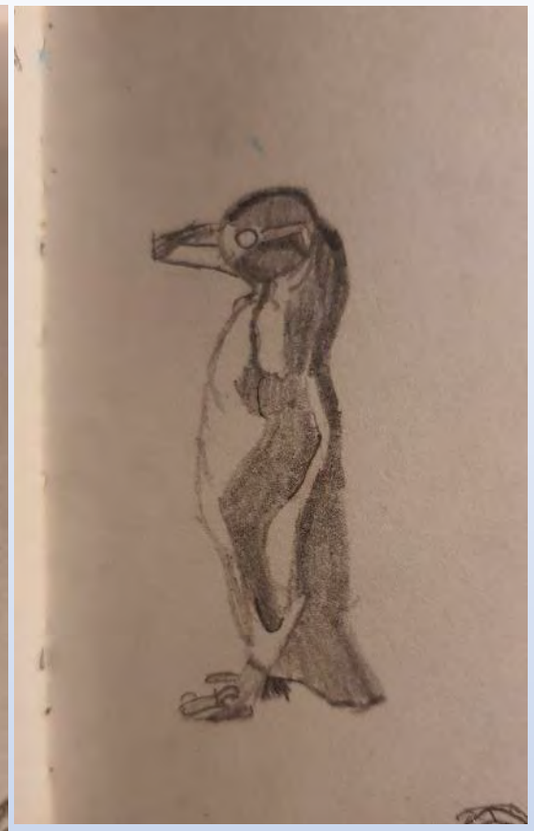
Base of my section is 40x40cm
2015 – ongoing.

Once I had built my Millennium Falcon I wanted to be able to display it so I designed and built a stand for it.

Stand is approximately 15x15x20cm - 2020

Oil Pastel on paper – 15cm2 - 2017

Other Artistic Work



Through several years of learning, practising and experimenting with art I have become a competent artist in a variety of mediums. I am particularly happy with my understanding of form in the animal drawings.

Pencil sketches approx. ¼ A4 - 2016