

Design & Technology

Year 9 Option Pathways

Reasoning for option pathways

Rather than continue to carrousel through the variety of material areas, students pick one area to focus on for the entire of Year 9. This allows us to build a solid foundation of skills and subject knowledge in preparation, should pupils then decide to continue onto GCSE

Year 9

Skills based. Numerous mini-projects which build subject knowledge and competencies in a specialist area of your choice ready for further study at GCSE.

Year 10

- Broadening knowledge, understanding and competencies via project-based work in a specific materials area.

Year 11

- GCSE major project will begin at the start of Year 11
- Skills-based projects completed

Year 9 option pathways

OPTION CHOICE FOR YEAR 9	OPTION PATHWAY FOR YEAR 10 GCSE				
DESIGN & TECHNOLOGY	DESIGN & TECHNOLOGY	3D WORKSHOP DESIGN	FOOD PREP. & NUTRITION	HOSPITALITY & CATERING	TEXTILES
3D WORKSHOP DESIGN	3D WORKSHOP DESIGN	FOOD PREP. & NUTRITION	HOSPITALITY & CATERING	TEXTILES	
TEXTILES	TEXTILES	FOOD PREP. & NUTRITION	HOSPITALITY & CATERING		
FOOD TECHNOLOGY	FOOD PREP. & NUTRITION	HOSPITALITY & CATERING	TEXTILES		

FOOD TECH



Why pick Food in Year 9?

- You enjoyed home cooking and theory food lessons in Year 7 and 8
- You completed all of the home cooking tasks with enthusiasm!
- You are thinking of taking Food at GCSE

**Examples of
Products made in Year 9
by some of this Years
students**



Victoria Sponge Cake



Fresh Pasta



**Mini Shortcrust Pastry
Quiche**



Shortbread Biscuits



White Chocolate Blondie



Chicken Curry



Swiss Roll



Gingerbread



**Rough Puff Pastry
Cheese Straws**



Pizza Calzone

TEXTILES

Printing/sunglasses case project

Techniques:

- Block printing
- String printing
- Tie Dye
- Applique



Make-up bag/tablet case project



Techniques:

- Quilting
- Transfer printing
- Free hand machine embroidery
- Hand embroidery
- Beading/sequins

Fabric manipulation project:



DESIGN & TECHNOLOGY

DESIGN NEW PRODUCTS

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and one of

However, it was to make a curved panel, which create a large mechanism on either side which folded out for each headphone to rest on them accordingly, I will explore this in my next stage of product development.

The stand for the phone to fit into worked, however, top improve my design and make it seem more simplistic, I would engrave the holding slot for the phone into the top half of the base. This would look as shown in the image from my solid works design here.

From the side angle shown here, I need a place to insert the air pods as shown in my specification. Because I have lowered the base, there will not be enough space underneath, however I could engrave a slot into the top half of the base.

This is the angle from the top which shows an idea which I made on solid works for the space to slot the air pods into. The slot would need to be deep enough that the air pods are half in, half out.

I used dowel wood to separate the top and bottom half of the base, this meant that my shape was easier to design since I struggled to create the base shape of the original design. For that reason, I kept a circular shape whilst trying to keep the design as minimal as possible.

I chose the design for its unique and interesting design, the product was a good fit for my clients brief, customizable options of storage, the storage capacity. This design was heavily liked by my client, the initial idea for a mechanism will be redesigned, as a rotary mechanism is considered.

I couldn't create the drum on the model as getting a drum shape out of the card would have been too difficult to make, hence I have made a version of this in solidworks, I will also need to work on a new detent mechanism for the ball-socketing of the container.

To work the new mechanism, the lever operation is replaced with a rotary rotation based on the design. This will have lever operation of the device and better maintenance due to two moving parts.

Initial Development

I have also worked on a better mechanism for medicine delivery, the old mechanism was made as it would spill medicine on the table instead of containing them in a safe zone. Where they would not spill on the table or floor.

I have changed the dispenser mechanism to be more like a medicine dispenser, the old mechanism was made as it would spill medicine on the table instead of containing them in a safe zone. Where they would not spill on the table or floor.

Here I have designed a prototype of a rotary for multiple reservoirs in a medicine storage room, this will hopefully make the display more ergonomic of these devices, users also should make making them on and off the base a much easier process.

This is a summary of the final design. Hopefully, I will make the fabrication process soon. The next in development from the previous design to making container water.

Identifying & Investigating Design Possibilities

INTRODUCTION: In this NEA project I am following the brief of "Playing Games" I will analyse different aspects and potential ideas for this criteria, whether that be sports, board games, video games or other possibilities. After I will focus a specific aspect and there do an interview with an expert on that topic to gain guidance on how to continue with my project making sure that it fulfils what the public want and solves a problem with a previous similar product.

Board games are typically made of Wood, Card or Plastic which vary in **environmental impact**, Wood and Card (when sourced correctly) can be very low impact on the earth, they can just as much be bad. Plastics are made from the byproduct of crude oil which is a fossil fuel of finite amount and is non-renewable. It is very damaging to the earth when not recycled correctly. Sometimes a board game that is a bit more sophisticated may have more expensive showcase versions made of metal or other more expensive materials such as glass. These games include chess or checkers that aren't usually played with younger children. Metal is from the ground so has an impact on how it is extracted and used but in general it will cause less of a negative environmental impact than plastic.

There are also **Deck Building games** made entirely about cards such as Pokemon or Yu-Gi-Oh or Magic: The Gathering. This has a lot of possibilities for storage and/or a playing board.

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There are classic games such as baseball, with potential for unique design, whilst still showcasing skill and craftsmanship in the ball etc.

I have also considered a **desktop game** such as table bowling. It is simple but with very nice wooden craftsmanship and can be adapted for travel (play with magnets under the pins and although being difficult to craft properly it could make for a very aesthetically pleasing.

Socially, board games are generally very good. They promote friends and family coming together and spending real time face to face, doing something as a hobby and creating fond memories. Of course people get upset when playing a game if they lose but in general they are a fun experience. You must be careful, however, in the social connotations of a board game, for instance some people get offended in chess because the white pieces always move first, or the board game Pandemic where you have to travel around the world eradicating various diseases, which since the COVID-19 outbreaks and lockdowns, people may feel upset about a game if they have had friends or family die because of a pandemic. Sports and outdoor activity games are also very fun socially and although (again) people get competitive, they are still a very fun social thing to do that can bring friends and family together in a fun competition or event.

Board games have a low **economical impact** due to how cheap they are and how plentiful there are and over meaning that they are available to all. Costs more so than a £1000 gaming PC or play games.

There are also physical accessories such as this storage device for Nintendo switch cartridges, which also pays homage to the Nintendo franchise of Super Mario Bros.

As is the case with most things nowadays, Games of any kind usually contain plastic, whether that is a surface, laminate or just a solid piece but due to their negative environmental impact, as a society we need to use more renewable and **sustainable** products so hopefully, good and renewable products will be used to make more toys, single-use plastics are being used.

Some outdoor games are as simple as this Nerf product, where there is a unique design for a simple game of catch, that can be played over and over with no instructions.

I like the idea of a unique aspect or accessory for an already existing game project. For instance a gyroscope (rag table) for FPS games or a form of mat to have card games in a vehicle that you can pick up more easily. There played a deck builder card game called Star Trek which is great for travel but you need to lay out a 1000 cards to play so maybe a nice box for cards with a way to access them.

There are also physical accessories such as "Spinball" which implement "Spinball" (but things like a trampoline. Another example of this is "MDF Ball" which is like a baseball but with a unique ball and ball that mean the ball flies unpredictably and not as far as that game is unique.

Initially I thought about **board games** as chess or something with very nice craftsmanship and potential whilst being very simple and easy to play.

We added fins to the inside of the drum to prevent the balls to the inner portion this will reduce risk that the previous design had from the inside cylinder being risks of the balls bouncing off. To create this I may need to create a system of how to attach the fins to the outer drum perhaps through slotting the pieces together. Along with this I believe that the fins enhance the aesthetics of the product. The functional minimalist design of the fins will align with my aesthetic spec points.

For my second model I have delivered on my plan to have the device on an axle with a more minimalist base allowing it to be more portable and to eventually be able to angle the device in different orientations. I have modelled a part of this in SolidWorks there will be 2 portions to this, the section pictured above and then a similar interlocking portion, slightly smaller which will be attached to the body of the device.

Utilizing this design eliminates the use for hinges which could possibly fail as this section due to being made from PLA as it will be 3d printed as it is what we have but in reality, you would utilize ABS plastic as it has the most durability along with this will utilize stainless steel nuts and bolts. This durability aligns with my spec point of durability.

There are also physical accessories such as "Spinball" which implement "Spinball" (but things like a trampoline. Another example of this is "MDF Ball" which is like a baseball but with a unique ball and ball that mean the ball flies unpredictably and not as far as that game is unique.

I decided to utilize a living hinge for my model for the drum portion as it holds rigidly and can be flexible, 2 qualities which are perfect for this aspect. I have cut 3 different designs into 3mm rfid all with different gaps between the cuts. This gave the pieces of rfid different levels of flexibility. After producing 3 iterations my middle design seemed the most feasible in terms of flexibility. This may have to be altered though as I may make my final design with thicker rfid for it to be more durable. I implemented this into my card model, and it allowed for more flexibility.

A hole for the leg to screw into.

Diagram of the screw portion for the adjustment piece.

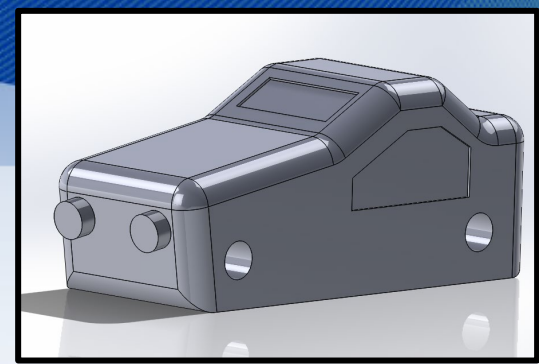
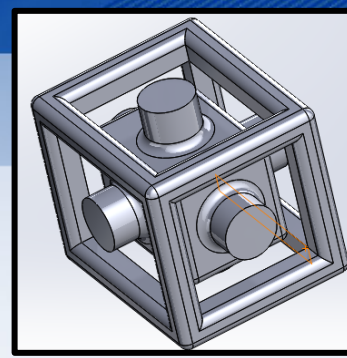
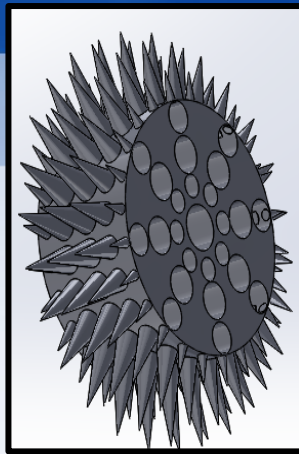
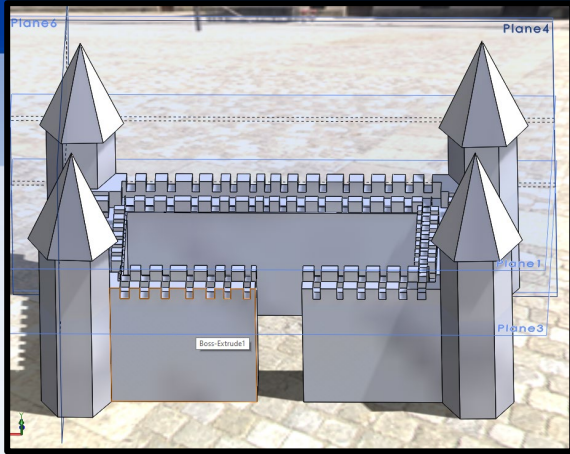
PHOTOSHOP

PREPARE TO
HAVE YOUR
MIND...

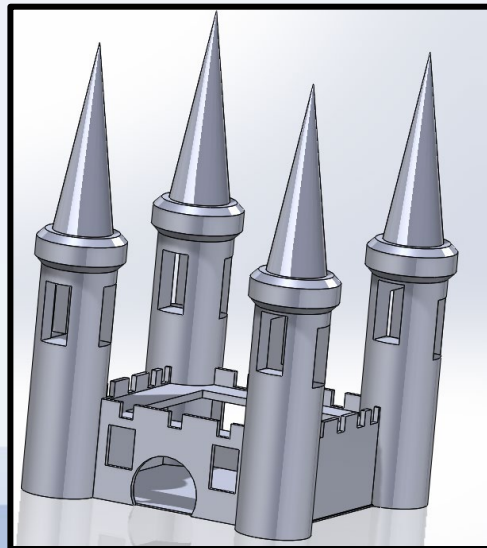
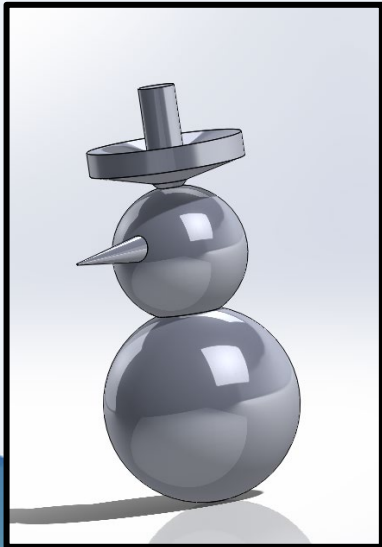


ILLUSTRATOR



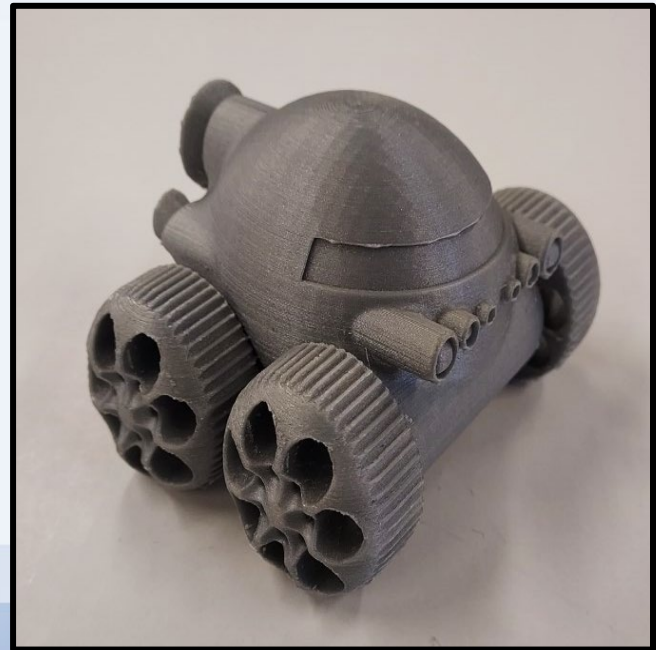
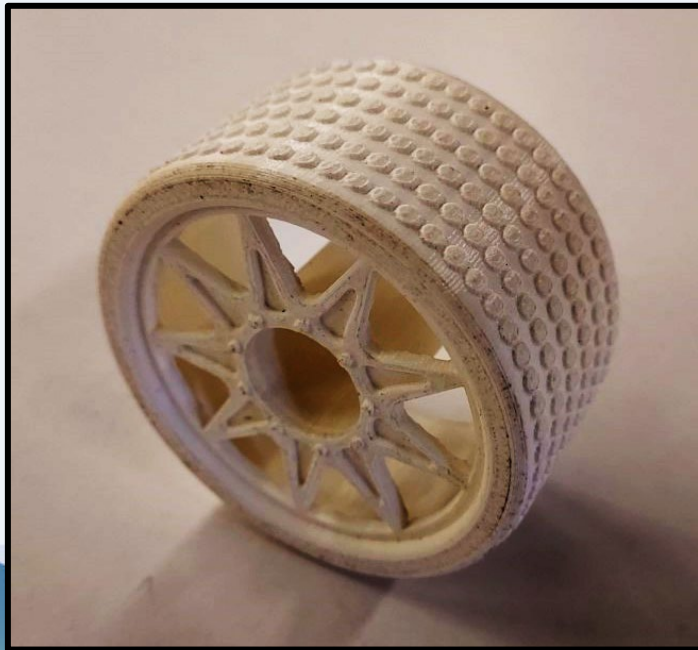
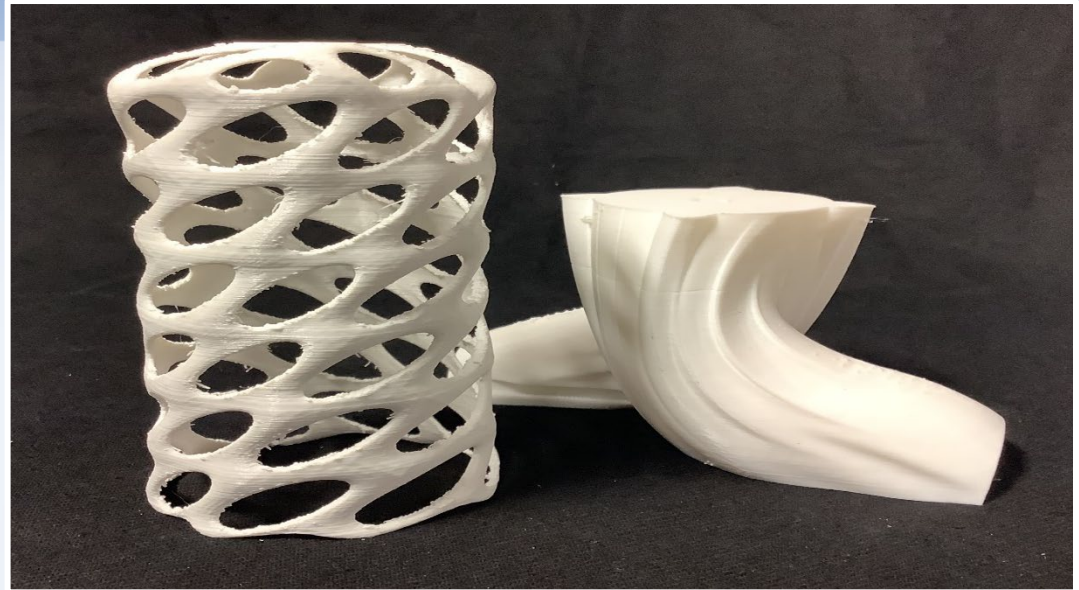


COMPUTER AIDED DESIGN



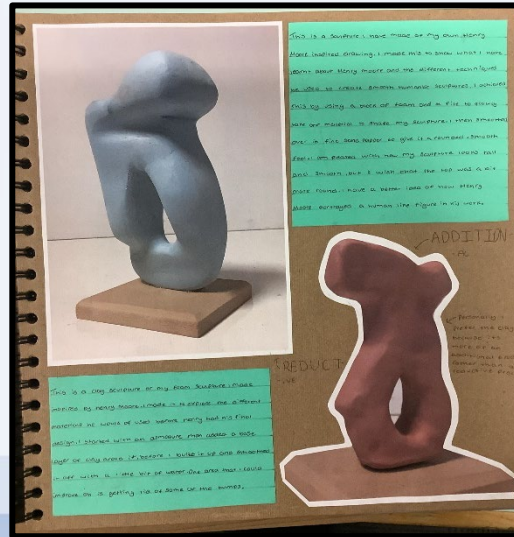
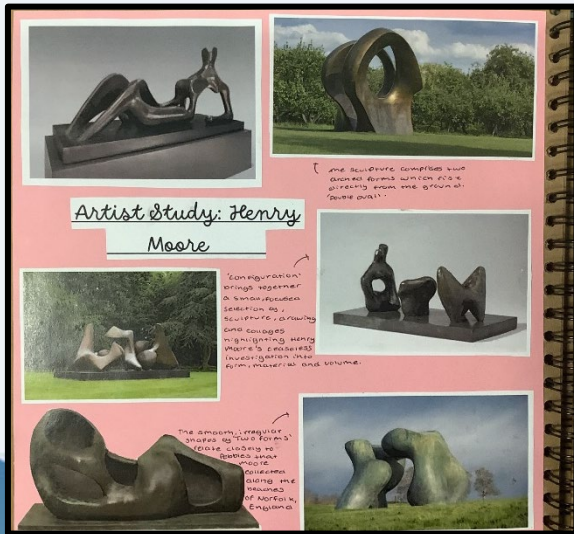
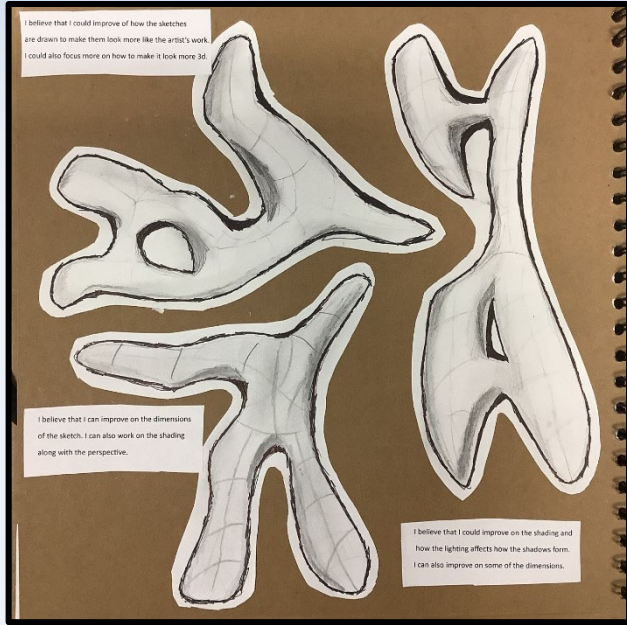
LASER-CUTTING

3D PRINTING



3D WORKSHOP DESIGN

Inspired by the work of others



WORKSHOP MINI-SKILLS



WOODS



METALS



PLASTICS



REACTION TO A DESIGN MOVEMENT



Year 9 option pathways

OPTION CHOICE FOR YEAR 9	OPTION PATHWAY FOR YEAR 10/11 GCSE				
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The wrong reasons for choosing a subject area to study:

- I like the teacher who teaches it.
- It's what my friends are taking.
- It looks easier than the rest.

The right reasons for choosing a subject area to study:

- I already enjoy the kind of work undertaken in that subject area.
- I want to challenge myself and see what I am capable of achieving.
- I am interested in a possible GCSE/ career associated with that subject area

Second Choices

- **There are only so many groups we can accommodate in each subject area**
- **You must have a second choice option**
- **First choice will be given to those who have applied themselves in D&T throughout year 8 in that specific subject area**

If you have any further questions, please ask your DT teacher.