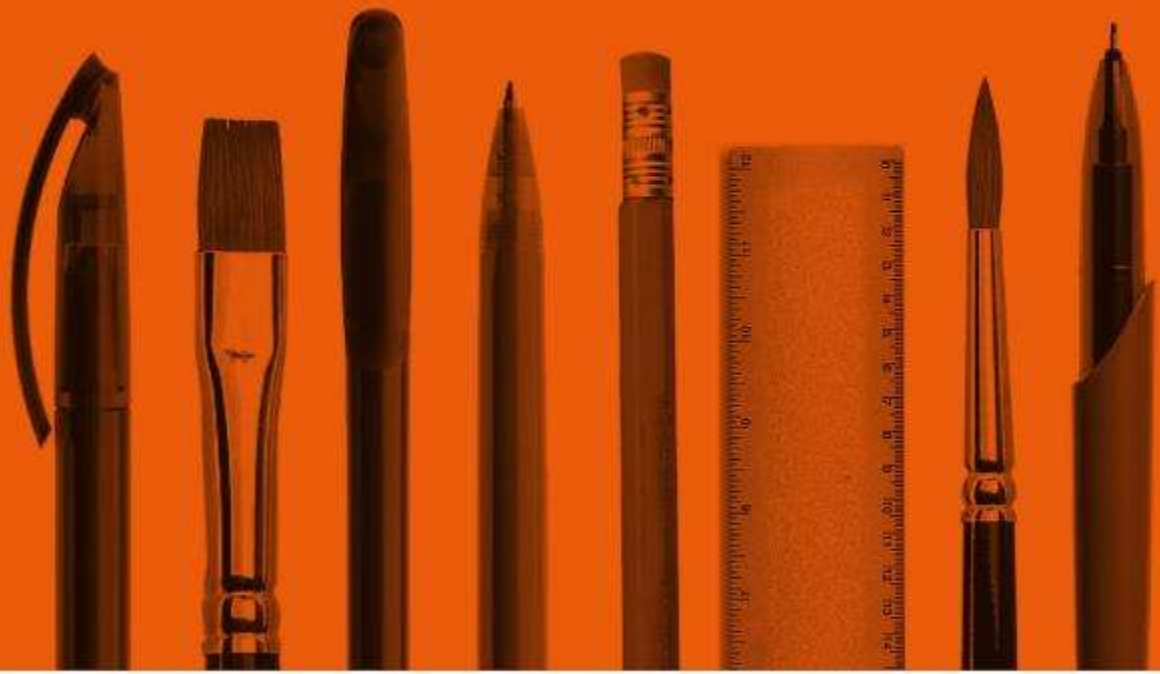
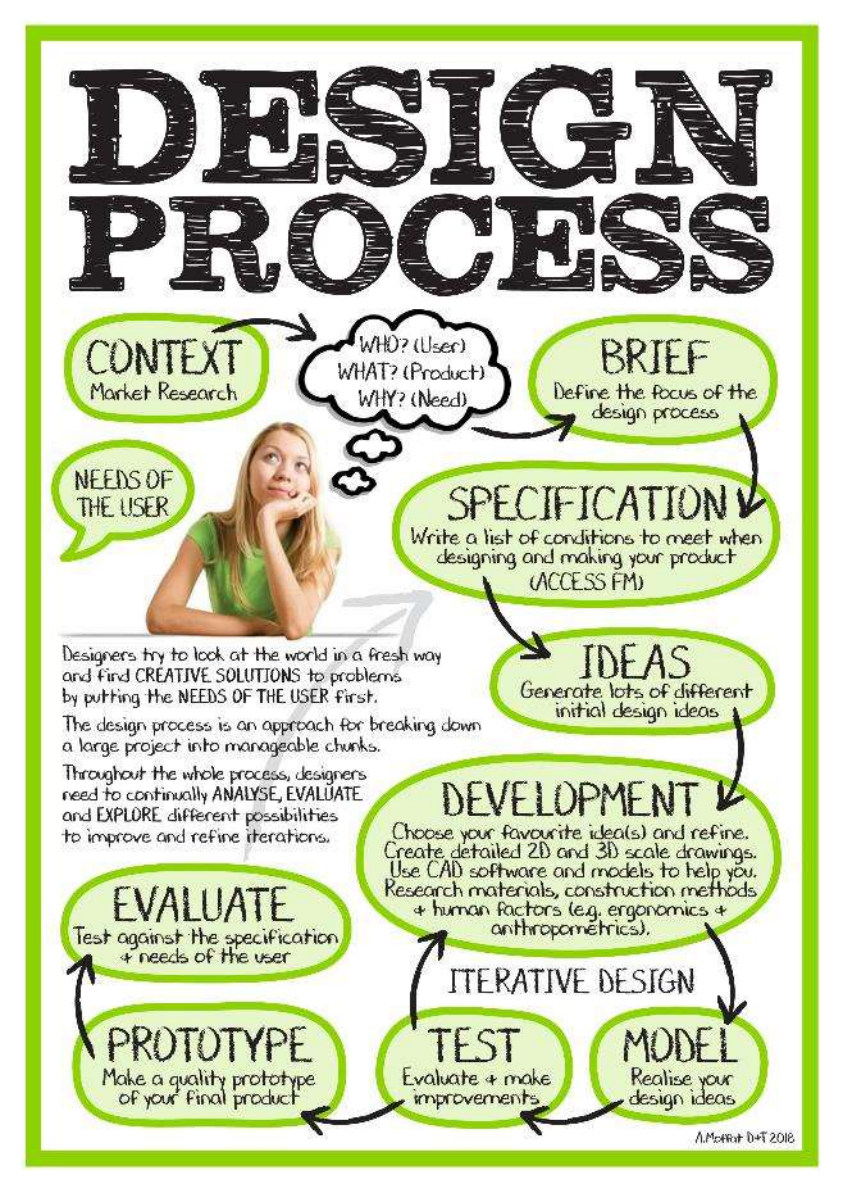
Design & Technology
Non-Exam Assessment



wjec cbac

eduqas
Part of WJEC

NON EXAMINED ASSESSMENT (CW)



It all starts with thinking about what problems there are and then move onto the needs of a potential user.

NON EXAMINED ASSESSMENT (CW)

- NEA – Non Examined Assessment – 50% of your GCSE.
- Approximately 35 hours of work.
- Design & Make Task from a contextual challenge set by WJEC – *(Which you will see in a few slides time.)*
- Out of 100 marks.
- Internally assessed by your teachers and externally moderated by an examiner.
- Visiting moderation – Someone **will** come in and look at everybody's work!

NON EXAMINED ASSESSMENT (CW)

What will the NEA task look like?

- A3 Formal Presentation Folio (Around 8 pages).
- A3 Informal Sketchpad Folio.
- A fully functioning Final Prototype / Product.
- Supporting models, prototypes, tests and iterations. **(VERY IMPORTANT)**

Where do you start?

- Analyse the 3 contexts
- Focus on user requirements
- Evaluate existing products
- Research new materials / processes / techniques
- Focus on the problem
- Look at designers / other practitioners
- Come up with your own briefs then narrow to one
- Write up your specification

NON EXAMINED ASSESSMENT (CW)

What is important with this new GCSE:

- You have to analyse all three of the briefs.
- You must do ‘more’ relevant ‘digging’ when it comes to research.
- You must identify multiple design possibilities.
- Your user’s needs and wants are critical.
- You must show your Iterative journey using modelling / testing / evaluation.
- Your prototype / product must function.

Layout / Design of the pages for your sketchbook

Before you start your coursework, you need to think of the layout and design of your pages. Work that you produce on the computer will be printed out and stuck into your sketchbook.

Pinterest is a good place to look at home if you want to produce a really unique style to your pages. Google images is fine to look for inspiration though.

You need to think about:

- Colour scheme
- Font for your titles
- Possible Border
- Boxes where text will go
- Images
- Conclusive paragraph area

Layout / Design of the pages for your sketchbook

Here are some simple example page design ideas to get you fired up!

Layout / Design of the pages for your sketchbook

Here are some colourful example page design ideas to get you fired up!

What have YR 11 students said about the coursework?

Manuel Sanna – “Make sure you don’t get behind! It’s really annoying when you are behind the rest of the group and you can’t start practical.”

Amber Chivers – “You can get all the coursework done in lessons. You don’t need to spend a minute outside of the classroom on it if you work hard in the lessons.”

Josh Tolworthy – “Get as many marks as you can for the coursework, especially if you aren’t very good in the exam.”

Alban Heysom – “Your teacher will help you if you work hard!” Don’t get behind!”

Identifying and investigating design possibilities.

YEAR 10 – A01 a (10 Marks)

Key words for this section:
Relevant research / Effective analysis / Range of problems identified / Needs wants and values identified

- The design context must be analysed critically.
- There will be a number of possible design tasks identified.
- Detailed and relevant research will be evident
- Consider the needs and wants of users
- Analysis of existing products
- Research into past / present professionals

3 – 5 Marks

- **Identified some opportunities for the development of designs within the prescribed context.**
- **Undertaken research and investigation, generally linked to the context and, where appropriate, the work of past/present professionals and companies.**
- **Undertaken a partially effective analysis of information, though the needs, wants and values of potential users may not have not been fully considered.**
- **Identified some problems/opportunities which partially inform the development of possible design briefs.**

Apprentice Designer

6 – 8 Marks

- **Undertaken a generally effective identification of opportunities for the development of designs within the prescribed context.**
- **Undertaken relevant research and investigation, linked to the context and, where appropriate, the work of past/present professionals and companies.**
- **Undertaken a mostly effective analysis of information, reflecting the needs, wants and values of potential users.**
- **Identified a range of problems/opportunities to inform the development of possible design briefs.**

Skilled Designer

9 – 10 Marks

- **Undertaken a comprehensive and effective identification of opportunities for the development of designs within the prescribed context.**
- **Undertaken comprehensive, relevant research and investigation, clearly linked to the context and, where appropriate, the work of past/present professionals and companies.**
- **Undertaken an effective analysis of information, reflecting the needs, wants and values of clients or potential users.**
- **Identified a range of problems/opportunities to clearly inform the development of possible design briefs.**

Master Designer

The following are the three briefs from the exam board:

New Product Launch– Produce a concept/prototype of a new product that incorporates the innovative use of smart/technical materials or innovative support material(s) for display at its launch.

Circular Economy– Design and make a creative and innovative product that has the circular economy as its primary design principle.

Space – Consider interpret the word “space” and use it to redefine an area at work or at home.

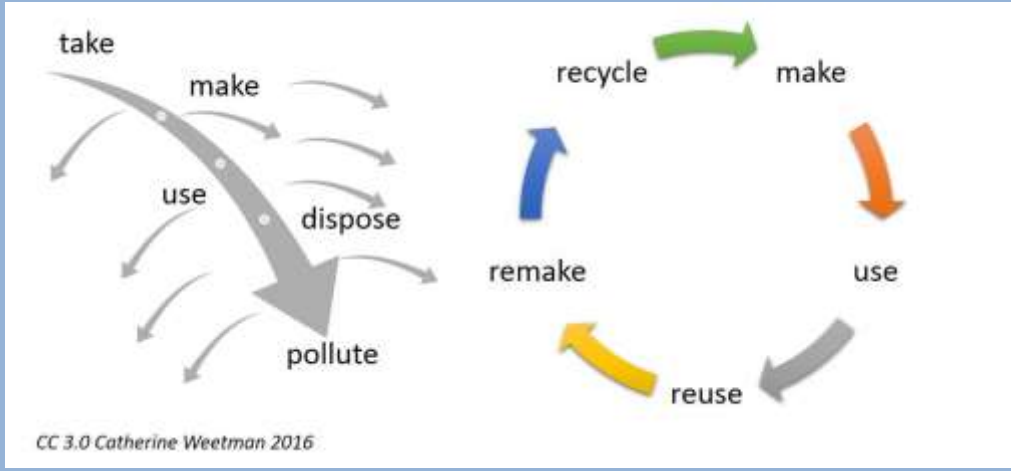
The following are the three briefs from the exam board:

New Product Launch– Produce a concept/prototype of a new product that incorporates the innovative use of smart/technical materials or innovative support material(s) for display at its launch.

The following are the three briefs from the exam board:

Circular Economy– Design and make a creative and innovative product that has the circular economy as its primary design principle.

A circular economy is an economic system aimed at minimising waste and making the most of resources. In a circular system resource input and waste, emission, and energy leakage are minimized by slowing, closing, and narrowing energy and material loops; this can be achieved through long-lasting design, maintenance, repair, reuse, remanufacturing, refurbishing, and recycling.



https://project.veja-store.com/en/single/upcycling

https://www.lego.com/en-us/aboutus/news-room/2018/march/pfp/

https://www.greentoys.co.uk/

The following are the three briefs from the exam board:

Space – Consider and interpret the word “space” and use it to redefine an area at work or at home.

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Hackney, 2003

Kevin McCloud joins John and Eleni Flood as they attempt to turn their cluttered and cramped Victorian terraced house in Hackney into a cool, contemporary, light and roomy living space.

49 mins

Space – Consider and interpret the word “space” and use it to redefine an area at work or at home. **SMART STORAGE**

Analysis of the Contexts

On this page you need:

- Three mind maps exploring each of the contexts
- List of potential problems for each context
- List of potential solutions for the problems found.

New Product Launch– Produce a concept/prototype of a new product that incorporates the innovative use of smart/technical materials or innovative support material(s) for display at its launch.

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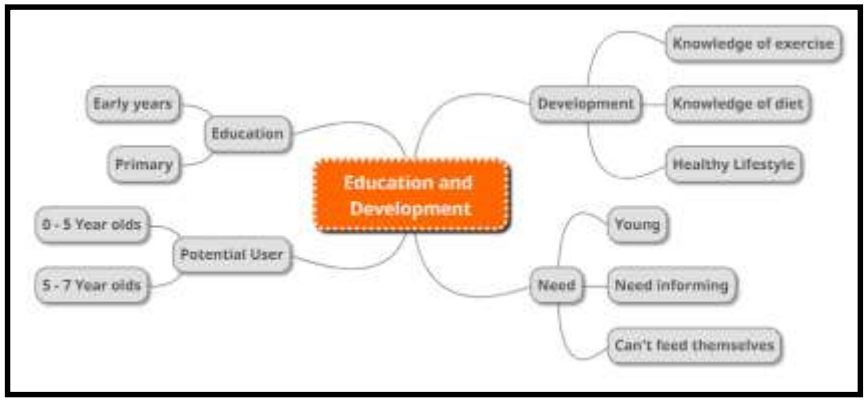
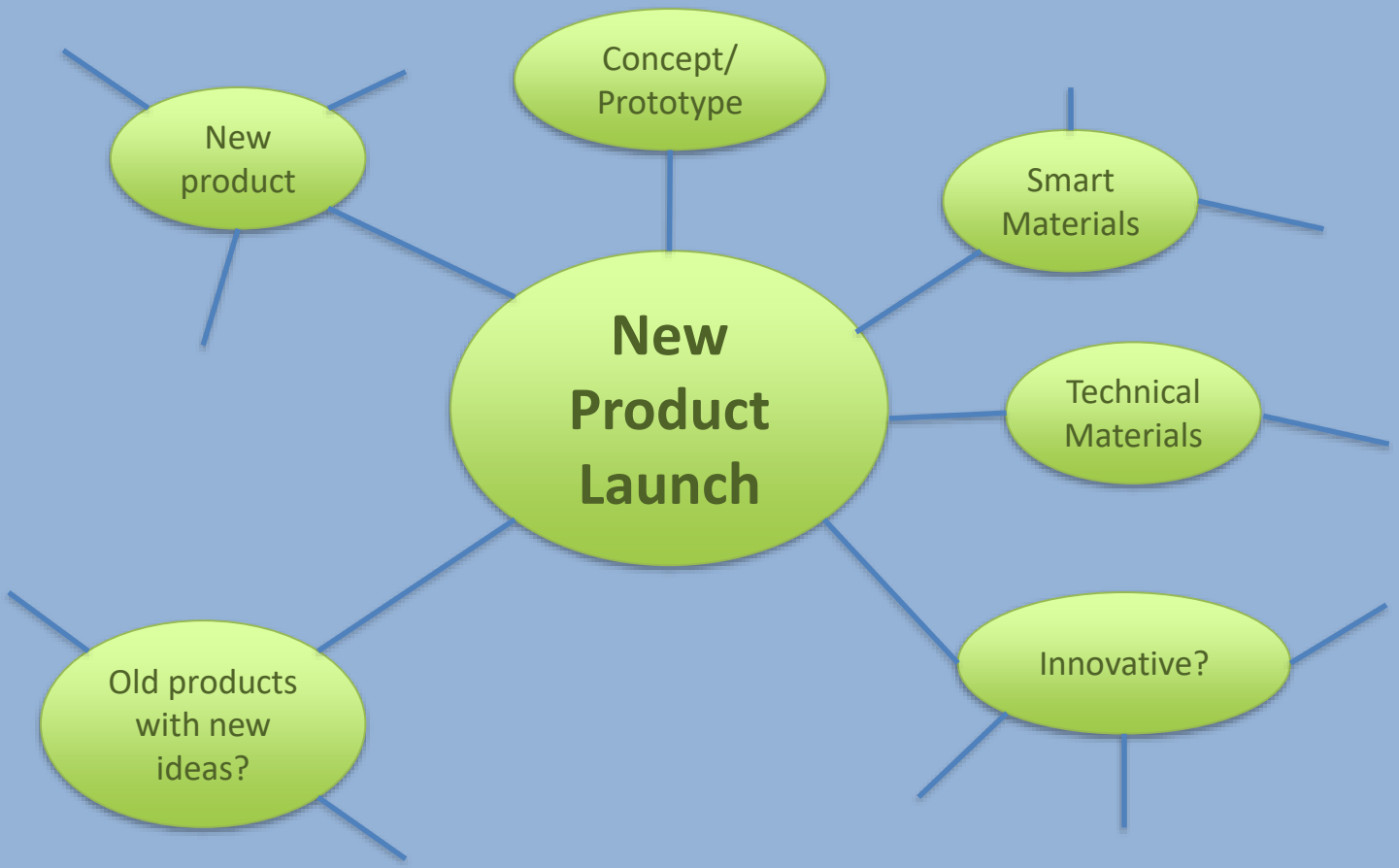


Potential Problems I have found for this brief:
You need to list all potential problems you could see coming from each brief.
1.
2.
3.

Potential Products I have found for this brief:
You need to list all of the potential rough ideas for products you can come up with for each brief.
1.
2.
3.

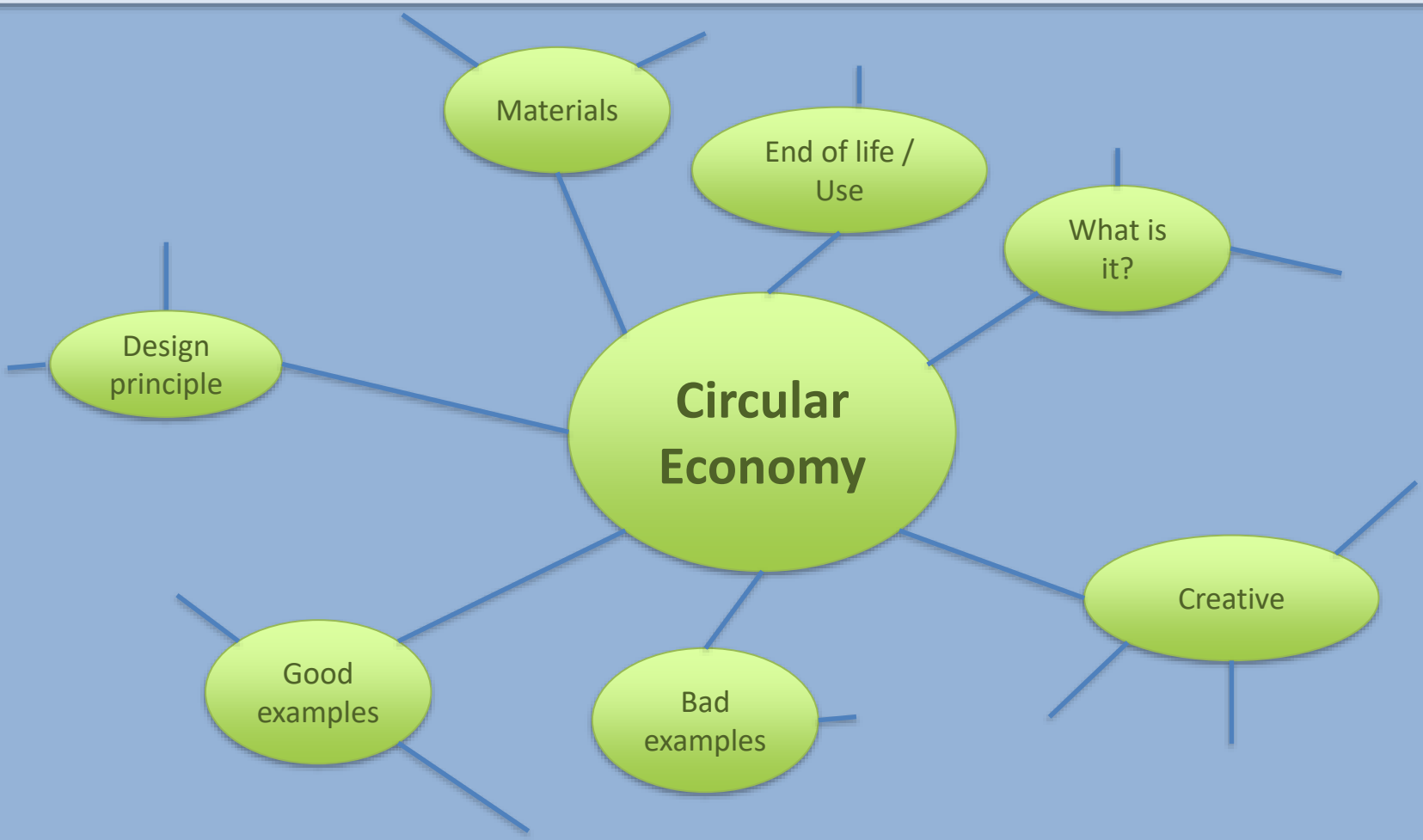
Analysis of the Contexts

New Product Launch– Produce a **concept/prototype** of a new product that incorporates the **innovative** use of **smart/technical materials** or innovative support material(s) for display at its launch.



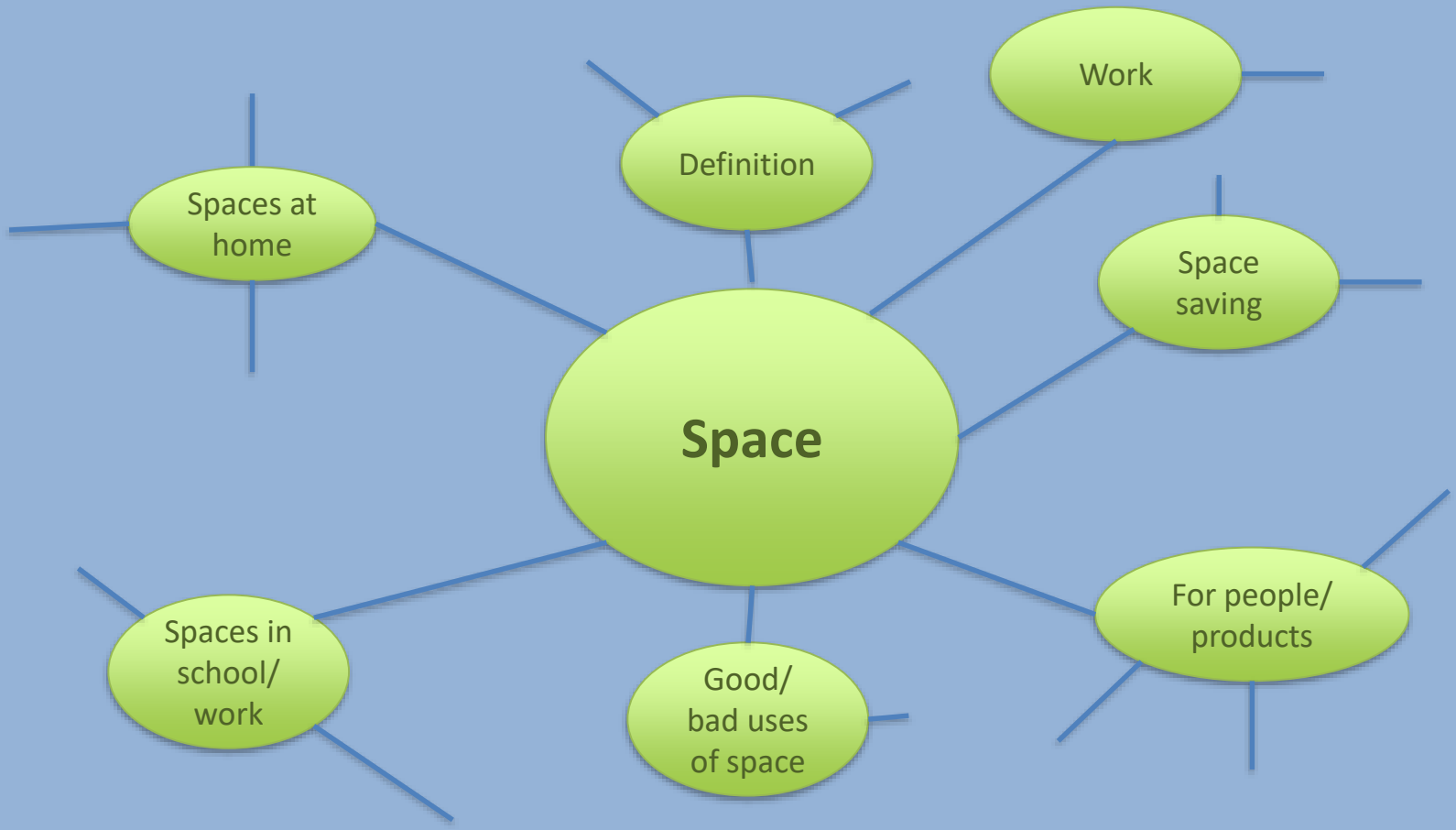
Analysis of the Contexts

Circular Economy– Design and make a **creative** and **innovative** product that has the circular economy as its primary design **principle**.



Analysis of the Contexts

Space – Consider interpret the word "**space**" and use it to **redefine** an area at **work** or at **home**.



Analysis of the Contexts

Potential Problems I have found for this brief:
- People not being able to improve at certain skills
- People not understanding certain aspects of a game / sport
- Getting people interested in certain games / sports

Potential Products I have found for this brief:
- A product which helps improve a certain skill within a sport of game
- A product which informs someone of a new sport
- An aid which helps disabled people to get involved with a game or sport

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User Profile / User Needs & Values

You must ask important questions which link to products / designers / companies they like or have an interest in.

User profile:

- Information about your user / Age/ Interests or hobbies / Home life / Who they live with? Do they have a job?
- Any images which shows the users favourite products.

Questionnaire:

Looking at the three contexts, which one does your user prefer? And why?

What problem / problems does your user want you to explore / solve?

Now you need to find out as much as you can about the problem….

Where is it? / Who does it effect? / Why is it a problem? / How might it be solved? / What products are involved? / Why hasn't it already been solved?

Now you want to find out a bit more about what will make the product work for the user…

Function: How should it do it? / What does the user want it to do?

Form: What are your user's favourite Brands / Colours / Favourite products? / Traditional, Modern, Retro.

Cost: How much would your user be willing to spend to solve this problem? / Why would they choose to spend this amount?

Environment: Where would this product go? / Transportable? / Fixed? / Type of surface? / What other product are nearby? / What colours, shapes, materials are there nearby?

Size: Are there any measurements that will be important to this design?

Materials: What materials do they prefer?

Photo Of User

Level 6 and Up:

Talk about the user's values. What do they truly value as a person.
Do they Recycle? Are they Vegan? Do they buy sustainable products?

Conclusion (User Needs / Wants):

Explain the problems your user has found.
What have you found out from the questionnaire? (Colours/Shapes/Function/Cost etc….)
What does you user want from the product you are going to design? (Size/Shape/Colours etc…)
What do you need to find out next? Show the examiner what to expect on the next pages.

Questionnaire / What to ask your user?

Looking at the three contexts, which one does your user prefer? And why?

What problem / problems does your user want you to explore / solve?

Now you need to find out as much as you can about the problem….

Where is it? / Who does it effect? / Why is it a problem? / How might it be solved? / What products are involved? / Why hasn't it already been solved?

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Environment: Where would this product go? / Transportable? / Fixed? / Type of surface? / What other product are nearby? / What colours, shapes, materials are there nearby?

Size: Are there any measurements that will be important to this design?

Materials: What materials do they prefer?

Other:

e / User Needs & Values

You must ask important questions which link to products / designers / companies they like or have an interest in.

User profile:

Mr Mason is a Design and Technology teacher who loves his job and design.
He also enjoys Music and Sport, whether it is playing or watching.
Mr Mason is a road cyclist and enjoys playing football. He also goes to the gym twice a week.
He loves being outside and has a connection with nature.
He used to be a DJ at University and enjoys producing house music in his spare time to relax and unwind. Mr Mason used to play the guitar and sometimes picks it up.

Values:

Mr Mason values the planet and nature. He tries to shop responsibly and doesn't like buying a lot of plastic products.

Questionnaire:

Where is it? / Who does it effect? / Why is it a problem? / How might it be solved? / What products are involved? / Why hasn't it already been solved?
Looking at the three contexts, which one does your user prefer? And why?

What problem / problems does your user want you to explore / solve?

Function: How should it do it? / What does the user want it to do?

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Size: Are there any measurements that will be important to this design?

Materials: What materials do they prefer?

Conclusion (User Needs / Wants):

My user needs space at his work and at home. He has a number of large objects such as his road bike and guitar that need storage. He has a lot of equipment for his road cycling that is all over the house and transports the equipment in his car.
My user wants to have all of his equipment to be easily accessible. My user also wants all product that are made for him to be made from sustainable materials as he is a D&T teacher.

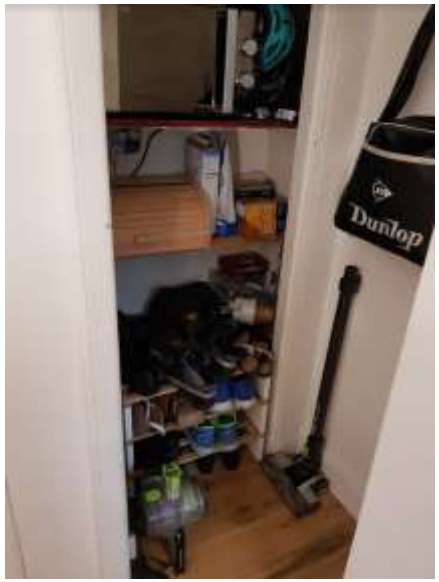
pecification points from Problems

Problems I have found:

- In some areas of the house there are shoes and sports equipment all over the floor and not really anywhere for it to go.
- The bike itself could slip over and fall if knocked.

Possible Specification Points:

- My product **must** store multiple items.
- My product **might** need to store the bicycle as well.



Some of your spec points will be a must and some will be a might if you are not sure about them!

On this page you need:

- An introduction box
- Images of the area
- Discussion about the **SPACE**
- Problems you have found
- Possible spec points

Problems I ha
You need to co
problems. Try
many problem
space and wha
Think about:

- **The space get in the**
- **How is the used?**
- **What mes**
- **What spec are there?**
- **Any more you can s**

Level 6 and Up:

Possible Specification points:
Make a list of some specification points that you could add to your final spec from your research. What have you found that will be useful?

ch Into Chosen Problem

n:
y information do you want to find out on this page?
it help with your project?

different angles
ut the space: materials you can see, important colours, sizes, where is this space in the house? Are their any key prod
e as inspiration? Branding- logos you can see, favourite brands,

continue to find problems. Try to find as many problems with the space and what's in it.

he space used?
messy?
they try to tidy things at the moment? What is wrong with this?
ecific products are there?
e constraints do you have? Does it have to be a certain size/ Shape?
e uses the space? Why could they be a problem?
any safety risks? Little kids/ pets/ animals/ dust/ water/ moisture/ cold/ hot/ plug sockets

ve you found that will be useful?
you need to think about next? *Product sizes? Products out there that ve these problems? Brands? Further questions for user?*

Level 6 and Up:
Possible Specification points:
Make a list of some specification poi
could add to your final spec from you
USE the FORM/ FUNCTION/ etc he

Research into chosen problem

I am looking at the space I am going to re-define. I will look at pictures of the area and discuss the problems I have found.

There are several areas in my user's home that are quite messy where there is sports equipment and clothing on the floor. There isn't loads of storage in the house for these items to go. Some of the items are quite expensive and could get damaged if trodden on. I may be focusing on the area around the bicycle in the dining room and where the helmet and accessories are stored near the microwave. There is potential for a multi functional item that could sort out the mess. There are loose items everywhere and it is difficult to remove the helmet from beside the microwave.

The cupboard area stores a range of items including the hoover, work bags and art supplies. The door has been removed for more easy access. There is some floor space that could be used.

Possible Specification Points:

- My product must store multiple items.
- My product might need to stand against a wall for extra support.
- My product might need to store the bicycle as well.
- My product might need to hold clothing shoes as well as accessories.

Problems I have found:

- In some areas of the house there are shoes and sports equipment all over the floor and not really anywhere for it to go.
- Some cycling equipment is expensive and may get damaged on the floor.
- The bike itself could slip over and fall if knocked.
- All of the shoe storage in the house is already full which is a problem.

Items / Products that I am focusing on

On this page you need:

- Images of the individual / different products that are causing problems or need clearing up.
- Some information on the products
- Sizes of the products which will be very useful.

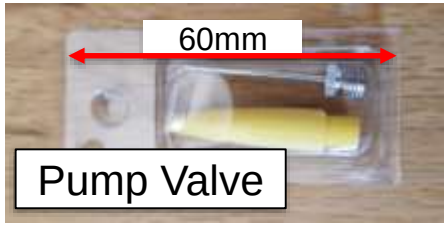
Problems I have found:
You need to continue to find problems. Try to find as many problems with the products. Think about:

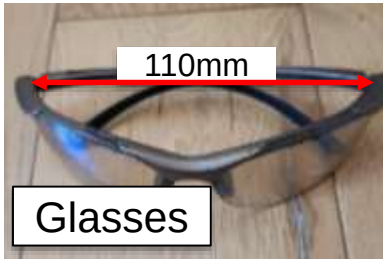
- **The different sizes of the products**
- **Why are they different?**
- **Do any of the products have any specific requirements?**

Level 6 and Up:
Possible Specification points:
Make a list of some specification points that you could add to your final spec from your research. What have you found that will be useful?

Items / Products that I am focusing on

On this page I am looking at the specific products that are causing a problem and will analyze them in terms of their size and their shape.





Possible Specification points:

- My product will need to store a number of different sized products
- My product may need to store products that are dirty.
- My product may need to store clothing as well as cycling accessories.
- My product may not be storing the bike as it is large and will not fit in the space I am looking at.

Problems I have found:

- All of the products are different sizes.
- Some of them are soft material and some are hard / more difficult to store.
- All of the products are durable apart from the bike which will need to stand up and not topple over.

Product Analysis

On this page you need:

- To analyze an existing product that you are going to re-design.
- Or a product/products that are similar to what you are thinking of designing.

The key words you need to use are:

- **Function – What it does / Does it do it well?**
- **Form – Colours and shapes**
- **User– Who it is for?**
- **Materials – What is it made from?**
- **Size – Why is it this size?**
- **Safety – Is it safe to use and why?**
- **Environment – Where is designed for? Why?**
- **Quality – How high is the quality? How do you know?**
- **Durability – Will it last a long time?**
- **Human Factors – Ergonomics**
- **Social, Moral, Economic Factors –**

Does it appeal to the needs and wants of the user?

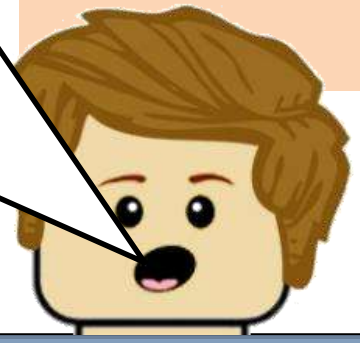
Level 6 and Up:

Possible Specification points:
Make a list of some specification points that you could add to your final spec from your product analysis.

Problems I have found:

You need to continue to find problems. Try to find as many problems with the products you are analyzing. Think about:

- **Cost**
- **Materials**
- **Size**
- **Sustainabililty**



Product Analysis

I am conducting a product analysis of existing sports equipment storage to see what problems I can find and to learn from this when I start designing.

Aesthetics: This produce is a simple oven top / hob with frying pan, plate and food. The food and implaments are brightly coloured which makes the set more fun, apart from the knife and slice. The images printed onto the food are bold and clear so that children can be sure of the different types of food.

Function: The function of this product is for children to pretend they are cooking a range of foods. The foods can separate using Velcro which is fun as children can cut them in half. It functions well as the pieces are easy to pick up and interact with. The different dials on the hob are bright and easy to understand .

Cost: This product is priced at £30.00 which is quite expensive for what you get. This price will be down to the material and the quality of the product. I would rather spend some more money for a higher quality product.

Durability: Given the hardwood this kit is made out of it is very durable and tough. It would withstand a lot of play and would be hard to chip or splinter due to the properties of the natural hardwood. The parts are also varnished to protect them and make the surfaces tougher.

Safety: This product is very safe apart from the two circular parts which could be dangerous if swallowed. None of the product is too heavy and there are not sharp points which could cause injury. There are also no electrical parts.

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Materials: This product is made from a natural timber which is Beech. This means that it is a high quality product. It is painted with a non-toxic paint and varnished to protect its finish. Any non painted parts have been sanded and varnished as wax could be toxic for young children.

Manufacture: This product has been manufactured by hand which means that some time would have gone into it. It would be made in a a batch and would not require any CAD/CAM. Due to the time taken to manufacture this product, the price would be much higher than if it was made using CAD/CAM. The quality will be higher also due to this.

Possible Specification Points:

- My product will cost less than £20 for the user to buy.
- My product will be made from sustainable materials.
- My product will be creative and eye-catching.
- My product might have modular features that can be added on.

Problems I have found:

- Some sports equipment is very expensive.
- A lot of sports equipment storage is made from metal which is not sustainable and not all of it is recyclable.
- A lot of sports equipment storage is very large and bulky / unattractive.

Research Summary & Potential Briefs

- How did you narrow down your brief from the initial 3 to your chosen area?
- What did you find out from the interview?
- What did you learn from the research in your chosen area?
- What have you taken into account looking at the products that need storing?
- What might you use from the product analyses and designer/ company research?
- Is there anything else you have learned from your research work?

You need to write out up to 4 different briefs for the product you will design and manufacture:
Possible brief 1:
Possible brief 2:
Possible brief 3:
Possible brief 4:

Thoughts about the briefs:

What are your thoughts on the briefs you have come up with?
Which ones have potential problems?
Which ones are more practical or realistic?
Think about materials available at school and size of the product!

Level 6 and up: (User opinion of the briefs)

Talk to your user ands get them to discuss the briefs and tell you which one they prefer from all four. Make sure they give reasons as to why the chosen one is their favourite!

Research Summary & Potential Briefs

I decided to go with the space context because it was more open and I had a lot of ideas as to what problems I could find relating to this. Once I had found a user it was quite easy to explore different spaces that they had and the problems linked to this. Because they play sport and have a lot of equipment I knew it would probably relate to this.
From the interview I learnt that the space was probably going to be in the house or in the car, looking at sports or cycling equipment.
After analyzing the specific space and looking at the product in it I found problems as it is quite small and there is a lot of equipment / products requiring storage. It was very useful measuring all of the products so that I have an idea of the size the product might be.
I have also learned that my user like sustainable products and this will play a major part in my design and making to ensure I use sustainable materials and it is fully recyclable.

Possible brief 1: I will design and prototype a product which stores a road bike and all cycling equipment.
Possible brief 2: I will design and prototype a modular storage unit which can be added to and upgraded.
Possible brief 3: I will design and prototype a storage unit which is just for cycling accessories and is free standing.
Possible brief 4: I will design and prototype a product which stores cycling shoes, helmet and accessories which will be fitted to the wall.

Thoughts about the briefs:

I like the idea of the product storing the bike as well as the equipment but this may make it much larger. Also, my user is planning to eventually store the bike in the shed so it may not be used for this purpose. The modular idea is good as it means it will cost less initially and it could be built up depending on the equipment available. I think the most useful design will store all of the important items that are needed before a bike ride so that it is all in one place.

User opinion of the briefs :

After reading all four of the briefs I like brief 3 the best. I don't want anything attached to the wall as the wall as there isn't the wall space. I also don't think the bike needs to be stored as it is large and can go in the shed. If it is free standing ti means it can be moved around if needed.

Final Brief & Initial Specification

Heading	Spec Points	How they will be tested
Function	• My product will securely hold cycling accessories • My product will provide easy access to the products it holds • My product will possibly be attached to the wall to provide support • My product will possibly have an opening part which will provide easy access	I will put all of the items into my models that I make and in the final product. I will ensure I can take all of the product out easily. I will see how easily the product attaches to the wall.
Form	• My product will fit in with the colour scheme in the dining room • My product will use subtle colour to match the products	I will take pictures of the room and make sure that the materials and colours use go perfectly with the room.
User	• My product will be tested by my user throughout development • My product will use materials that appeal to my user	I will continually show my product to my user and ask their opinion when testing and developing.
Materials	• My product will use plywood as this is manufactured board • My product will use a small amount of re-used acrylic • My product will use	I will make sure I only use these specific materials throughout manufacture.
Size	• My product will fit neatly against the wall in the corner • My product will not be higher than the microwave • My product will fit all the different sized items inside easily	I will measure all of the environment to make sure my development takes this into account and fits perfectly. I have already measured the items to be stored.
Safety	• My product will not topple and will sit flat on the ground • My product will not get in the way of operating the microwave • My product will not be a trip hazard and will not stick out	I will make my product completely level with or without products in and will use a spirit level when manufacturing.
Environment	• My product will fit neatly inside the alcove next to the fireplace • My product will use natural colours and white to blend in with its environment	I will measure all of the environment to make sure my development takes this into account and fits perfectly. I have already measured the items to be stored.
Quality	• My product will be made using methods which best reflect the highest quality • My product will use laser cut components which will improve the quality • My product will be finished using wax and plastic will be	I will check with the technician and the teacher that the technique I am using is the best for quality. I will check my final product against one from a shop.
Manufacturing	• My product will be made using the most cost effective methods • My product will be made using hand techniques to cut down on costs	I will check with the technician and the teacher that the technique I am using is the best for manufacture. I will make sure hand techniques are the way to go before proceeding.
Sustainability	• My product will only be made from sustainable materials • My product will only use recycled thermoplastic • My product will use reclaimed aluminium	I will check to make sure exactly where the materials I am using has come from. I will use the box of Acrylic off-cuts when manufacturing.
S.M.E	• My product will use materials that have come from a sustainably managed forest • My product will use materials which are cost effective leading to a cheaper product	I will check to make sure exactly where the materials I am using has come from.

Final Brief & Initial Specification

9 – 10 Marks: Written a comprehensive, relevant specification, including a range of objective and measurable criteria, to direct and inform the design and manufacture of a prototype.

3 – 5 Marks: Written a satisfactory specification, including some key points, to partially inform the design and manufacture of a prototype.

Final Brief: I will design and prototype a storage unit for cycling accessories that could be upgraded to store cycling clothing. The product will be mainly be storing cycling shoes, helmet, gloves, valves, energy gels and glasses. The product will be going against the wall in the corner of my chosen space and it's primary function will be to hold these products and be easily accessible. It may have a part which opens to make certain products easier to access and the unit may be attached to the wall depending on the final design outcome.

Problem I am solving: My user has an area in his house where it is messy and unorganized. My user cycles regularly and needs quick access to his cycling gear which at the moment is spread all over the place and hard to find.

Heading	Spec Points	How they will be tested
Function	• My product will securely hold cycling accessories • My product will provide easy access to the products it holds • My product will possibly be attached to the wall to provide support • My product will possibly have an opening part which will provide easy access	I will put all of the items into my models that I make and in the final product. I will ensure I can take all of the product out easily. I will see how easily the product attaches to the wall.
Form	• My product will fit in with the colour scheme in the dining room • My product will use subtle colour to match the products	I will take pictures of the room and make sure that the materials and colours use go perfectly with the room.
User	• My product will be tested by my user throughout development • My product will use materials that appeal to my user	I will continually show my product to my user and ask their opinion when testing and developing.
Materials	• My product will use plywood as this is manufactured board • My product will use a small amount of re-used acrylic • My product will use	I will make sure I only use these specific materials throughout manufacture.
Size	• My product will fit neatly against the wall in the corner • My product will not be higher than the microwave • My product will fit all the different sized items inside easily	I will measure all of the environment to make sure my development takes this into account and fits perfectly. I have already measured the items to be stored.

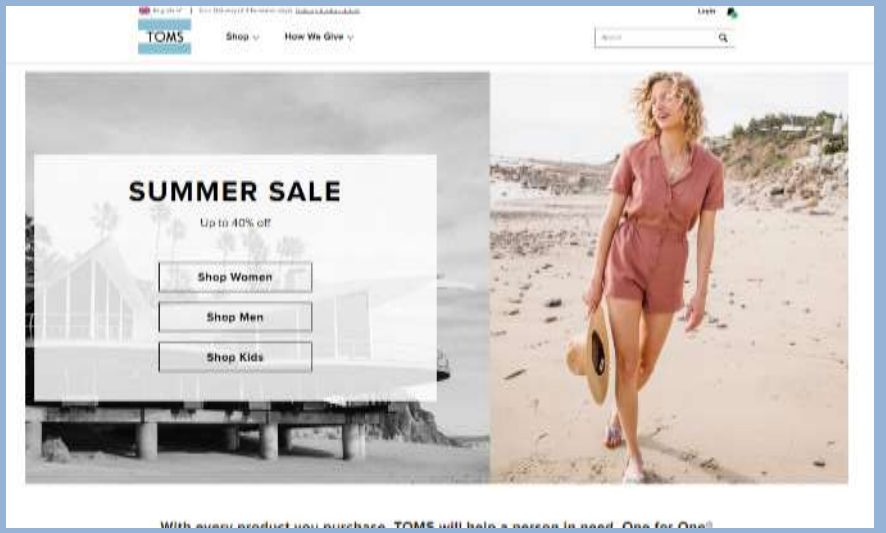
DEADLINE DAY:
MONDAY 17TH SEPTEMBER

Page	Name	Completed?
1	Analysis of the contexts	
2	User Profile	
3	Research - Chosen Area / Product Research	
4	Product Analysis	
5	Research Summary & Potential Briefs	
7	Initial Specification	

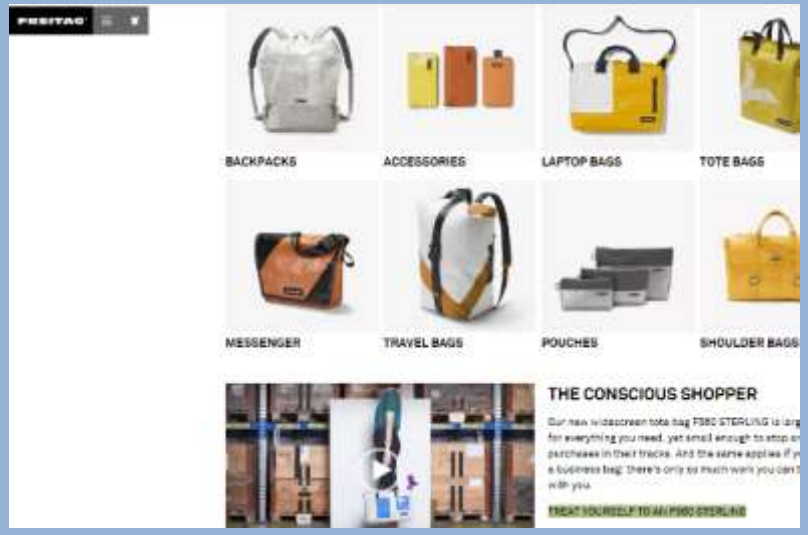
Work of Designer / Company

Green Toys

Toms Shoes



Freitag



Patagonia

Research into your chosen area

Now the fun bit, depending on your chosen area you need to research this in detail! You could do one or two pages if you want.

Lets use the example of Skateboarding:

I would research:

- **The history of skateboarding**
- **The products / Clothing / Gear related to skateboarding**
- **What skateboarding involves**
- **Lots of pictures of skateboarders**
- **Information about different skateboarders from around the world**
- **Any related articles / magazine articles about skateboarding linking to your chosen target group**

What you MUST have on this page:

1) *Pictures of everything to do with your chosen area.*
2) *Articles / Write up from the internet / Research from books etc…*
3) *Important problems you have found whilst researching in your chosen area*
4) *A conclusion summarising exactly what has been useful about this page and what information you will use for your project.*

Work of Designer / Company

About the company:

Green toys are a company that make toys made from recycled milk jugs. All of their packaging is also 100% recyclable. They are a fantastic company with a great set of values which is why I have chosen them to research. Their products are also educational even if it means that the children playing with them are learning about recycling. The company is growing and so is their product range.

Products:

Green toys sell a range of products from diggers and trains to dough sets and food based products. I am most interested in the food and healthy eating products as they are a great way of getting young children thinking about healthy food and eating from a young age. The pizza set is great as children can design their own pizza and also cut it into pieces using the pizza cutter. The grow your own hers and vegetables are great too as young children can get into growing food and understanding where it comes from.

Products on the market:

Their mission statement:

Conclusions from this page of research:

I can conclude from this page that sustainability is important as part of my product and I will aim to make a product that is not only made from sustainable materials but also could aim to educate young children about recycling or reusing other products. I really admire the work of this company and I love the range of products they have on offer. I am interested in the way that all of their food toys are healthy and encourage the user to engage with it and learn at the same time.

NEEDS / WANTS / VALUES: This company has a strong set of values which are to improve our planet by reusing waste products and making them into useful educational toys. They value what their customers think and they aim to get all of their customers wanting a better environment and planet for their children.

Specification Improvements

Have you covered the areas below?

- **Form/ Aesthetics-** colours, shapes, styles
- **Function-** what should it do? List all the things big or small
- **User needs-** What do they want? What should it do? Any specific needs? Colours? Sizes? Where do they want it to go? How much should it cost? Why do they want it?
- **Social/ Moral/ Economic-** What should your product **cost** the user? What should it cost to make?

  What positive impact on society should it have?

  Are there any moral issues to the product you should think about?

  Sustainability- what will make it good for the environment?
- **Quality-** specific examples of how you will make it the highest quality *(sanding, cutting, waxing, painting/ varnishing, gluing, how it works, acrylic edges, aluminium finishes, wood joints etc.)*
- **Sizes (in MM)-** how big should it be? Max and min sizes. What about the separate parts? How big are the things it holds?
- **Materials-** what sort of materials should you use? What are your choices?
- **Ergonomics-** is there anything you need to do to make it fit the user? Easy to get things out etc.
- **Safety-** specific things relating you your product. More than "*sand the edges*" or "*no sharp corners*"!

Which areas could be improved from the first 2 sections?

As a whole, everyone has hit all of the key areas of the marking criteria. The reason why some people have lower marks than other is down to a few key things. Some people have not been specific enough about why they have gone down a certain path. Some need to make sure they have continually found problems throughout research and some people need to discuss the needs / wants of their users.

1

Problems – You need to be finding problems from everything! Product Analysis/ Interview with the user. Add some boxes discussing problems for most pages.

2

User Needs and Wants – Some of you haven't discussed your user's need and wants and made it obvious. Add a box discussing these. Also add a box onto your research conclusions page discussing if you are meeting your user's needs/wants with your final brief.

3

Explain why you are doing a particular thing for each page and make it clear to the examiner why you doing it. Is it worth while?

A02 Design and Make a Prototypes that are fit for purpose

AO2 Design and make prototypes that are fit for purpose	
Definitions used in AO2	
Design	the generation and development of ideas that can be presented to a third party, and can be evaluated and tested (however, the actual analysis and evaluation forms part of AO3).
Prototype	an appropriate working solution to a need or want that is sufficiently developed to be tested and evaluated (for example, full sized products, scaled working models or functioning systems).
Fit for purpose (prototype)	in addition to being a working solution, addressing the needs/wants of the intended user.
	making skills can be assessed through the designing and making of the prototype(s), as well as the nature and quality of the final prototype.

Generating and Developing Design Ideas

(c) Generating and developing design ideas [AO2] *The candidate has:*	Band
24 – 30 marks • considered a range of design strategies, techniques and approaches and applied an iterative design process to generate and communicate a range of initial ideas which fully reflect all requirements. • fully identified and considered social, moral and economic factors which are relevant to the context and potential user(s). • clear, effective and detailed use of testing to evolve ideas and to refine their design decisions. • developed a proposal, including comprehensive and relevant details of materials, dimensions, finishes and production techniques, which clearly address all requirements of the design brief and specification. • demonstrated sophisticated use of skills/techniques to clearly communicate ideas and proposals to a third party.	4
16 – 23 marks • considered a range of design strategies, techniques and approaches and applied an iterative design process to generate and communicate a range of initial ideas which generally reflect requirements. • identified and considered social, moral and economic factors which are generally relevant to the context and potential user(s). • clear and generally effective use of testing to evolve ideas and to refine their design decisions. • developed a proposal, including relevant details of materials, dimensions, finishes and production techniques, which address most requirements of the design brief and specification. • demonstrated good use of skills/techniques to communicate ideas and proposals to a third party.	3

What is important to include in this next section

Informal Sketchbook

Formal Sketch book

1) *Initial Ideas*
2) *Good Evidence of Sketching / Modelling / CAD*
3) *Testing against your specification*
4) *Developmental Iterations*
5) *Physical Testing / Functional Development or Modelling*
6) *Opinions from your user – Development based on their feedback*
7) *Logo's / Branding*
8) *Consider Ergonomics / Environmental & Social Impact*
9) *Investigate the work of a designer or company to help inform your designing (Airbus/Apple/Dyson/Starck/Williamson)*
10) *A clear CAD page of the final prototype (High Quality / Detailed)*
11) *Detailed proposal with all dimensions*

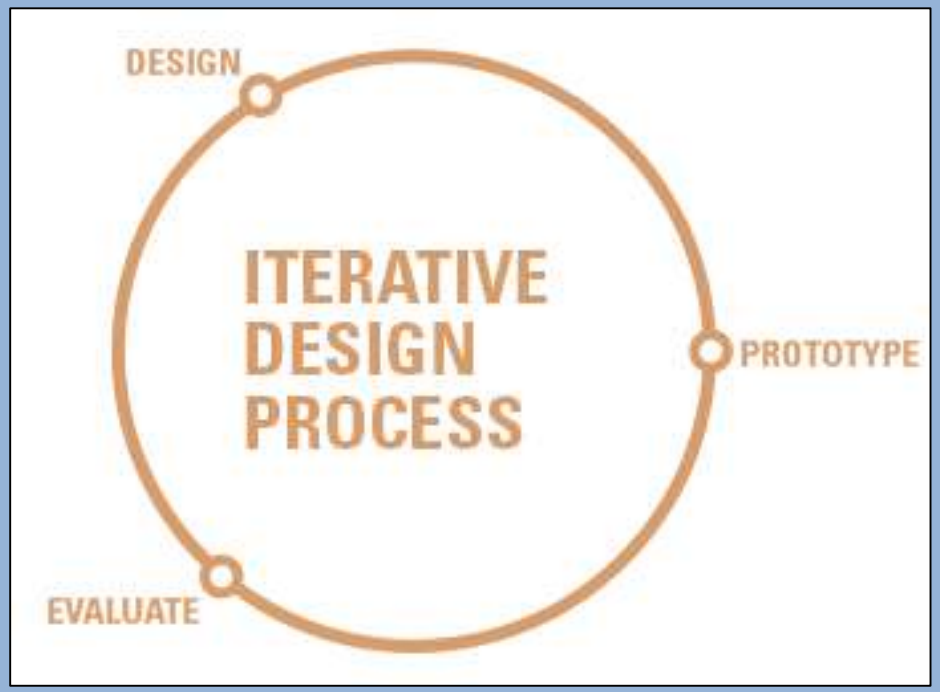
You can use any of these methods when designing and developing:
Formal and informal 2D and 3D drawing. 3D Modelling. CAD Modelling. System and schematic diagrams. Annotated sketches. Exploded diagrams. Models. Presentations. Written notes. Flow diagrams. Working drawings. Schedules. Audio and visual recordings. Mathematical modelling. Computer-based tools.

The Iterative design process

dyson

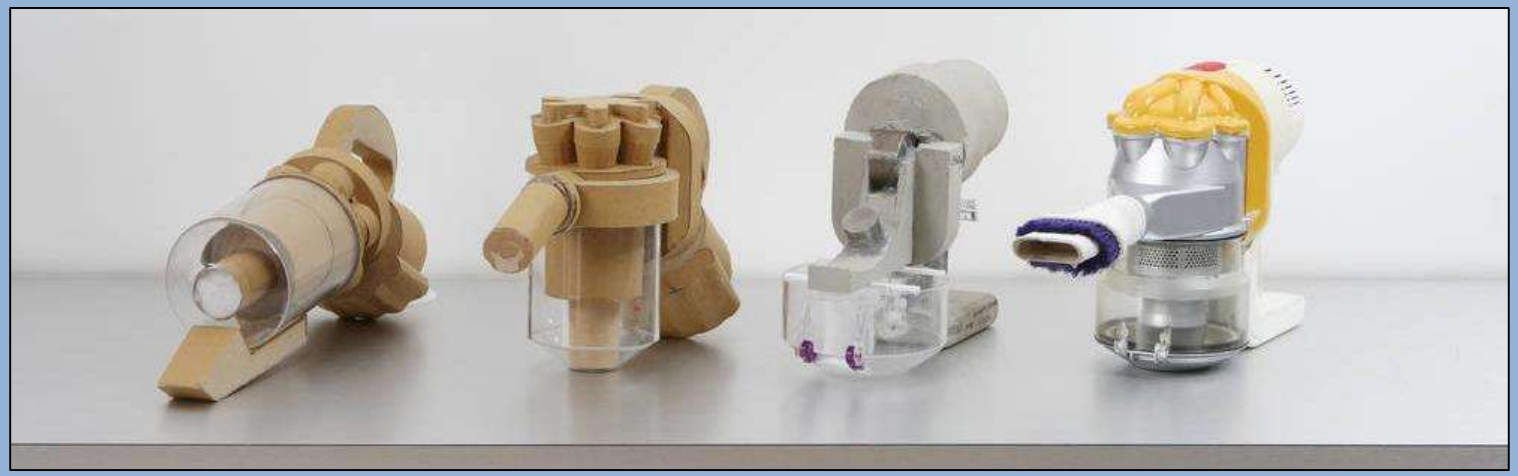
This awesome video goes into some detail about James Dyson and his ideas. Look out for why he thinks the iterative design process is so important to him?

The Iterative design process



Iterative Design is a design strategy or philosophy. It is used to avoid design fixation which is when designers become overly attached to a particular idea.

Iterative design is a cyclic approach. Each Iteration of a design is tested and evaluated. Changes and refinements are then made, leading to a new Iteration.



How help pages will be laid out from now on

There will be two example pages, a reminder to Think, Test, Reflect on specific pages and as usual a box with a list of areas you must cover for each page.

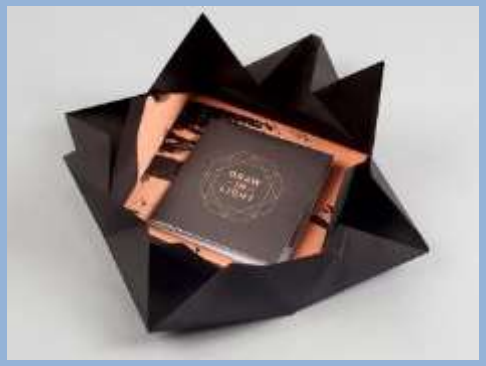
A level 5 / 6 Example Page

A level 8 / 9 Example Page

What you MUST have on this page:

1) *A summary of all of the research you have conducted*
2) *A list of things that you need to take forward into designing*
3) *At least three different briefs for the product you are going to design and prototype*
4) *A paragraph discussing the different briefs and which one you will choose to take forward*

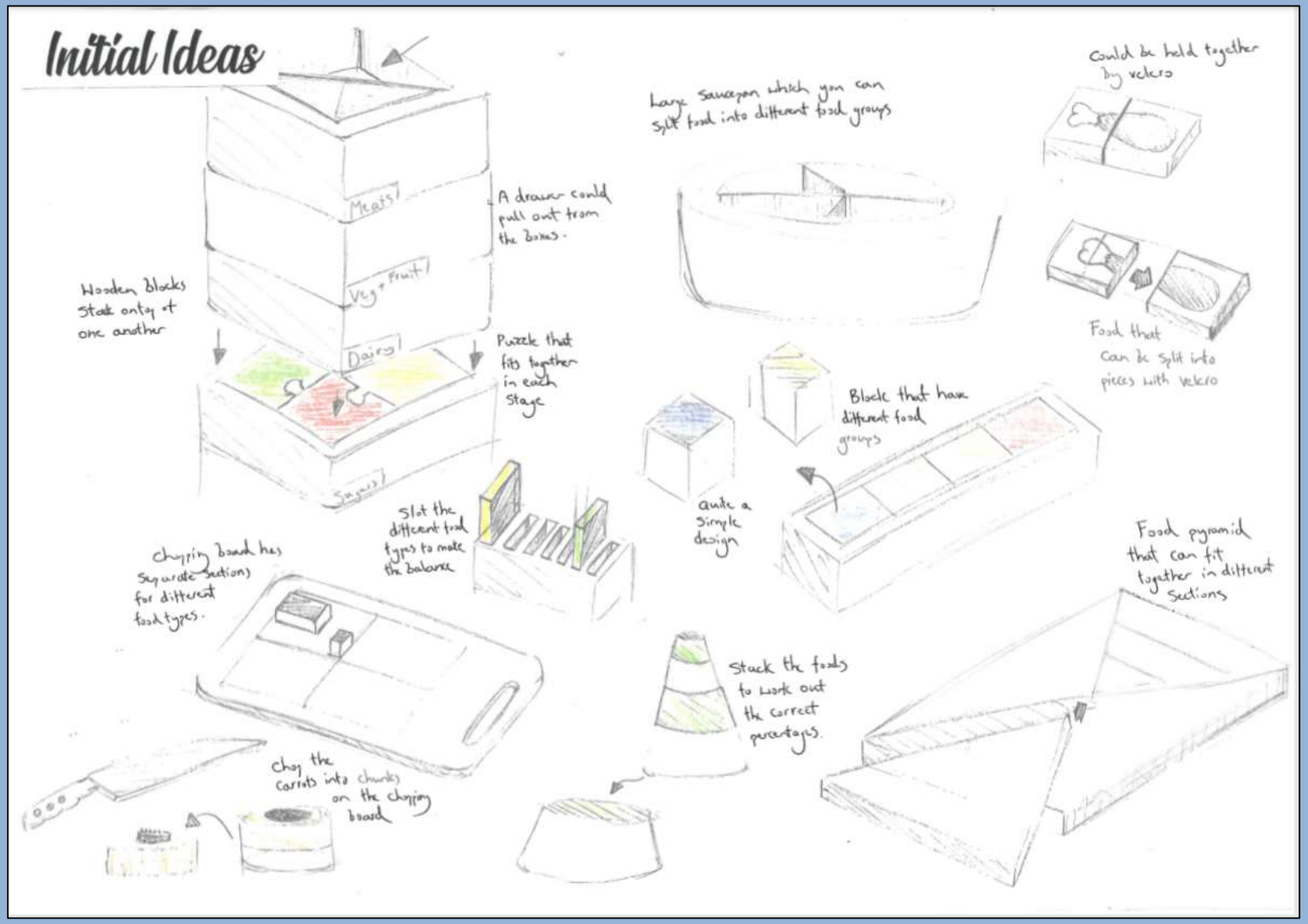
Inspiration Board



Initial Ideas

level 5 / 6

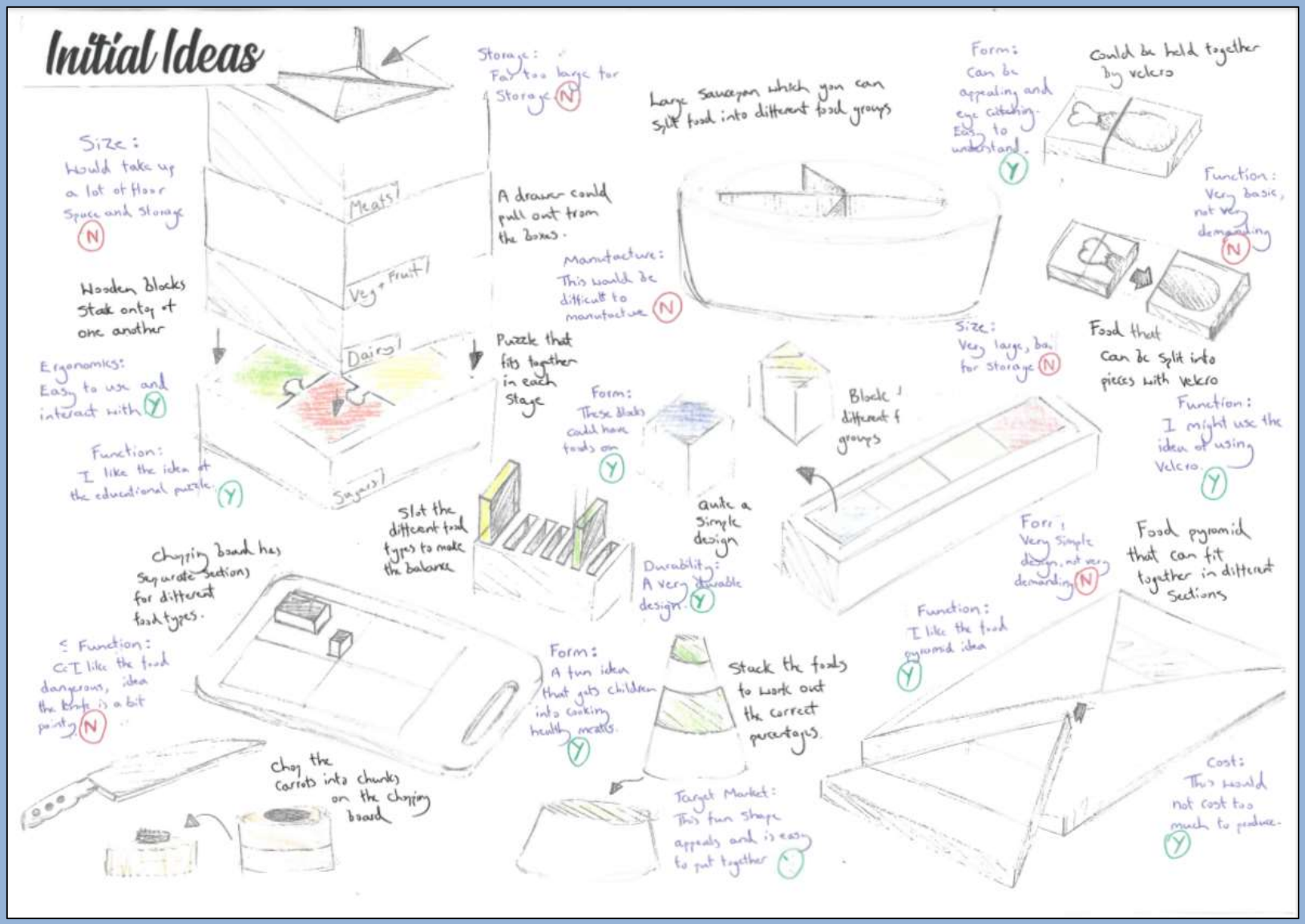
A range of ideas with annotation. The quality of drawings doesn't matter but the range of creative ideas.



Initial Ideas

level 7 / 8

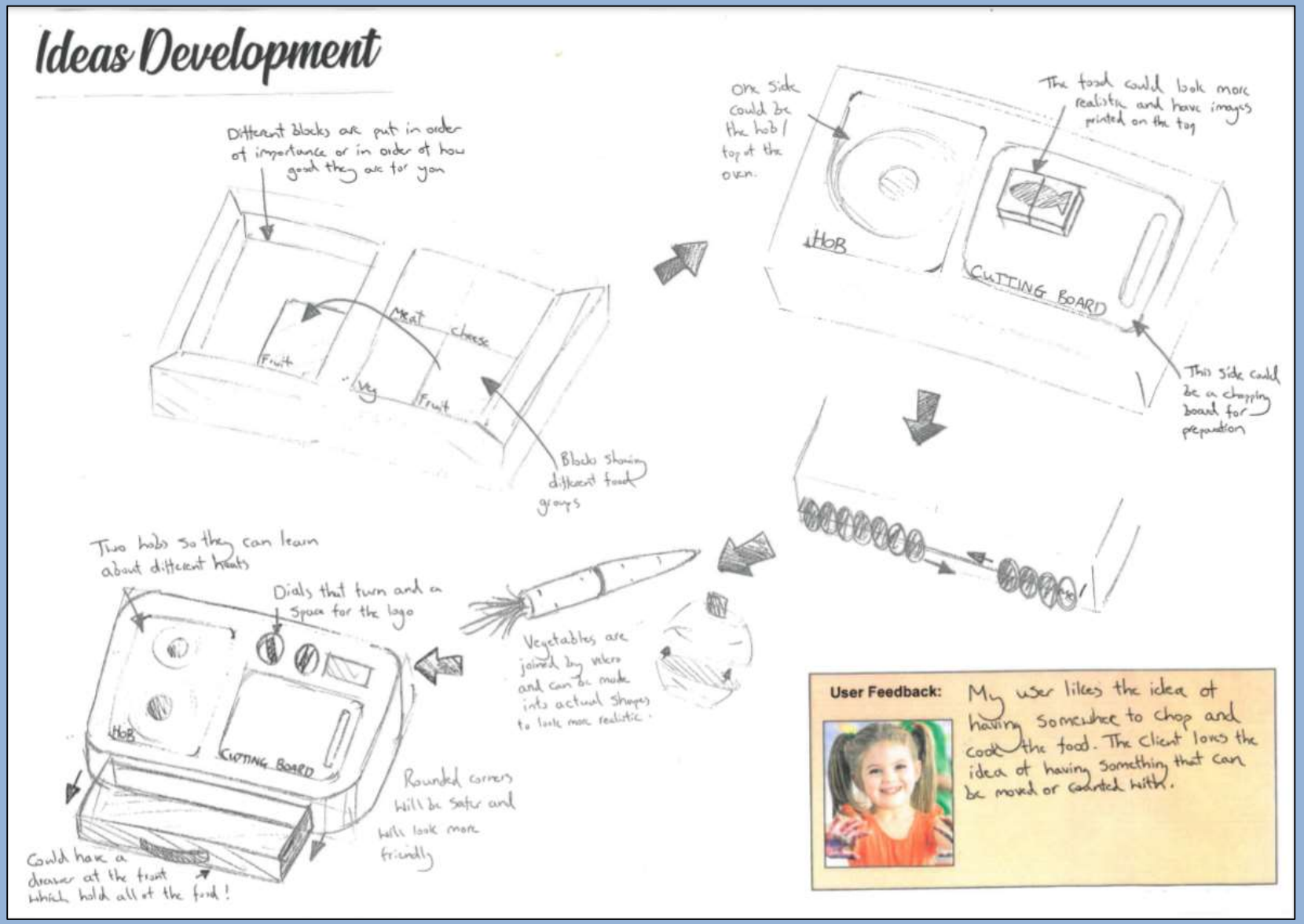
The difference is making sure you are linking your annotation to your specification points. In the example I have put a Y for yes or N for No to show whether or not it correctly accomplishes the spec point



Ideas Development

level 5 / 6

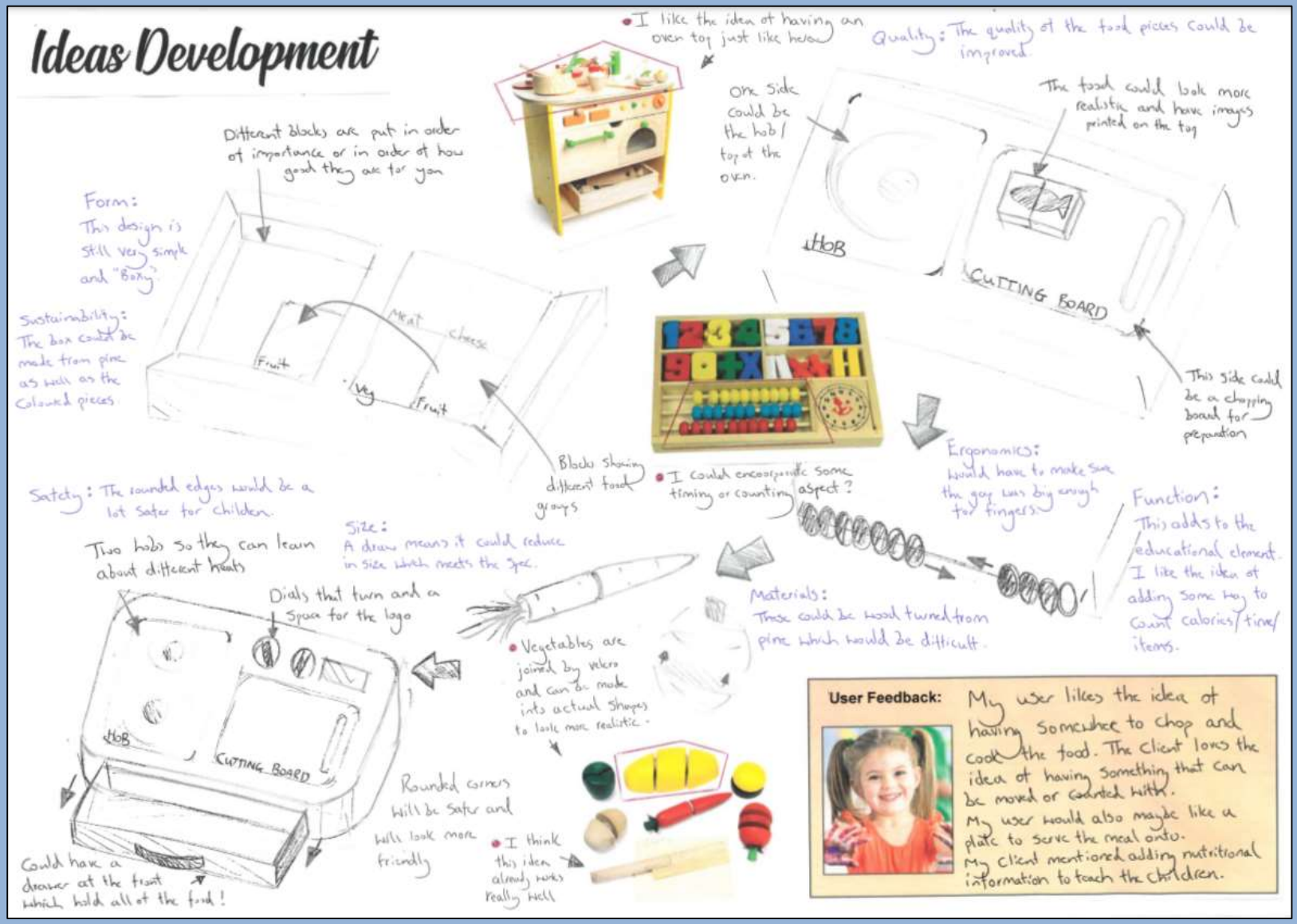
Clear development is show of a chosen idea which can be a mixture of all your favourite bits of your original design ideas



Ideas Development

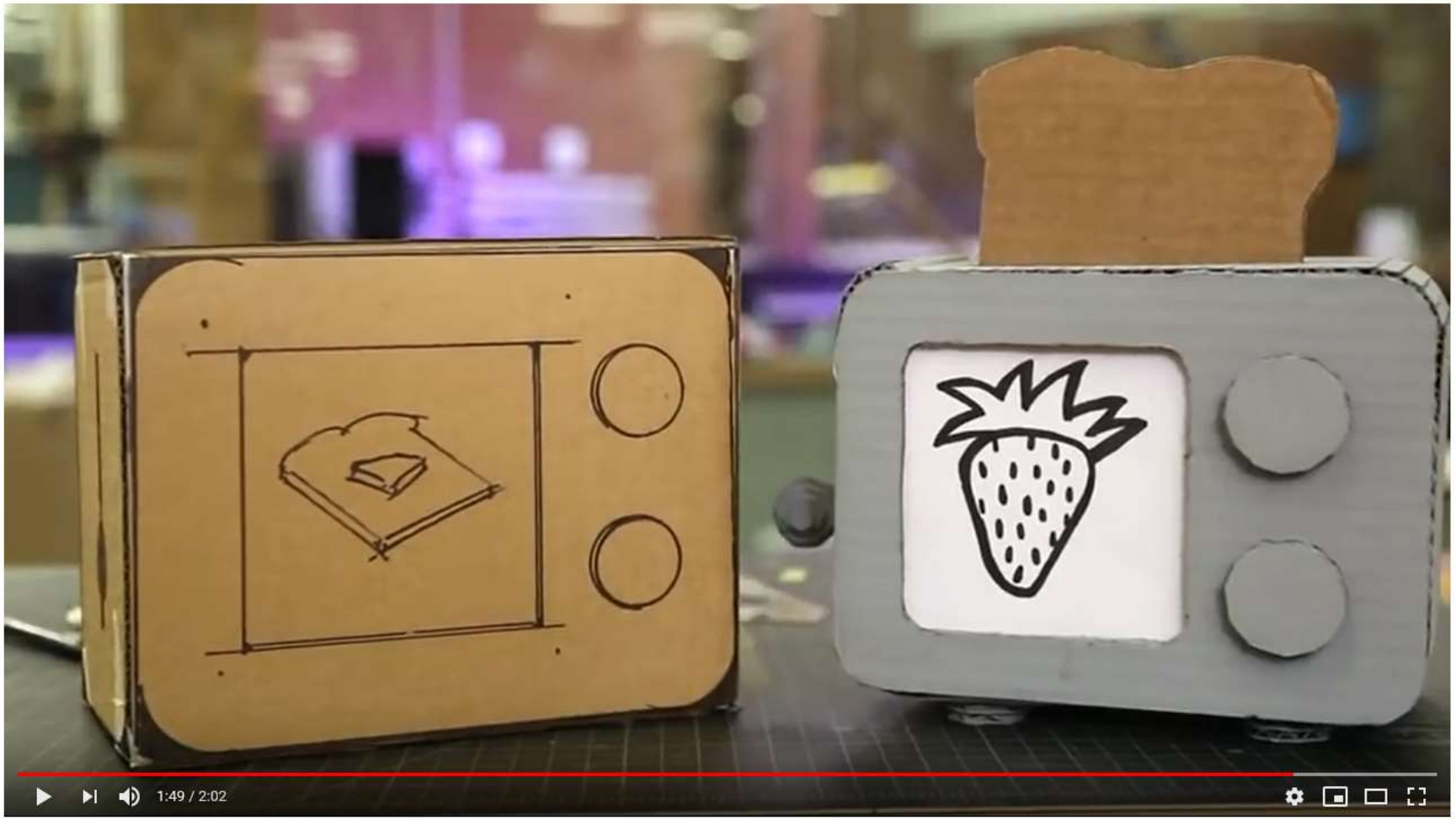
level 7 / 8

The 7/8 example has used existing products to explain possible developments and also has a lot of detailed user feedback. Also the iterations are still being linked/tested against spec points.

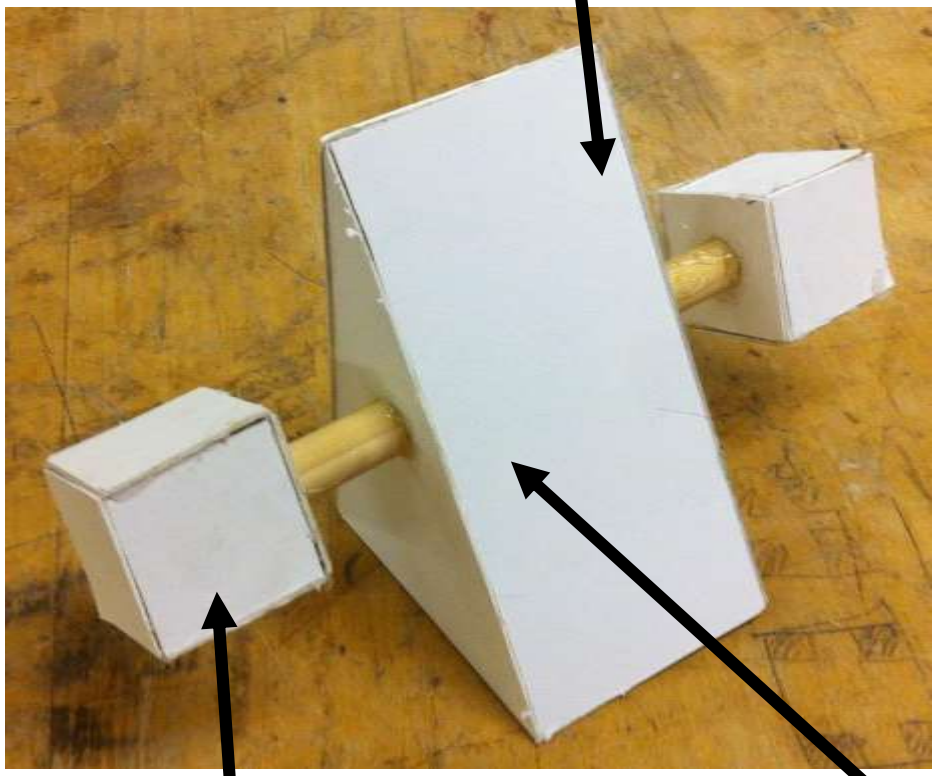


Cardboard Modelling Video

See how a professional designer uses cardboard for modelling



Design Idea Modelling



What you need to discuss:

- What does the **user** think of the design
- What design features need **explaining** (the photo might not show all the detail)
- Which **specification points** doesn't it meet? Why? Can you test these points? *(high level)*
- **Problems** with this design
- **Changes** you might need to make
- **Material** thoughts, how would it be **assembled**?
- Does it solve the problem and meet the brief?

User Feedback:
What do they think?
What would they change/ keep?

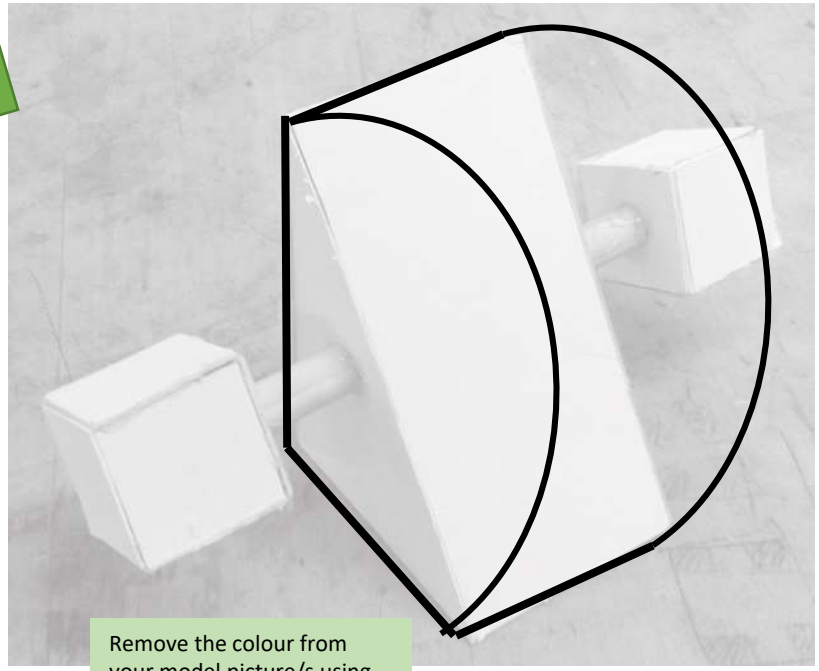
Development After Modelling

Original Model Photo

This

New sketches/ designs

Or



Remove the colour from your model picture/s using the 'colour' tool in PowerPoint

What you must show:

- Proposed **changes** to your design
- **Why** you've made the changes
- **User** feedback

Changes could include:

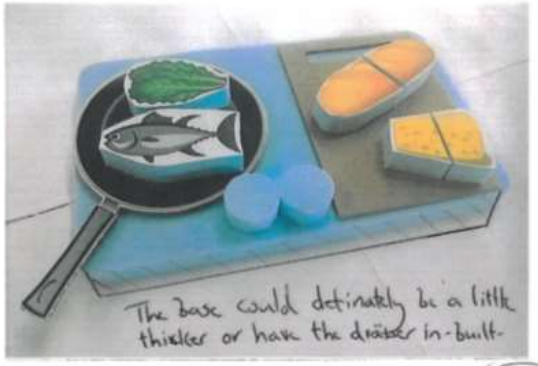
- Materials
- Design changes
- Improvements to function
- Changes due to spec points
- Sizes/ dimensions
- Colours
- Shapes
- Removal/ addition of parts
- Manufacturing/ Assembly details

Development After Feedback

level 5 / 6

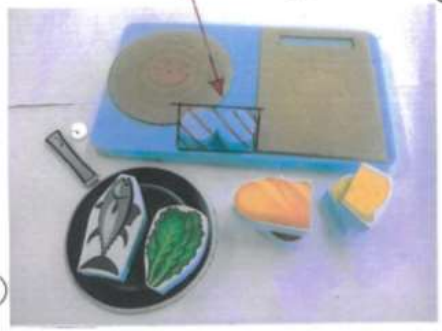
A basic model of the idea as it stands. Clear development shown / sketched over the pics of the model.

Development After Feedback

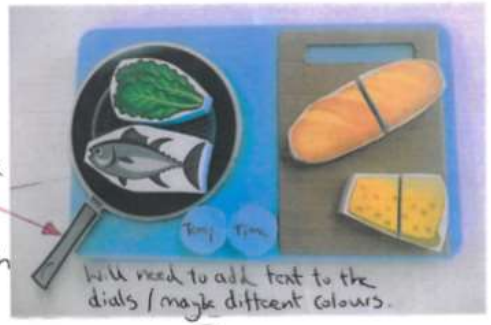


The base could definately be a little thicker or have the drawer in-built.

* Testing:
The dials are too close together and get in the way when chopping.



The unit size is good, but the chopping board needs to be larger and should probably be kept separate, underneather the unit.



* Testing: The handle is easy to grab and interact with

Will need to add text to the dials / maybe different colours.

If all of the pieces fitted on the frying pan, the could be stored properly.

There are lots of loose pieces that will need to be held or kept somewhere.

There could be a second layer which holds the chopping board and the pieces.

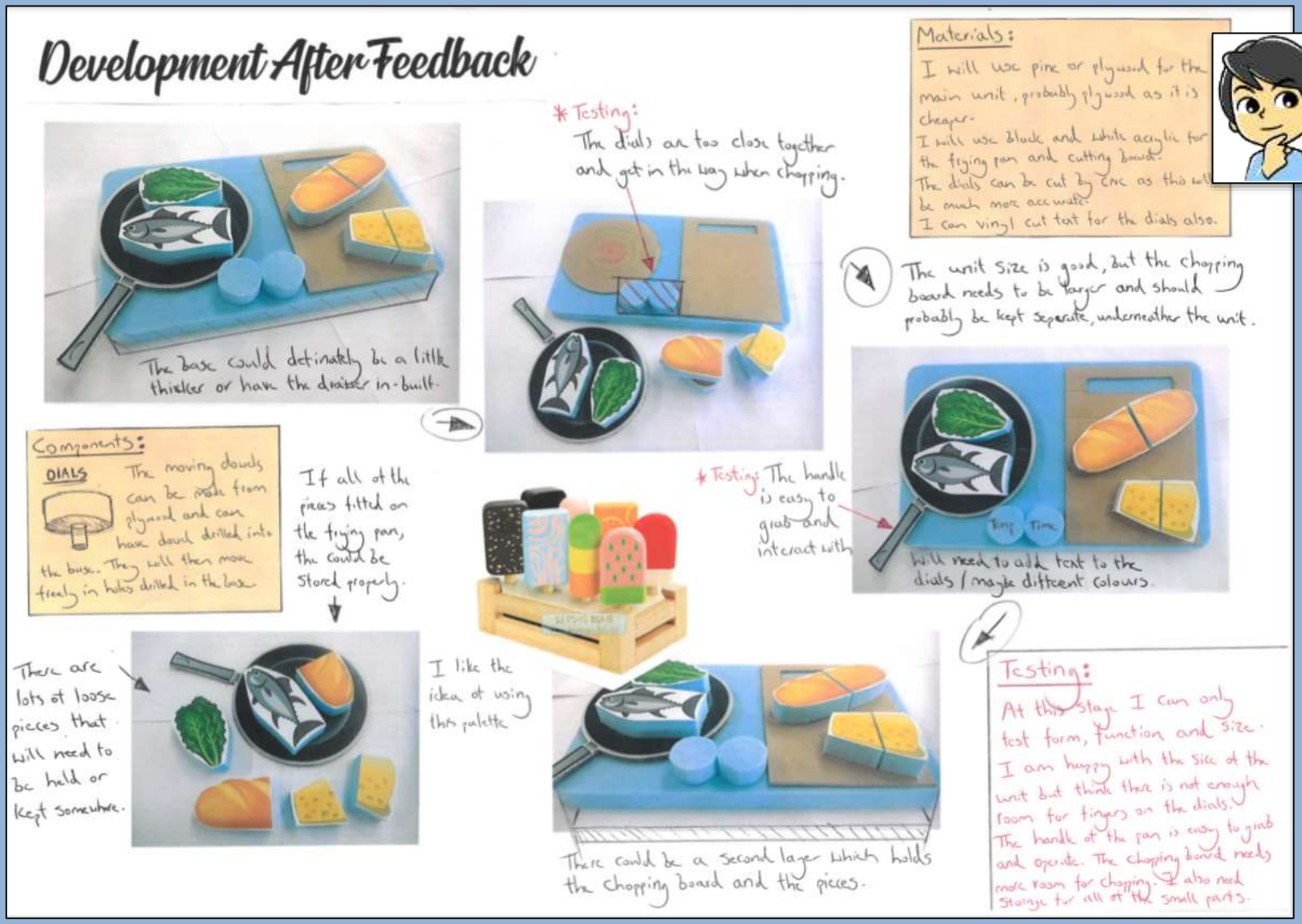
Testing:

At this stage I can only test form, function and size. I am happy with the size of the unit but think there is not enough room for fingers on the dials. The handle of the pan is easy to grab and operate. The chopping board needs more room for chopping. Also need storage for all of the small parts.

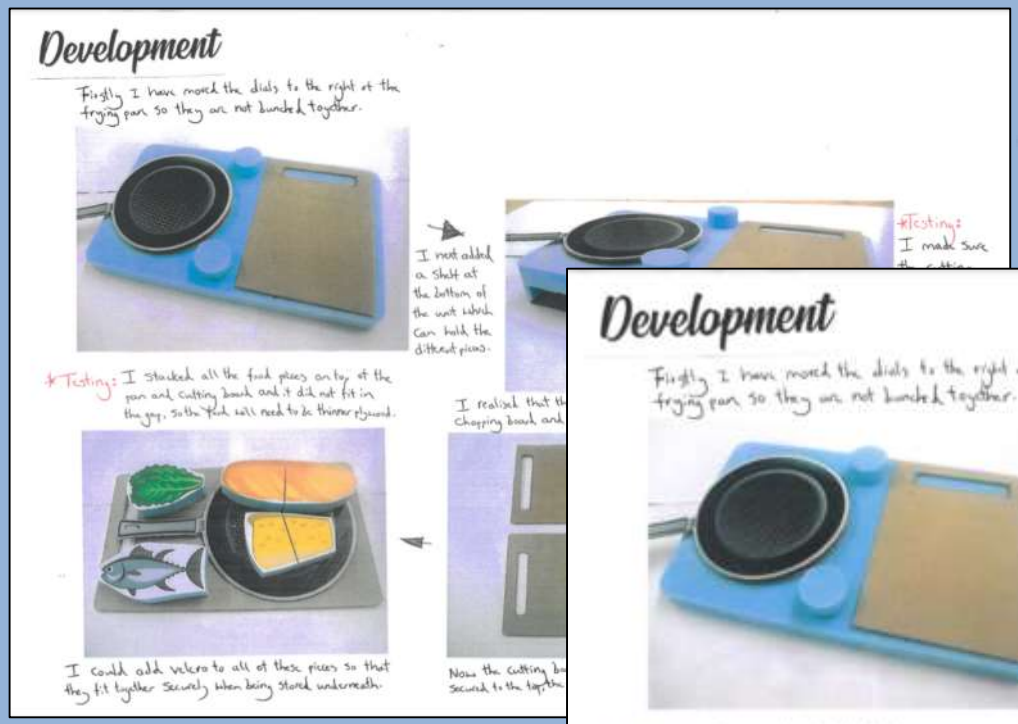
Development After Feedback

level 7 / 8

The difference is adding in details about materials and components. You also need to perform some testing on your model and discuss the outcomes.



Development



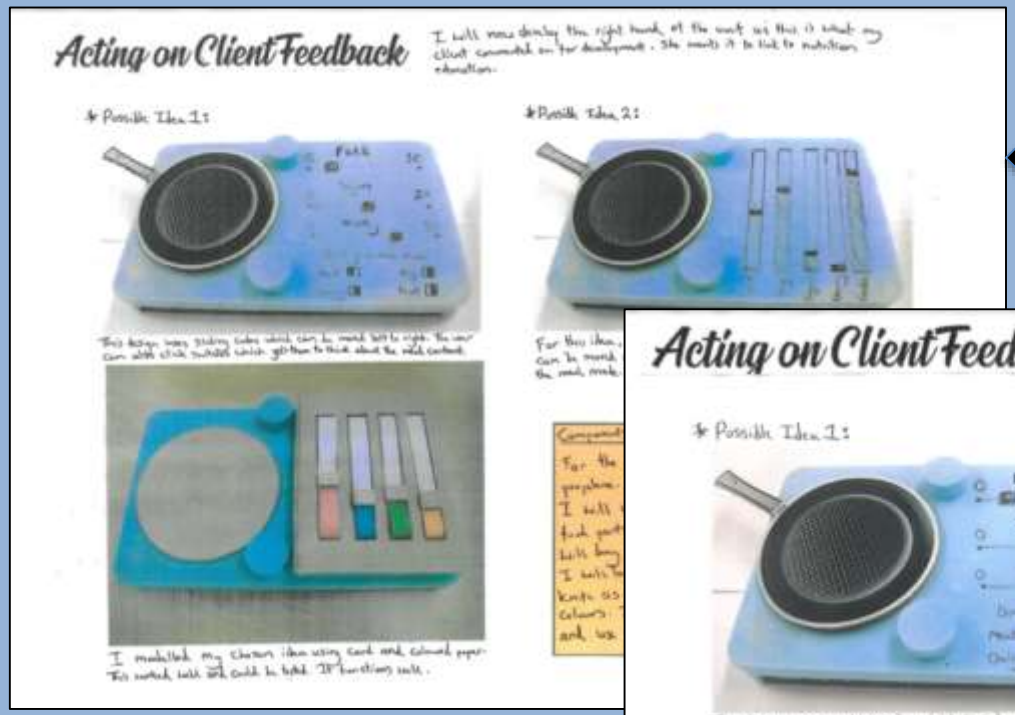
level 5 / 6

The model has been improved/developed after user feedback. There is also further testing of the second improved model.

level 7 / 8

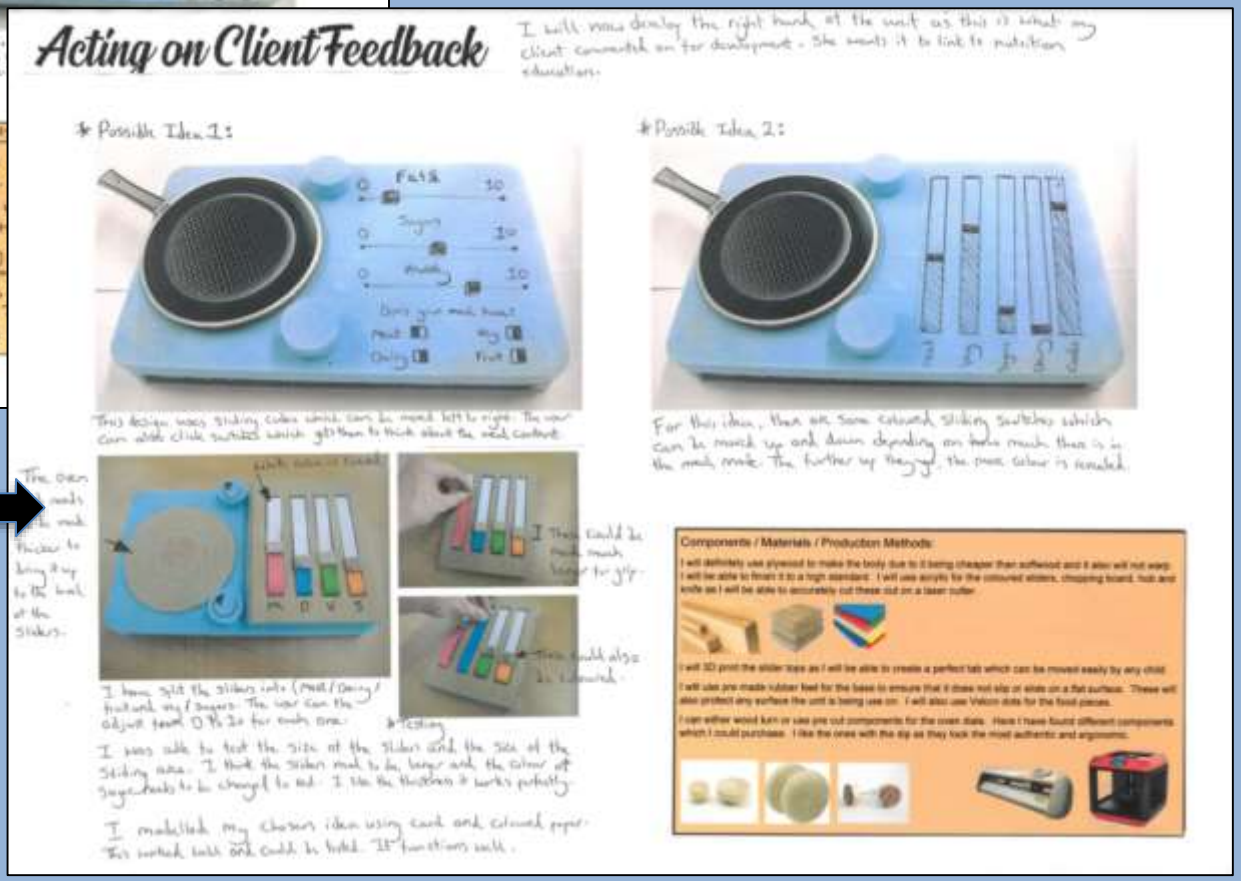
The difference is there is detailed user and client feedback regarding testing and the second model. This is crucial for a high level.

Development After Feedback



level 5 / 6

This sheet must act on the clients feedback. There is further developments and testing shown. There is limited information on components and materials.



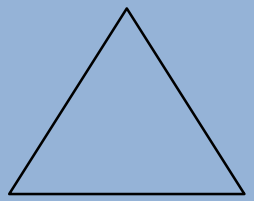
level 7 / 8

The difference is there is photographic evidence of testing and very detailed information on tools, materials and components. The development is more detailed.

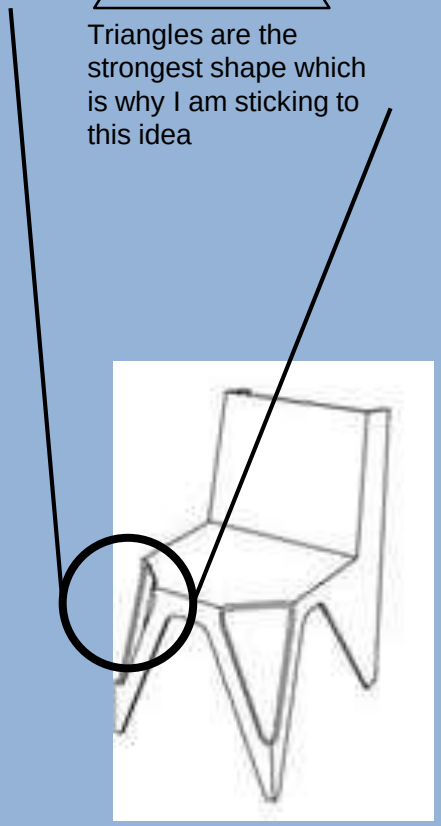
How a development page should look

Your design and sketch work must show your thinking and show the journey. Anything you think about when developing your idea must be shown on the page.

I could use pine or plywood for the main body of the chair because they are both strong. The plywood is cheaper though and It will not be warped or cupped which will be much easier to assemble.



Triangles are the strongest shape which is why I am sticking to this idea



If I use pine or plywood to make the chair I will probably assemble it using PVA glue and screws. I will have to clamp the main parts together and then secure them by drilling the pilot holes and screwing the screw in to hold it.

I have now been thinking about acrylic for the chair as a material. It is available in a range of colours and can be finished to a high quality but it can scratch easily and would be very difficult to strip heat all of the angles.

2nd Model Page

Testing against Specification

Honestly test your model against the specifications. If you have done any actual tests then mention this. It is a good thing if your model doesn't meet the specifications yet!

- **Function**
- **Form/ aesthetics**
- **Materials**
- **Size**
- **Ergonomics**
- **Safety**

User feedback

What do they think? Did the technician/ teacher recommend anything to tweak?

Photo from other angles

Big isometric photo of model

Photo from other angles

Photo from other angles

Annotate model photos

- Materials
- Design
- Sizes
- Functions
- Changes from the last model

Improvements for future designs

What do you need to change for the next design/ model? Why do you need to make these changes.

Improving your Development sheets

User feedback for each stage is crucial!! What do they like/ not like about each design?

Choice of materials- link to properties. Why it is better than other materials available?

Moral/ Social/ Economic context- Why is this a good product for society? What good is it doing? Does it encourage the user to be a better person/ do better for the world?!

Sustainability issues- is it good for the environment? Why? Think about materials, amount of material used, how you're going to make it what the other options are, product lifespan

Costing of some of the parts- pre-manufactured components or your materials- have you made any decisions that are going to cost more/ less then others? Why did you make those choices?

Additional research would be good- materials, the little extra things you would need to buy, how the product works, ideas from other designers. Link to the work of a designer research that you did earlier.

User / Spec Testing

Testing against Specification: *Focus on these 3*

FOCUS	PRIMARY	SECONDARY	USER COMMENT
Function	My product must hold different snacks and must be easy to use.	My product could display the food inside.	The lid is difficult to take off and takes a long time if I were in a hurry or eating on the go
Social/Moral/ Economic	My packaging must come from a sustainable source.	My packaging should show how the product will be recycled.	All materials are from a sustainable source. There is no information on the box for recycling.
Target Market	My product must appeal to all genders.	My product should appeal to someone on the go.	The tabs for the lid are flimsy and could break if overused. Could be more robust.

Improvements for future final design / Next Iteration:

I need to make sure I add in a window to display the food and make the lid easier to remove as this is the main selling point of this lunchbox. I will also add the recycling information on the box and strengthen the tabs for the lid.

User Testing / Feedback:

"The product fulfills its function by holding different foods in the different sections. There is room in the lid for sandwiches and bars."

"Food is easy to access but the tray is too shallow for a small orange. There could be a secure section for cereal bars".

"The lunchbox does not fit graze packs. I think this would be good as it could be used to hold these!"

RM COSTING SHEET

Timbers

PINE: 160 x 1000

20mm= £1.22

MDF: 610 x 300mm

18mm= £8.00

4mm= £3.50

PLYWOOD: 610 x 300mm

18mm= £14.00

4mm= £4.00

Flexiply (610 x 610mm) = £15.70

OAK: 180 x 1000mm

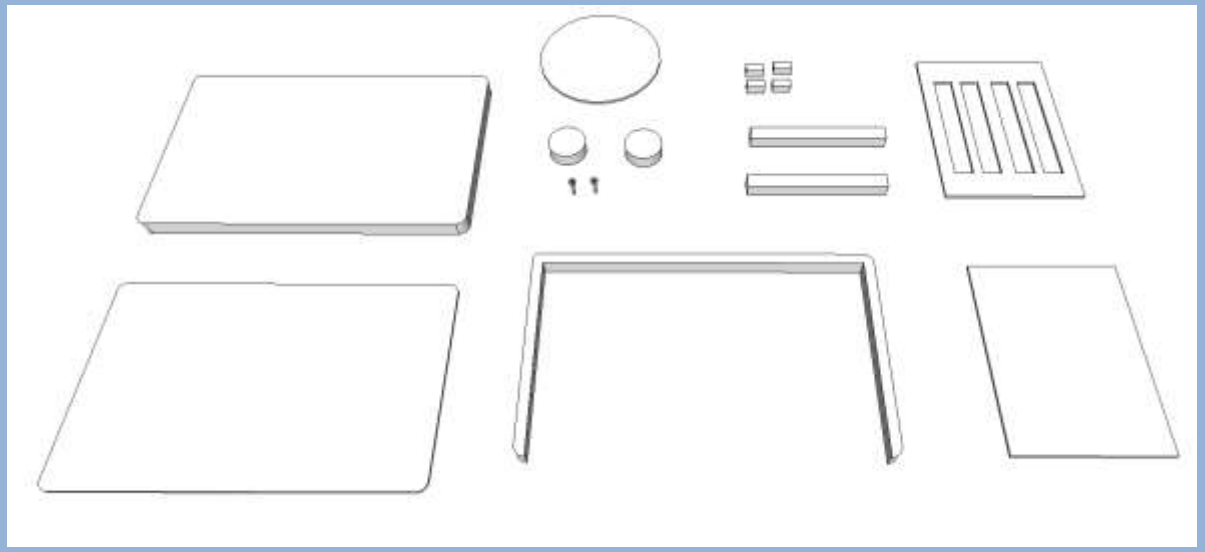
20mm= £16.40

Acrylic

1000 x 600

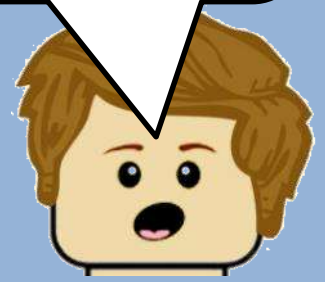
3mm= £14.22

Final Design on CAD

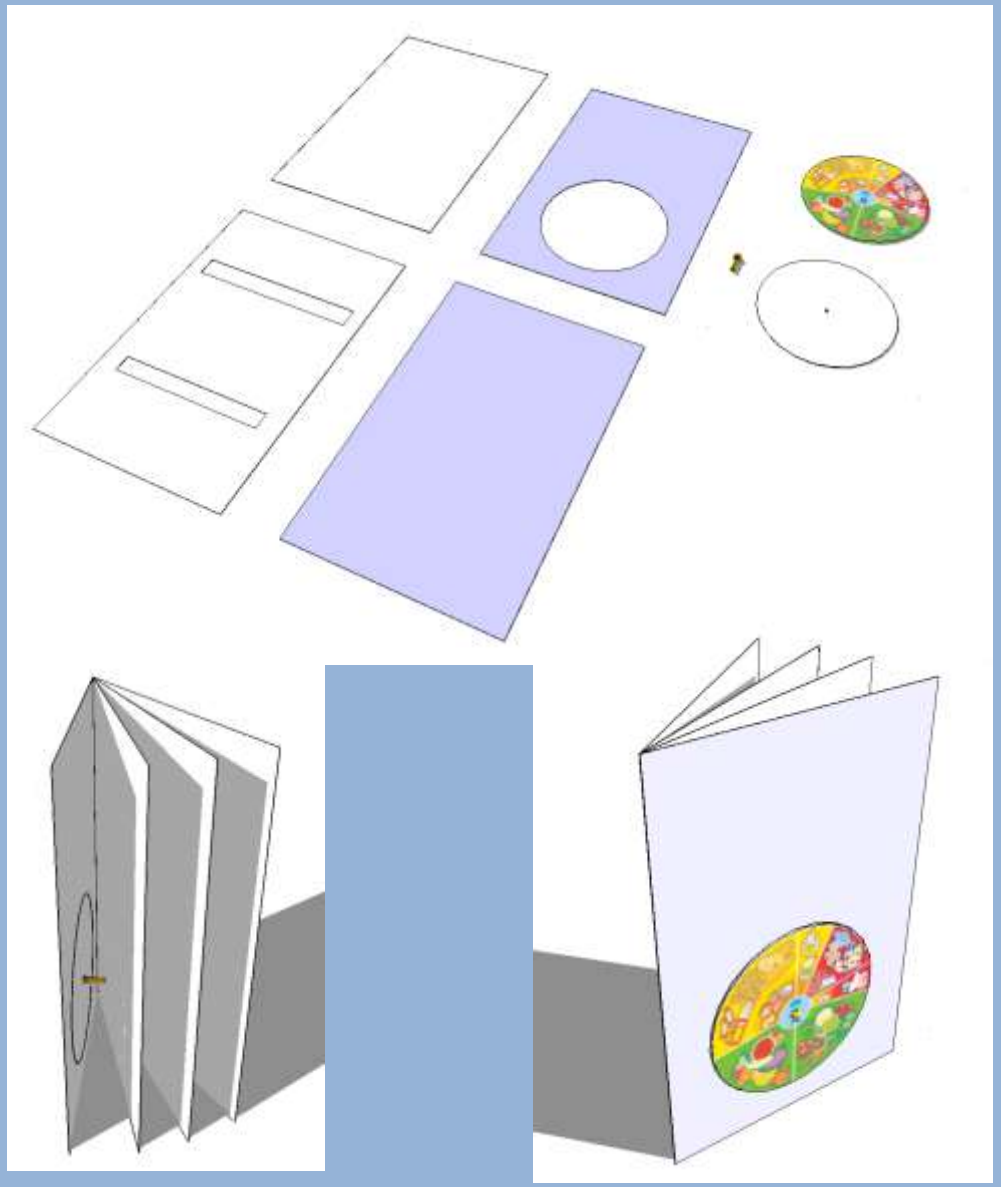


Don’t forget to make all of your separate parts as components, including any screws, nuts and bolts.

Add the textures and colour before you assemble your model!

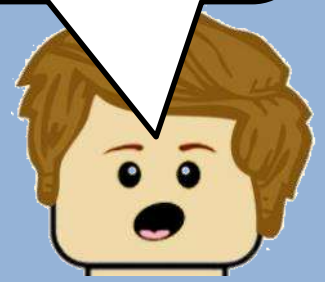


Final Design on CAD – Graphics Students

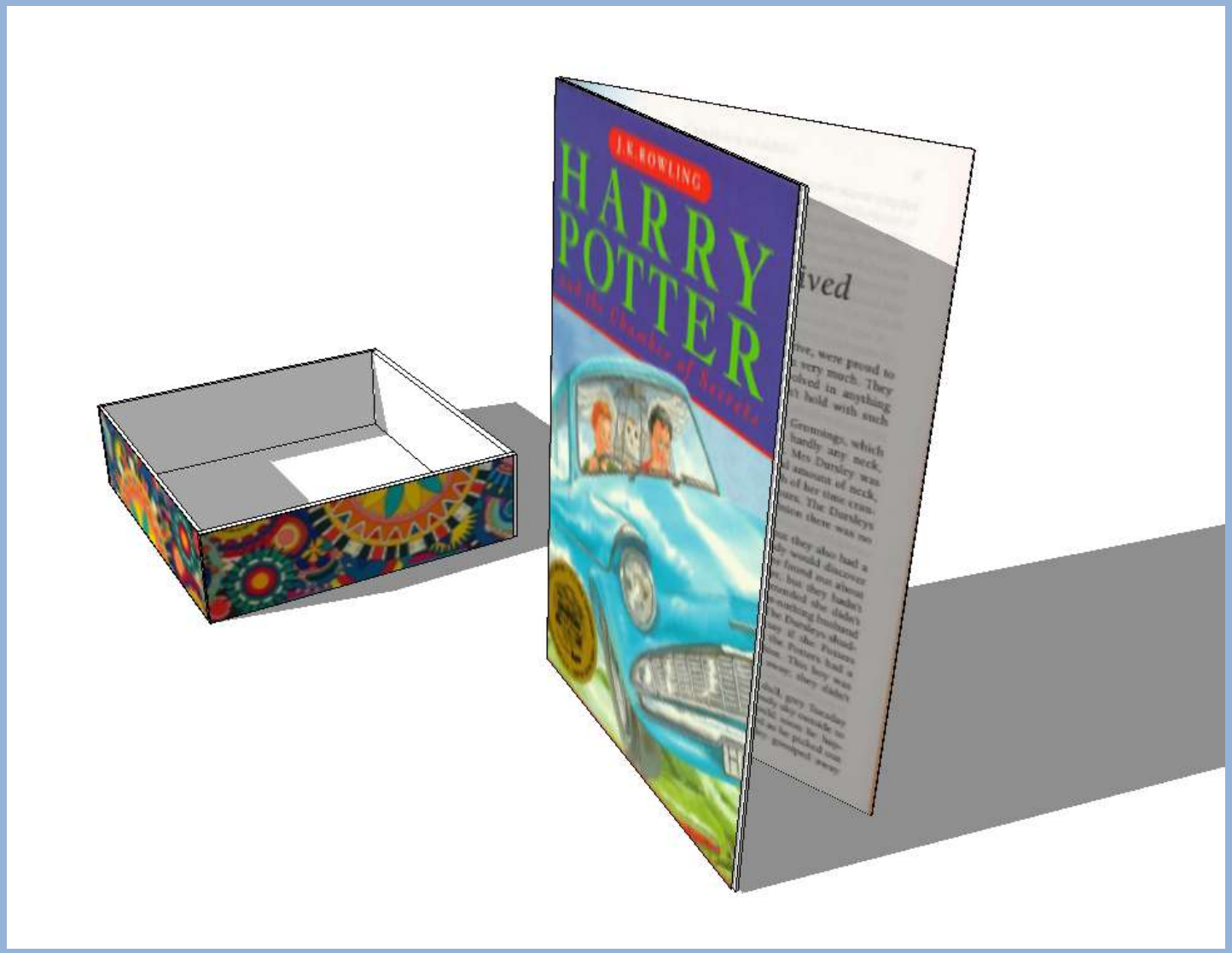


Don’t forget to make all of your separate parts as components, including any split pins, or any mechanisms.

Make any holes and add any colour before you assemble your model!



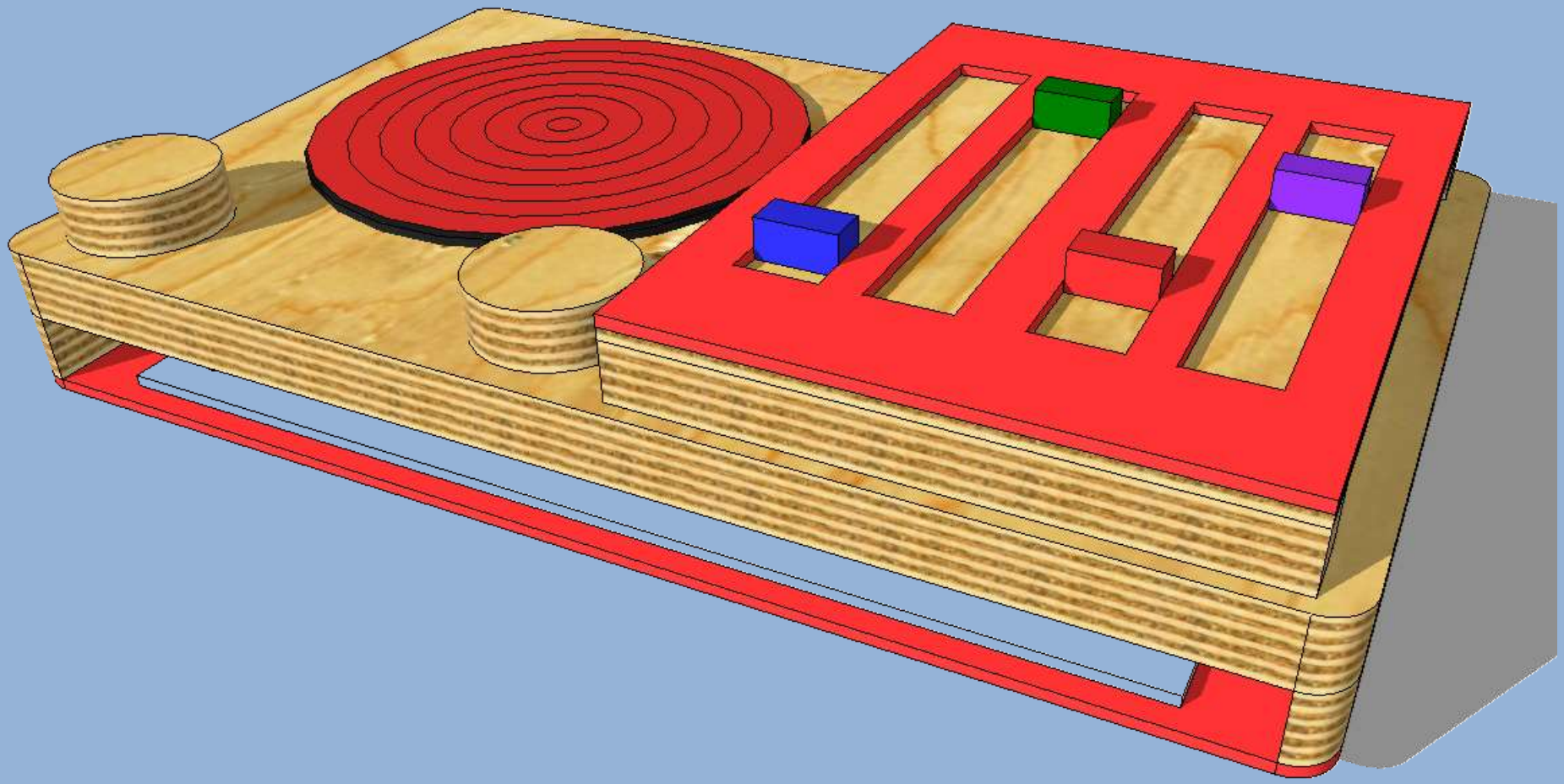
Final Design on CAD – Graphics Students



Don’t forget to make all of your separate parts as components, including any split pins, or any mechanisms.

Final Design on CAD

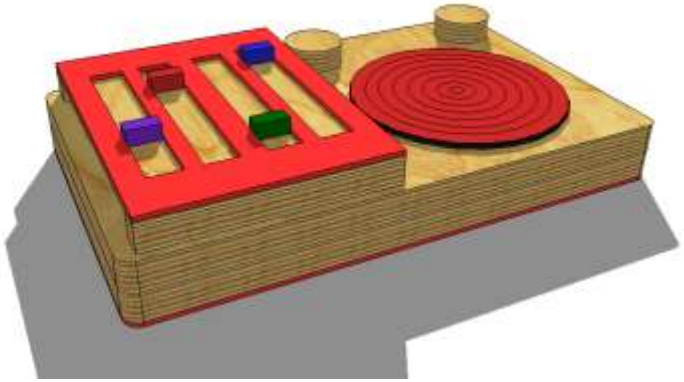
Now you can assemble your product ready for your final design page!

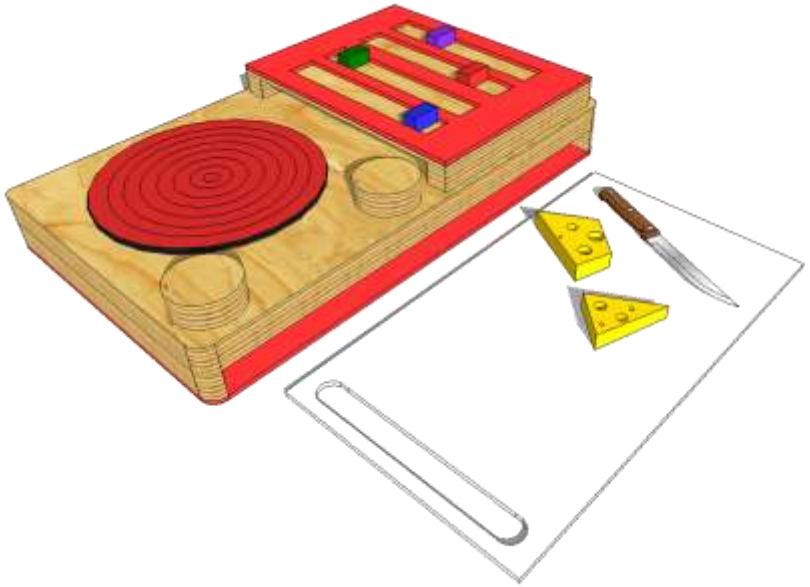


Final Design Page

On this page you just need high quality images of your final product on sketch up

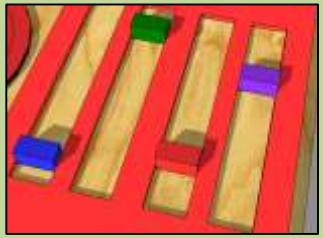
Final Design





Level 6 and Up:

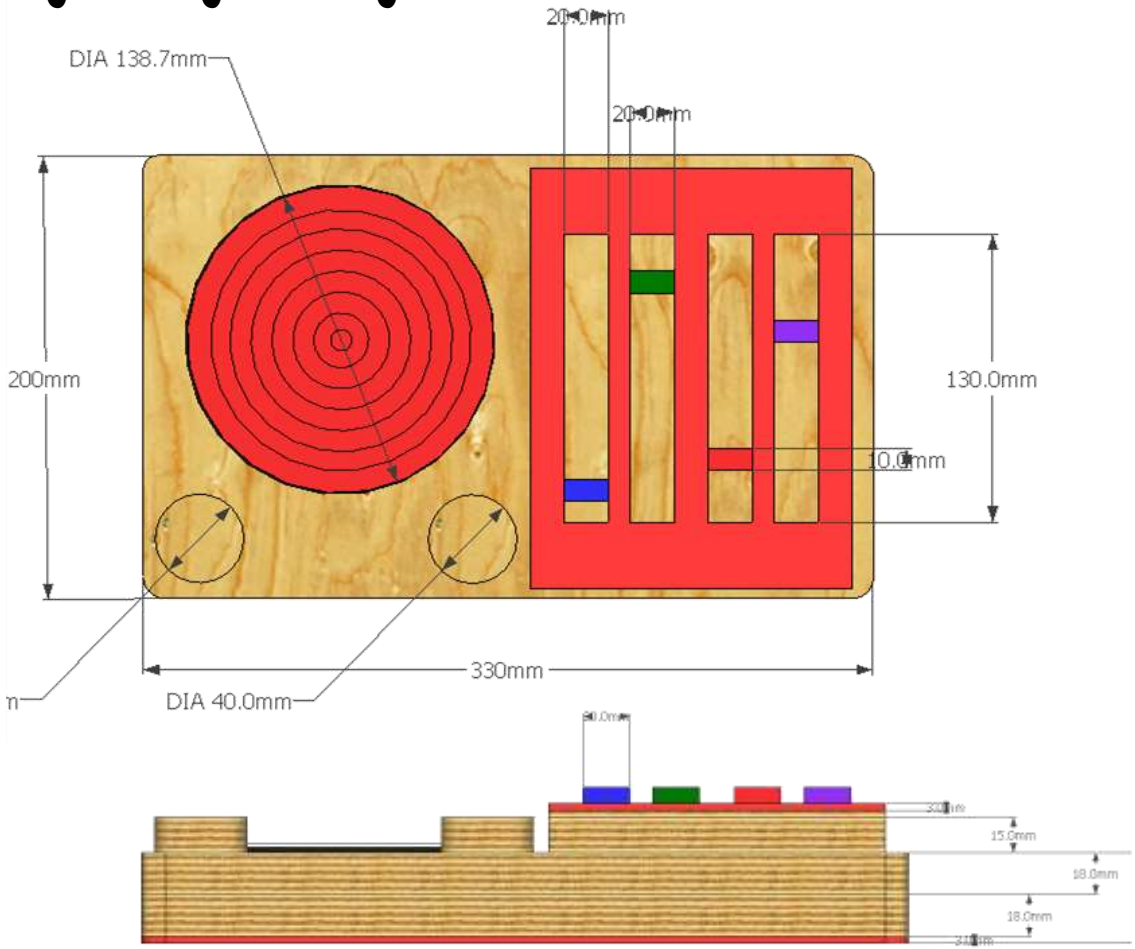
Could you add any detailed views that are particularly technical or would benefit from being shown using an image?



Engineering Drawing Page

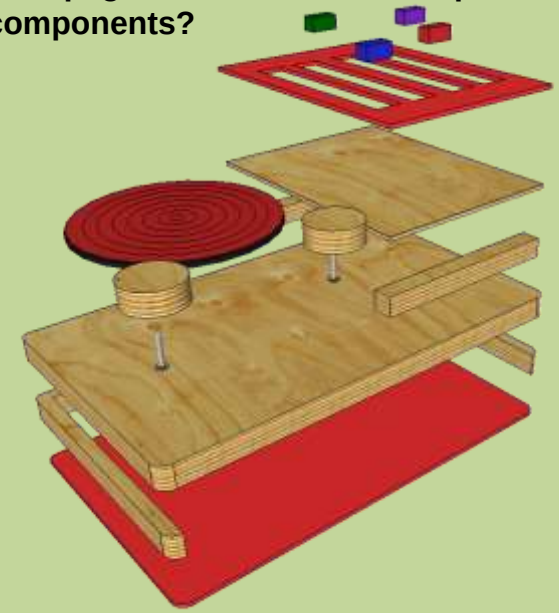
On this page you need all details of your design so that someone could manufacture it; Dimensions, Materials List, How you will make it.

Engineering Drawing



Level 6 and Up:

Could you add an exploded view to your page to show all of the separate components?



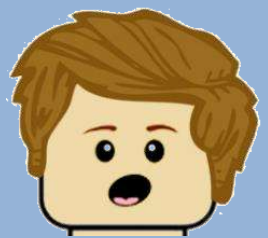
This page also needs all details of manufacture such as finishes, Materials, how each part will be manufactured!

TIME SCALE FOR FINAL TERM

Week	1	2	3	4	5	6	EASTER
Focus	PRACTICAL	PRACTICAL	SKETCH UP / SPEC / TESTING	EVALUATION / PRINITNG OUT SKETCHUP	EVALUATION	ACTING ON FEEDBACK	HAND IN OF ALL COURSEWORK

Practical Hand In

Final Hand In



The pressure is on but you will be fine as long as you manage your time properly and come in at lunches or after schools to get caught up!

What pages you need in your Presentation Folio

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Testing / Overcoming Problems

On this page you need to show evidence of testing that is unique to your project. This can be materials, process or materials!

On this page you can talk about:

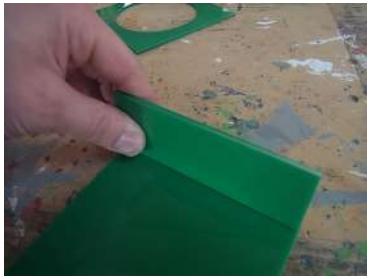
- Materials / Tools testing
- Techniques testing
- Physical Testing
- Component Testing

Level 6 and Up:

You need feedback from your user / someone in the class about your decisions and testing. Get as much feedback as possible and make sure it is in Purple.
You need to compare your model against some of your spec points at this stage in Red pen.

The more testing you can show you have done, the more marks you will get across three different areas of the mark scheme.
Add lots of images and explain what you are doing and why!








Level 6 and Up:

You need feedback from your user / someone in the class about your decisions and testing.

On this page you can talk about:

- **Materials / Tools testing-** which tools/ materials should you use?
- **Techniques testing-** how should you make a part of your design.
- **Physical Testing-** Does it work? Does it store what you need?
- **Component Testing-** what hinges/ screws/ handles do you need?

The more testing you can show you have done, the more marks you will get across three different areas of the mark scheme.
Add lots of images and explain what you are doing and why!





Testing During Design & Manufacture Stages- Example

Hole Size

I had to decide which size forstner bit to use in the drill so that enough pens would fit into the hole. I drilled a range of different diameter holes in an offcut piece of pine. I put my pens in to see which would fit the right amount of pens and a pair of scissors. I ended up choosing the 50mm bit because the 60mm hole made the design too wide and the others were too small.

User Feedback: *The hole is perfect because I can grab the pens easily and they definitely won't fall out. It could be bigger but I don't actually need that much equipment to be stored. I might like the edges to be smoother and not quite as sharp if possible.*

After speaking to my user I will sand down the edges of the top of the pencil pot so they are lightly rounded and not so sharp.

These are the forstner bits we have in school. 18, 38, 50 and 60mm

In this photo I have just drilled the hole and put in the items I need to store in an offcut of my pine.

Materials

I tested different materials I could use to make the drawer at the bottom of the tree. I like the green colour of the Acrylic but the Plywood would be easier to glue and would be stronger. The technician and I spoke about how to attach and he said the thicker the plywood, the easier it will be to attach a screw or to epoxy resin the acrylic onto. I've decided to use 15mm plywood rather than the acrylic I originally planned.

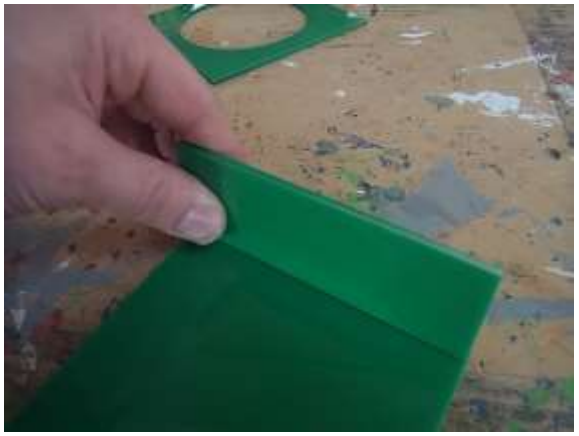
2D Design & Laser Cutter

Before using the laser cutter I printed out my design onto paper from 2D design. This was to test the size against my oak base to make sure it was the right size. I didn't want to cut it straight onto acrylic and find out it was too big/ small for the base. This would have wasted acrylic, which isn't good. It turned out to be the right idea because the gap between the oak and acrylic was too small and I have to resize the design by 10mm.

Testing / Overcoming Problems - Example Level 5

I had to decide which size forstner bit to use in the drill so that enough pens would fit into the hole. I am happy with my choice. I went for the 50mm bit.

I tested different materials I could use to make the drawer at the bottom of the tree. I like the green colour of the Acrylic but the Plywood would be easier to glue and would be stronger. I might need to make the side thicker and increase strength. I could probably order more plywood or pine from the technician and re design the drawer.



Testing / Overcoming Problems - Example Level 6

I had to decide which size forstner bit to use in the drill so that enough pens would fit into the hole. I drilled a range of different diameter holes and put my pens in to see which would fit the pens and scissors. I ended up choosing the 50mm bit because the 60mm hole made the design too wide.

I tested different materials I could use to make the drawer at the bottom of the tree. I like the green colour of the Acrylic but the Plywood would be easier to glue and would be stronger. I might need to make the side thicker and increase strength.

Once I had drilled the hole I tested putting stationary in the top to see if there was enough room and if they would fall out.

User Feedback: *The hole is perfect because I can grab the pens easily and they definitely won't fall out. I love the decision to taper the pine truck out so it looks like a real tree. You need to make the drawer walls thicker so that they can be stuck together.*

Testing / Overcoming Problems – Example Level 7 and up

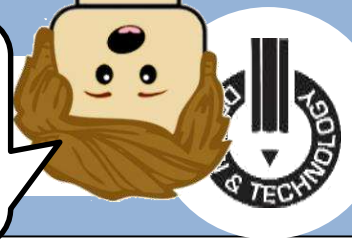
I decided to order a smaller solar powered car from the internet and assemble it. I ran some tests outside in the sun and learnt that the solar panel was powerful enough to move something this weight. I also discovered that if I put the solar panel to an angle it would get more sun and move faster. I will construct a run for it to go down with adjustable flaps that the user can move to experiment with light intensity. I also discovered that I need to make the wheels a lot lighter as they are the heaviest part of the car. I will laser cut them out of 3mm plywood.

User Feedback: *I enjoyed using the example design. It has to be really sunny when it woks. I love the idea of making a road for it and maybe adding some faster section for it to teach me about energy and solar power.*

Testing against my spec points: ***Function*** *– The toy must be a fun alternative to plastic toys / The toy could teach children about different alternative energy. My product meet my first spec point for function but I need to remember to add educational information on the packaging or ramp regarding other energy.*

Production Plan

“Clearly communicated comprehensive and relevant details to a logical sequence and achievable timeline for the stages of production and testing of their final prototype” – MARK SCHEME



Stage	Stage Name	What I will do	Tool / Machines used	Time Scale
1	Marking out the sides of the bird house.	I will mark out the front back and sides on the sheet of 15mm plywood. I will ensure I leave a 3mm gap for cutting and sanding down.	Sharp pencil / Steel Rule	15 Minutes
2	Cutting and sanding the sides out.	I will cut along the marked out dotted line to cut all four of the side of the house. I will take extra care to not cut over any lines. Next I will use the belt sander to take away any material up to the lines of the edges. Then I will smooth the sides down using the P80 then P400 sand paper.	Fret saw / Belt sander / P80 Sand Paper / P400 Sand Paper	30 Minutes

Level 6 and Up: You need to add in stages where you are testing different parts/ Materials or Components and some Health and Safety points.

Production Plan – Example Level 6 and up:

Stage	Stage Name	What I will do	Tool / Machines used	Time Scale
1	Marking out the sides of the bird house.	I will mark out the front back and sides on the sheet of 15mm plywood. I will ensure I leave a 3mm gap for cutting and sanding down.	Sharp pencil / Steel Rule	15 Minutes
2	Cutting and sanding the sides out.	I will cut along the marked out dotted line to cut all four of the side of the house. I will take extra care to not cut over any lines and will turn on the extractor. Next I will use the belt sander to take away any material up to the lines of the edges. I will ensure my fingers do not go past the line of the belt sander. Then I will smooth the sides down using the P80 then P400 sand paper.	Fret saw / Belt sander / P80 Sand Paper / P400 Sand Paper	30 Minutes
3	Testing the measurements	Once sanded I will put all of the four pieces together to test that they are square.	Sides / Tri Square	15 Minutes

Level 6 and Up: You need to add in stages where you are testing different parts/ Materials or Components and some Health and Safety points.

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Evaluation of Final Prototype

(e) Analyzing and evaluating design decisions and prototypes [AO3] *The candidate has:*	Band
16 – 20 marks • undertaken a critical, objective analysis, evaluation and testing of their ideas and decisions whilst applying iterative design processes. • undertaken a critical and objective evaluation and testing of their final prototype, taking into account the views of potential users. • responded to feedback and clearly identified the potential for further development of their prototype, with detailed suggestions for how modifications could be made.	4

On this page you can talk about:

- A critical analysis and evaluation of the FINAL prototype.
- User trials / testing and opinions of potential users.

Evaluation of Final Prototype

FOCUS	PRIMARY	SECONDARY	EVALUATION
Function	My product must hold different snacks and must be easy to use.	My product could display the food inside.	Critical evaluation against your spec points. Does it meet them or does it not quite? Explain why backed up with evidence.
Social/Moral/ Economic	My packaging must come from a sustainable source.	My packaging should show how the product will be recycled.	

User Testing:
Images of the User testing Your prototype. With products!



You need their feedback typed up here in as much Detail as possible.

- What works:
- What could be improved:

Level 6 and Up:

You have to have images of your user testing the product, not just hands!


Modifications and Further Developments

(e) Analyzing and evaluating design decisions and prototypes [AO3] *The candidate has:*	Band
16 – 20 marks • undertaken a critical, objective analysis, evaluation and testing of their ideas and decisions whilst applying iterative design processes. • undertaken a critical and objective evaluation and testing of their final prototype, taking into account the views of potential users. • responded to feedback and clearly identified the potential for further development of their prototype, with detailed suggestions for how modifications could be made.	4

On this page you can talk about:

- Reflection on feedback and further development issues identified.
- Detailed suggestions for modifications.
- Use images or diagrams to help you demonstrate.

Modifications and Further Developments

Response to User Feedback:
Discuss what you could do to improve or develop your prototype linked to your users feedback.

Level 6 and Up:

You need to suggest modifications which involve the products you are storing or the animals you are housing.

Testing and Evaluation

Put a column in a table

FOCUS	MUST	COULD	TESTING	EVALUATION
Function	My product must hold different snacks and must be easy to use. It must be easy to get the snacks in and out.	My product could display the food inside.	• Explain what you did/ how you tested it • User feedback • Scoring system 7/10 • Link to photos of testing	Critical evaluation against your spec points. Does it meet them or does it not quite? Explain why backed up with evidence. (test results)
Social/Moral/ Economic	My packaging must come from a sustainable source.	My packaging should show how the product will be recycled.		

OR…

Function

My product must hold different snacks and must be easy to use. It must be easy to get the snacks in and out. My product could display the food inside.

I tested this by……. My user gave it a score of /10 and said "……."

Therefore I don't think that my design fully meets the specification because…..

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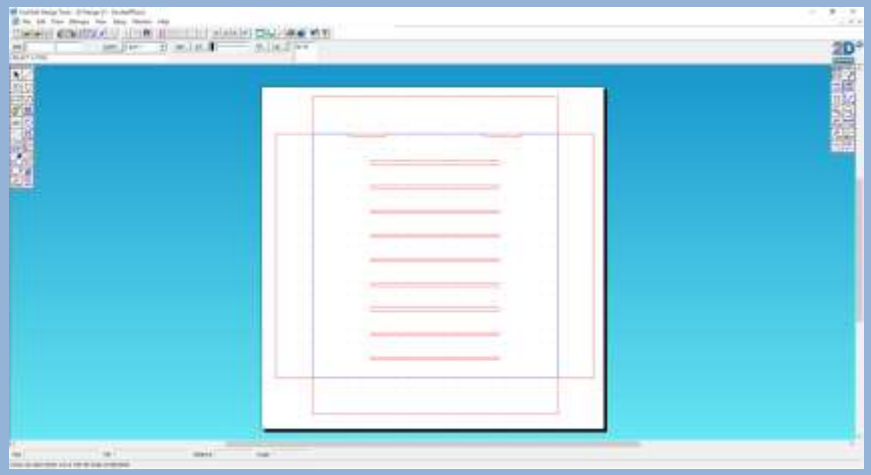
CAD FILES



NON EXAMINED ASSESSMENT (CW)

AO1

AO1 Identify, investigate and outline design possibilities to address needs and wants	
Definitions used in AO1	
Identify	looking at **areas** and **opportunities** in which designs can take place
Investigate	pursuing **ideas** and **gathering** information relating to a **context**
	identify and investigate are interdependent - **the processes work together and take place in no particular order**
Outline	to produce a **design brief** and **specification** to inform AO2

NON EXAMINED ASSESSMENT (CW)

Non-exam assessment marking criteria

Assessment Criteria		Marks	Assessment Objective
(a)	Identifying and investigating design possibilities.	10	AO1
(b)	Developing a design brief and specification.	10	
(c)	Generating and developing design ideas.	30	AO2
(d)	Manufacturing a prototype.	30	
(e)	Analysing and evaluating design decisions and prototypes.	20	AO3
	Total	**100**	

- The design context must be analysed critically.
- There will be a number of possible design tasks identified.
- Detailed and relevant research will be evident
- Consider the needs and wants of users
- Analysis of existing products
- Research into past / present professionals

NON EXAMINED ASSESSMENT (CW)

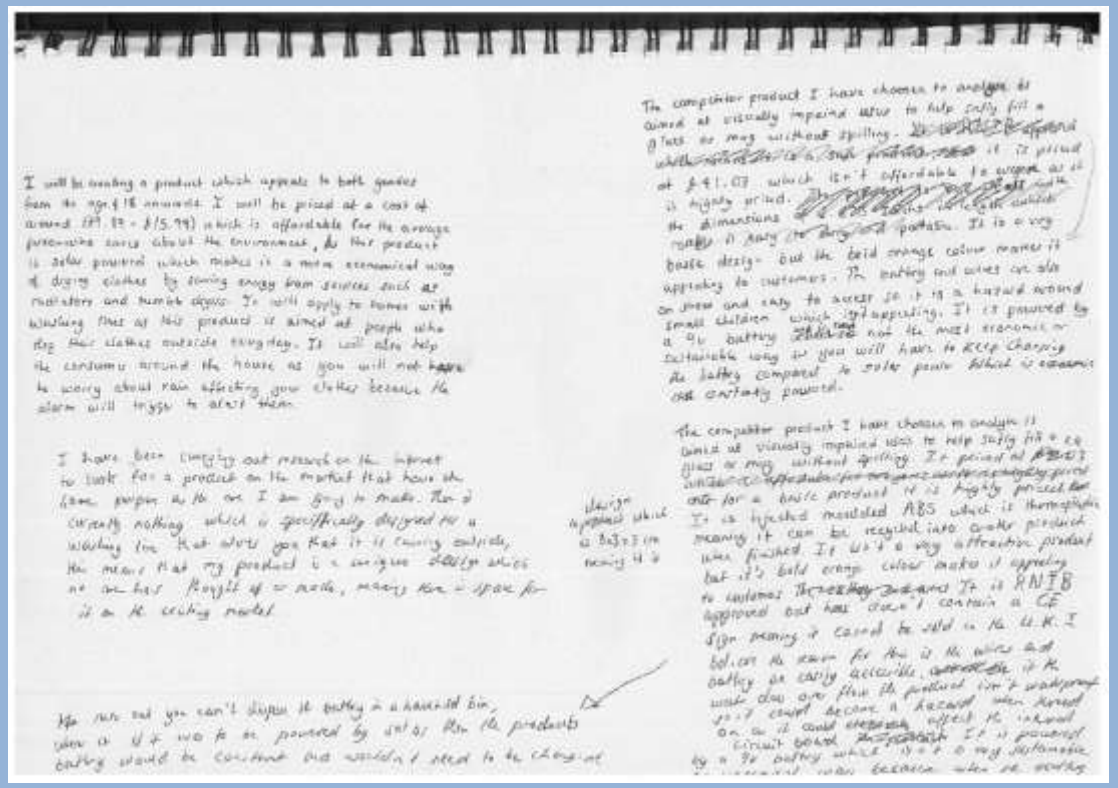
(a) Identifying and investigating design possibilities [AO1] *The candidate has:*	**Band**
9 – 10 marks • undertaken a comprehensive and effective identification of opportunities for the development of designs within the prescribed context. • undertaken comprehensive, relevant research and investigation, clearly linked to the context and, where appropriate, the work of past/present professionals and companies. • undertaken an effective analysis of information, reflecting the needs, wants and values of clients or potential users. • identified a range of problems/opportunities to clearly inform the development of possible design briefs.	4
6 – 8 marks • undertaken a generally effective identification of opportunities for the development of designs within the prescribed context. • undertaken relevant research and investigation, linked to the context and, where appropriate, the work of past/present professionals and companies. • undertaken a mostly effective analysis of information, reflecting the needs, wants and values of potential users. • identified a range of problems/opportunities to inform the development of possible design briefs.	3

NON EXAMINED ASSESSMENT (CW)

(a) Identifying and investigating design possibilities [AO1] *The candidate has:*	**Band**
3 – 5 marks • identified some opportunities for the development of designs within the prescribed context. • undertaken research and investigation, generally linked to the context and, where appropriate, the work of past/present professionals and companies. • undertaken a partially effective analysis of information, though the needs, wants and values of potential users may not have not been fully considered. • identified some problems/opportunities which partially inform the development of possible design briefs.	2
1 – 2 marks • identified one opportunity for the possible development of designs within the prescribed context. • undertaken little research and investigation, which is only partially linked to the context. • undertaken a superficial analysis of information, with little or no consideration of the needs, wants and values of potential users. • identified few problems/opportunities and developed a design brief with little reference to their investigations.	1
0 marks • produced no work that is worthy of a mark.	

NON EXAMINED ASSESSMENT (CW)

Assessment Criteria		Marks	Assessment objective
(a)	Identifying and investigating design possibilities.	10	AO1

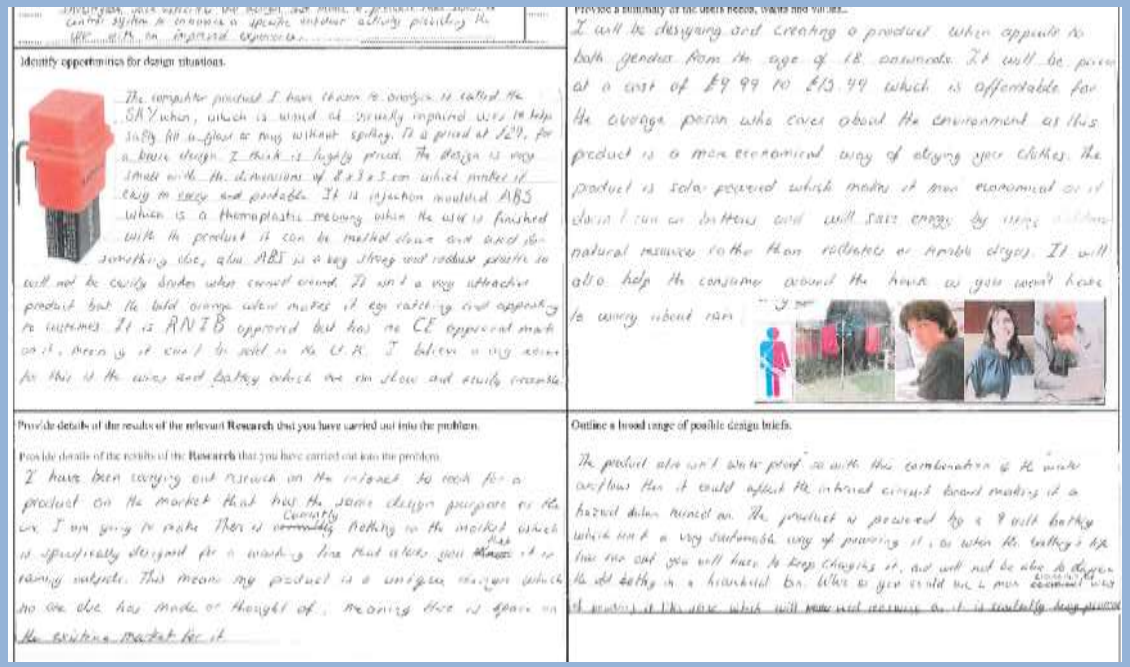


INFORMAL Sketchpad

- Understanding of the problem.
- Focussing on users.
- Research strategies.
- Analysis of information.
- Focussed relevant research.

NON EXAMINED ASSESSMENT (CW)

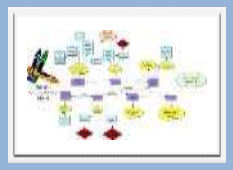
Assessment Criteria		Marks	Assessment objective
(a)	Identifying and investigating design possibilities.	10	AO1

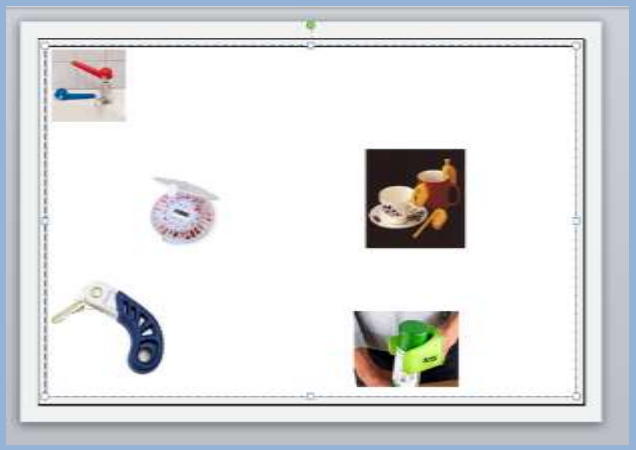


INFORMAL Sketchpad

- The design context must be analysed critically.
- There will be a number of possible design tasks identified.
- Detailed and relevant research will be evident
- Consider the needs and wants of users
- Analysis of existing products
- Research into past / present professionals

NON EXAMINED ASSESSMENT (CW)





Brief 2: IMPROVING THE DAILY LIFE OF ELDERLY PEOPLE

Look at the specific needs of elderly people and design a unique product that would support their everyday lives.

- The design context must be analysed critically.
- **Get the candidates to ask themselves simple questions.**
- What are the needs of the elderly?
- What problems do they have?
- What are they able to do?
- Is the shape important?
- What about cost?
- What products are available for the elderly?
- Sex - male or female?
- The environment? Kitchen, living room etc.
- What materials are commonly used in products suitable for the elderly?

How do you start?

- Spider diagram or a brain storming diagram is a good starting point.
- This should then lead to focussed research.ie analysing existing products or parts of products, interviews, disassembly of products, materials, gear mechanisms, system circuits etc.

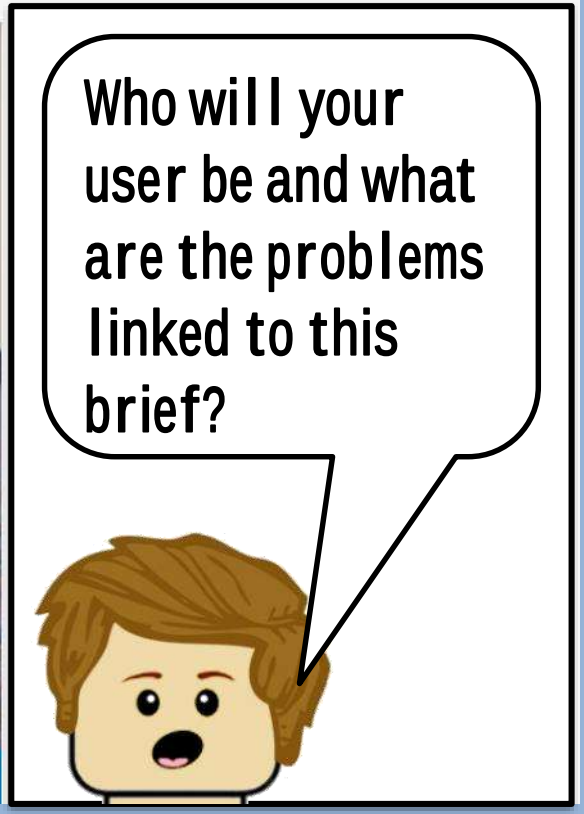
Brief 3 - OUTDOOR PERSUITS & PHYSICAL FITNESS

7th May

Parents are the best role models for getting children active

Maureen McGonigle
Sports columnist

A child with an active parent is much more likely to be active



The Headlines

OBESITY CRISIS What is the UK obesity crisis, how bad is childhood obesity in the UK and what's the definition of clinical obesity?

> It's claimed that by 2030, half of the UK could be obese if the trends continue

How bad is childhood obesity in the UK?

According to the Government, younger generations are becoming obese at earlier ages and staying obese for longer.

It's estimated around one in every five children aged ten to 11 year olds are obese, with a third of children aged two to 15 overweight or obese.

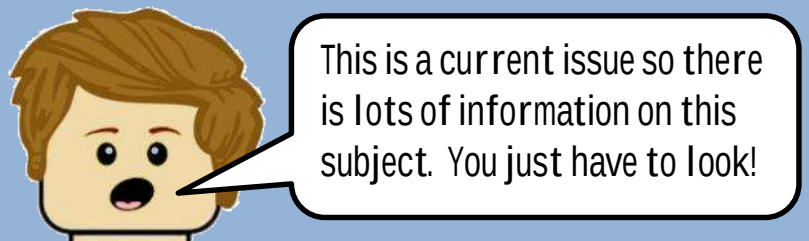
And according to Public Health England, nearly half of kids are overweight in parts of the UK, with seven out of the fattest areas in Britain located in London.

According to PHE, the ten worst areas for ten to 11 year olds in Britain are Brent, Barking and Dagenham, Wolverhamption, Sandwell, Westminster, Southwark, Greenwich, Newham, Tower Hamlets, and Knowsley.

Childhood obesity is an epidemic that requires decisive national action from Government - Diabetes UK

Written by: Helen Dickens, Assistant Director of Campaigns and Mobilisation | Diabetes UK Posted On: 17th April 2018

Diabetes UK's Helen Dickens writes that while good progress has been made by the soft drink industry to reduce sugar in products, there is still a great deal that MPs and the Government can do to help tackle the obesity crisis and begin turning the tide on weight related chronic illness.



Ten worst areas for childhood obesity named amid health crisis warnings

New study shows nine of the most overweight neighbourhoods are in London

What are the problems leading to this then?

Are young children spending all of their spare time doing this?

What are they doing instead?

Is it exercise and diet?

(a) Identifying and investigating design possibilities [AO1] *The candidate has:*	Band
9 – 10 marks • undertaken a comprehensive and effective identification of opportunities for the development of designs within the prescribed context. • undertaken comprehensive, relevant research and investigation, clearly linked to the context and, where appropriate, the work of past/present professionals and companies. • undertaken an effective analysis of information, reflecting the needs, wants and values of clients or potential users. • identified a range of problems/opportunities to clearly inform the development of possible design briefs.	4

Who do you need to talk to for research?

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What if you have an answer before you start to research or analyse products?

- Sketch your thoughts and add as much detail as you can.
- Get them to make a prototype or model.
- Then question the prototype.
- Using the prototype as a starting point, can you think of different issues/problems?
- How can you get over the problems?
- Do you now need to do detailed research?

Paper & Board Modifications

Commerical tools and processes

- **Lithography** – Printing process that allows you to print bigger, quicker, cheaper, on thicker materials.
- **Die cutter** – machine that cuts and scores = quicker, more accurate, no ripping on edges, no limit on size.
- **UV varnish** – Varnish is sprayed on and then dried instantly by passing under UV light – quicker, more reliable, cheaper, can be applied as spot varnish that only makes a little bit shiny.
- **Hot glue** – applied by machine = quicker, cheaper, less wastage, more accurate