Home Learning 2020

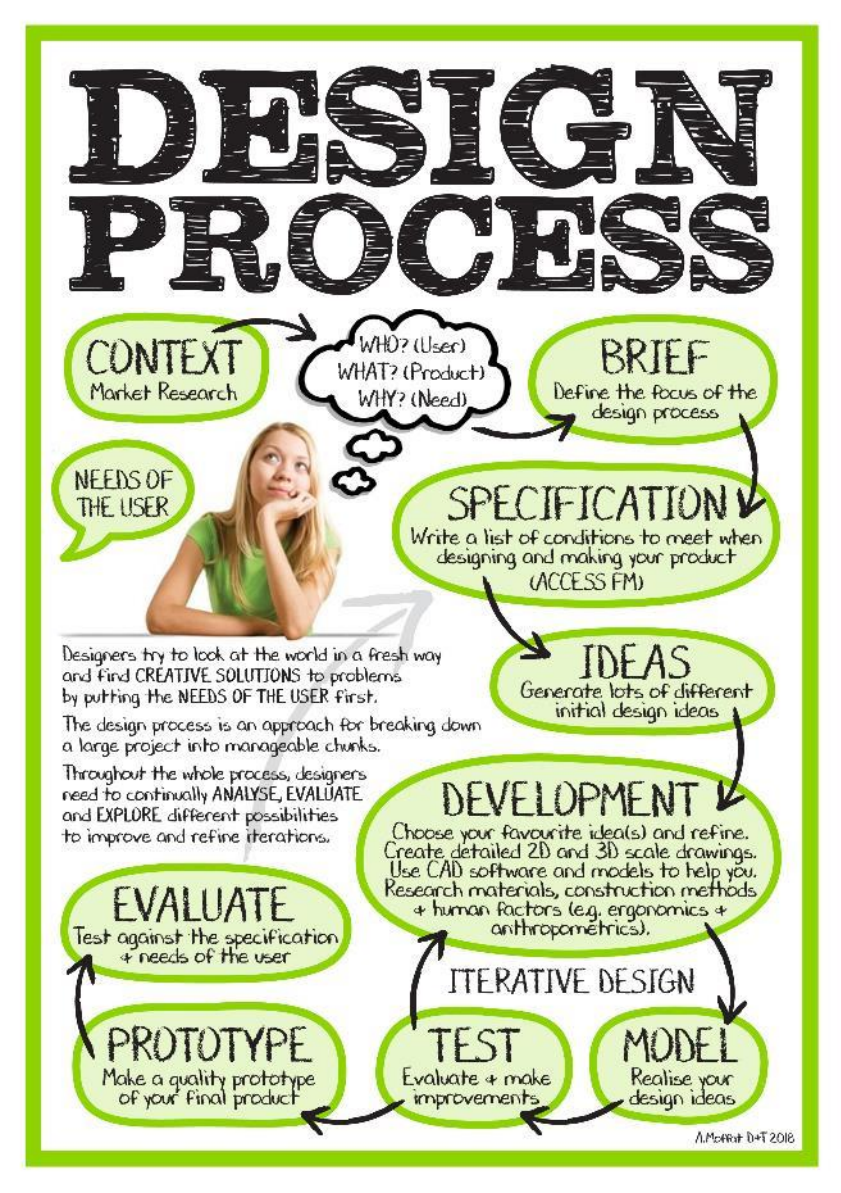
Design & Technology

Non-Exam Assessment (NEA)

wjec cbac

eduqas
Part of WJEC

Week 1 – Lets start



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

Week 1 – Looking for problems in the given context – 1 Page

This is what the exam board says you need to do…

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 is the context you need to consider:

Sustainability – Design a creative and innovative storage solution / Product for somewhere in the home which will be made from fully recyclable / reclaimed materials.

Week 1 – What do I need to produce…

All the sheets you are required to complete are in a power point ‘Student Booklet’ for you to fill out.

- You can fill them out in the power point Student Booklet
- Use paper, pens and pencils to complete the work, you will find layout examples to help you.
- Or print out the sheets and write on them… just remember how much ink this will take.

Week 1 – Analyse the context

- Start with keywords
- List as many problems as you can think of
- List as many products that are used to solve the problem now
- Ask your parents to think about the context and give you keywords, problems and products.

The following is the context you need to consider:

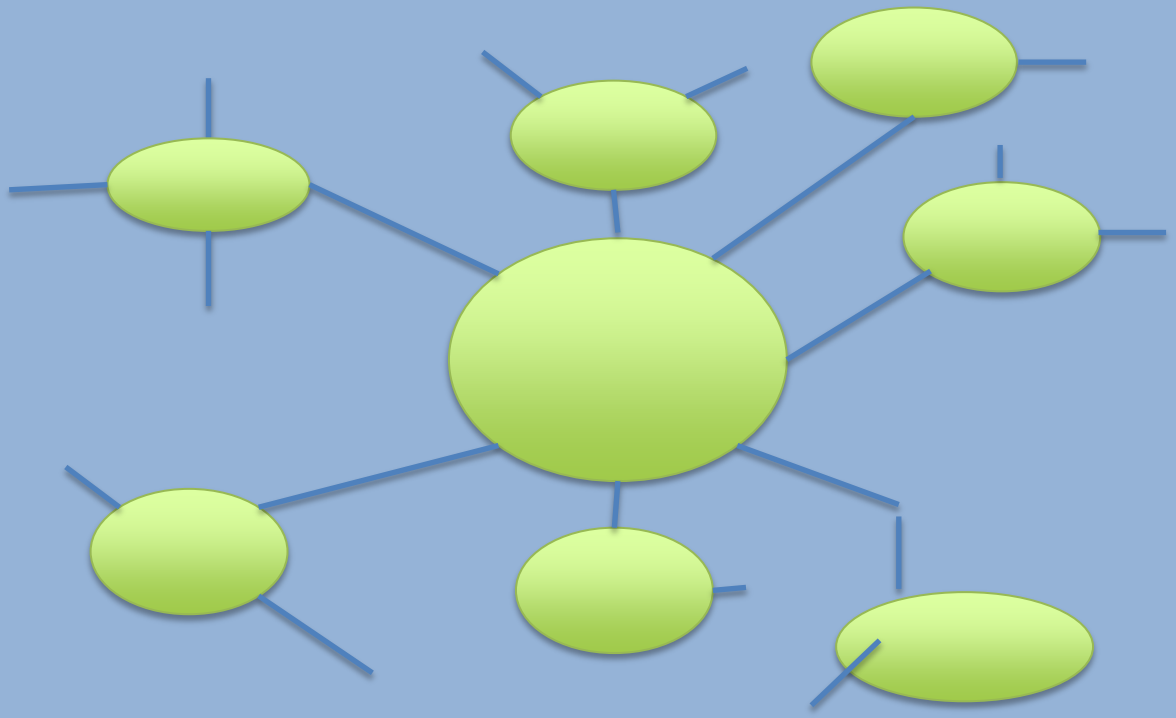
Sustainability – Design a creative and innovative storage solution / Product for somewhere in the home which will be made from fully recyclable / reclaimed materials.

Analysis of the Context – Sustainability

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 Context layout on paper

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

Week 2 – The User – 1 Page

This week you must you must find someone in your household, that will eventually by the user for the product you design.

The user

- This week you need to complete a profile of your user.
- The following sheet gives you a sample of what type of information you need to find out.
- Remember to write your own questions using the keywords and questions to give you ideas.
- Complete the user profile sheet.

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?

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

Materials: What materials do they prefer?

Other:

EXAMPLE PAGE

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?

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?

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.

Week 3- Investigating the area – 1 page

Now you need to analyse the area you have chosen in the home to improve with your product!

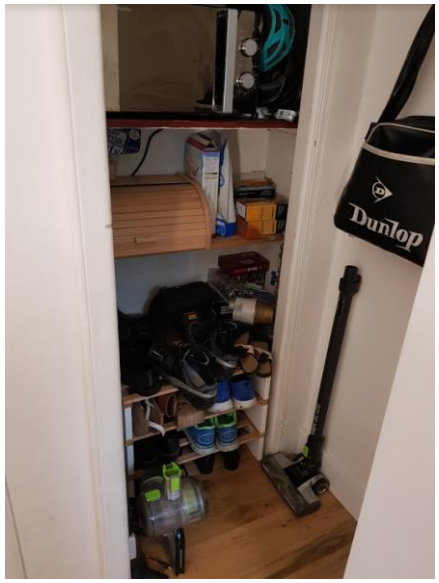
Finding Problems and building a future Specification

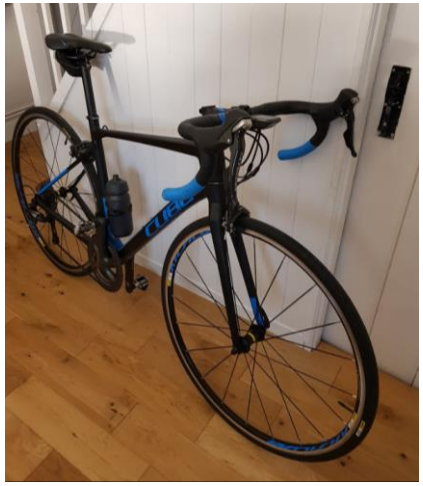
Problems I have found:

- 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.



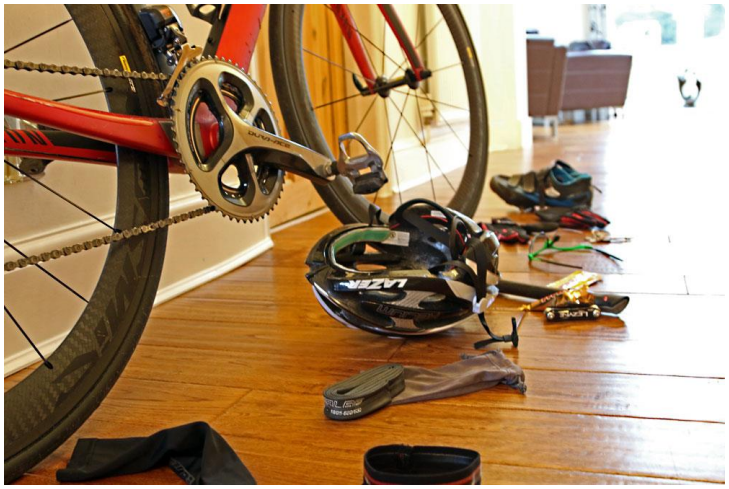


Some of your spec points will be a must and some will be a might if you are not sure about them!

Research into problems

On this page you need:

- An introduction box
- Images of the problem
- Problems you have found
- Possible spec points



Problems I have found:
You need to continue to find problems. Try to find as many problems with the space and what's in it.
Think about:

- **The space- what might get in the way?**
- **How is the space used?**
- **What mess there is?**
- **What specific products are there?**
- **Any more problems you can see?**

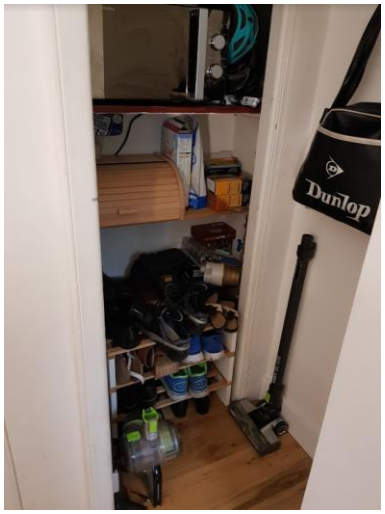
Level 6 and Up:

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?

EXAMPLE PAGE

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:

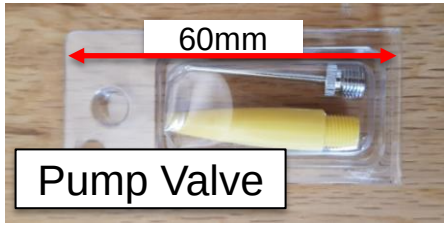
- In some areas of the house there are shoes and sports equipment all over the floor and not really anywhere for it to go.
- Some cycling equipment is expensive and may get damaged on the floor.
- The bike itself could slip over and fall if knocked.
- All of the shoe storage in the house is already full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

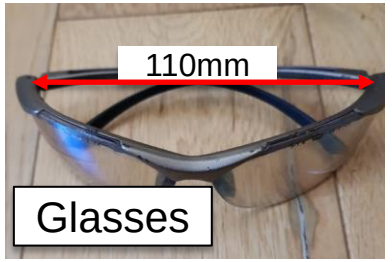
Week 4 – Research into the products involved and complete a product analysis – 2 Pages

At this stage you now need to analyse and look at the products that will be involved and then conduct a product analysis of an existing product.

Analysing the products involved

At the top of the page you need to write what you will be doing on this page.



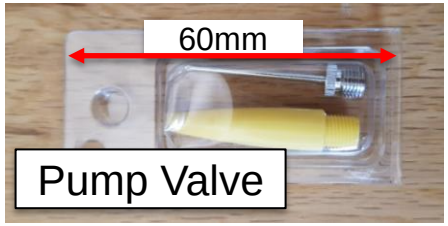


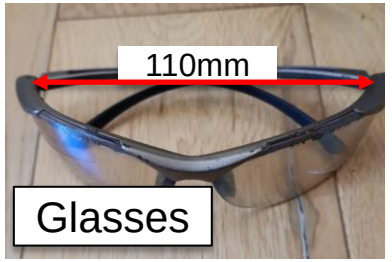
Possible Specification points:
You need to continue creating possible spec points, now linking to the products you may be storing or tidying.

Problems I have found:
You need to find problems with the products you have chosen. Sizes? Shapes? Weight? Colour? Design?

EXAMPLE PAGE

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. You must do the same for your own context.





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?

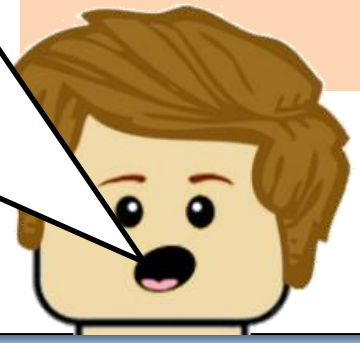
Level 6 and Up:

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**



EXAMPLE PAGE

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.