



GCSE

DESIGN AND

TECHNOLOGY

(8552)

NEA

(Non Exam Assessment)

Name

GCSE Design and Technology

Unit 2 – Non-exam assessment (NEA)
Design Challenge

This is the course work part of your GCSE

Students should produce at least one final made prototype, based on a design brief which will arise from Investigating the Contextual Challenge set by AQA.

Release date: 1st June

Time: 30-35 hours (recommended).

Evidence: Written or electronic design portfolio with photographic evidence of final prototype(s).

Approximately 20 pages of A3, digital or A4 equivalent.

The contextual challenge

Studying or working at home



Assessment objective 1

AO1: Identify, investigate and outline design possibilities to address needs and wants.

This AO forms 10% of the qualification and is examined solely through the NEA.

Identify – looking at areas and opportunities where designing can take place.

Investigate – pursuing ideas and gathering information relating to a context.

These are interdependent and take place in no particular order.

Outline – produce a design brief and specification to inform AO2.

The PLC below will help you to manage the tasks you need to work through to complete the investigation/research part of your project. This is worth 10 marks out of 100 and should take about 3 hrs. tick off each task as you complete it.

The following pages will give you examples of how to set out your work and how to do each task.

Personal learning Checklist

Tasks	Complete
Mind map the Contextual Challenge	
Identify the design problem	
Task Analysis	
Identify a client	
Interview your client	
Research existing products	

WAGOLLS

Bellow are examples of how your first page should look. It is good to do each task in a separate box so you can move them around and layout your page. Remember you only have 20 pages for your whole project so get as much information on every page as you will possibly can. NO LAGRE WRITING!


Titles should be font size 16

The main writing (body text) should be no bigger than 12 and no smaller than 8.


Contextual Challenge: The Contemporary Home

PROBLEM
Our school boarding house has many boarding students attending each year. Quite often these students are international. The rooms are very well designed, however the desk space can be dark and sometimes cramped. I will conduct some initial research in order to determine what approach I taken when designing this Product.

EXAMPLES OF PRODUCTS:




Pictured here is a designer table lamp from Heal's, a British furniture store chain. It has a very attractive sleek, modern design and has been designed/made with expertise resulting in its expensive price.




This is ambient ceiling lamp also from IKEA. The product's price is from the solar panels used as they can be expensive but appeal to customers as they last for longer.


LOCATION:
The product will be used in [redacted] School Boarding House which is located in Brunei. It will be used on, either, a bedside table or the study desk as task lighting.



Also in the Houses, there's communal areas that need some ambient lighting to be designed for socialising/relaxing. There is also the lighting for outside and around the Boarding House for when it's dark.



ANALYSIS OF PROBLEM:




RESEARCH TASKS:
CLIENT INTERVIEWS: To interview the buyer and end user - a teacher and student from the Boarding House - to establish their needs such as budget and practicality. This is important as it will develop my design to help satisfy both customers. Also the investigation of the environment used by the student for the lighting will aid the design.
EXISTING PRODUCTS: To evaluate/analyze existing products being manufactured and sold to the public. This will help to provide important features needed or elements that need to be considered.
DESIGN MOVEMENTS: To examine designers/movements to help begin a design strategy for the subsequent planning of my lamp. This will help when choosing the style and aesthetics for the lamp.
IMPORTANT SIZES: To attain the critical sizes of specific components that are necessary for the lamp. Also the minimum and maximum dimensions of the actual lamp and the space it could take up are significant.


SUMMARY:
I need to research the Boarding House including customer, environment and requirements as my product will be placed in the Boarding House. As well analysing existing products, packaging and bulbs/fixtures, I will plan a design strategy using inspiration from movements/designers. The design will result in needing to decide if it's task or ambient and where it will be located in the Boarding House.

Contextual challenge: Providing a safe and comfortable home
Parents face a lot of issues with children. One of these issues is knowing what temperature it is safe to give an infant their food. My products are a range of kitchenware made of thermochromic material. This is a safety feature that will make it easier for parents to give their children food at a safe temperature.


Examples of existing products:



1: This bottle is very suitable for children as it is brightly coloured, and the silicon sleeve will make it easier for infants to hold. It is long lasting and durable as it is made of glass but this makes it expensive compared to other bottles at £12.99. The fact that these bottles are made of glass is also a disadvantage because it is harder to store and transport as it may break, and it is heavier and more difficult to hold than plastic.




2: These spoons from mothercare are very appropriate as they are made of coloured plastic which is soft, flexible and not as hard as metal. The curved shape of them and the rounded edges make them aesthetically pleasing and safer for children as they are soft on their mouths. The rubber grips on the handles makes them easier for infants to hold and I will include this on my product to make it more suitable for the target audience. Because of the plastic material, they are cheap and easy to sterilize.



3: This product is a set including a plate, spoon, cup and cutlery, making it a better overall product because it can all be bought in one. The bright unicorn design is appealing to children however the packaging is plain. It is made of cardboard and the product is bamboo making it eco-friendly. However, I will not have access to bamboo so I will have to make mine from an alternative material which may be less environmentally friendly but easily recycled. I also found that kitchenware made of bamboo can be priced from £8.95 to £36. I like the package design as it can be kept as a way to store all the objects together.

Storage: It is suitable for the product(s) to be stored in kitchen cupboards/drawers with all other kitchenware and cutlery. The product will be waterproof if it is plastic so can go in a dishwasher. The size and for shape of the products makes it easy for them to be stored. Another storage option is to make the packaging in a style so it can be kept as a container or holder to store the product in. This will reduce the amount of packaging thrown away and make it more environmentally friendly.



Research tasks:

CLIENT INTERVIEW: I will interview someone who has small children to find out what parents want for their children. This will make my product more suitable for the target audience and its use.

ANTHROPOMETRICS: I will use anthropometrics to determine a suitable size and structure for my product based off existing products and the size that is suitable for children.

PTC PRODESKTOP AND 3D PRINTING: My product will be designed on PTC PRODESKTOP and made using a 3D printer. I will need to carry out both primary and secondary research in order to find out how to use both of these things to make my product.

EXISTING PRODUCTS: I'm going to do further and more detailed analysis on existing products and what people think of them in order to decide what I should and should not include in my products.

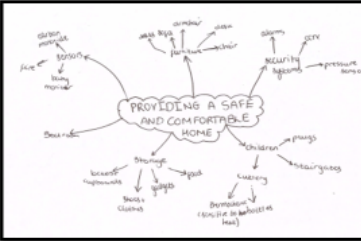
SHOPS: Looking at shops and brands that sell children's kitchenware will help me further develop my ideas based on the design ethos of other companies. It will also show me prices and materials of products which will help me choose what to make mine out of and what price it should be.

HEALTH AND SAFETY: I will research key health and safety features that should be included in a food related product for young children.

ERGONOMICS: I will research ergonomics and use anthropometrics research in order to find ideal size and structure that will make my product more suitable for children to use.

Client interview:
Q: What do you think are the best colours for products for young children?
A: [redacted]
Q: What ideal features would cutlery for your child have?
A: [redacted]
Q: At what age would your child move on to metal cutlery?
A: [redacted]
Q: If the product came with packaging you can store it in, would you be more likely to buy it?
A: [redacted]
Q: How important is the sustainability of a product to you?
A: [redacted]
Q: What price would you be willing to pay for a thermochromic cutlery set?
A: [redacted]

Analysis of the problem



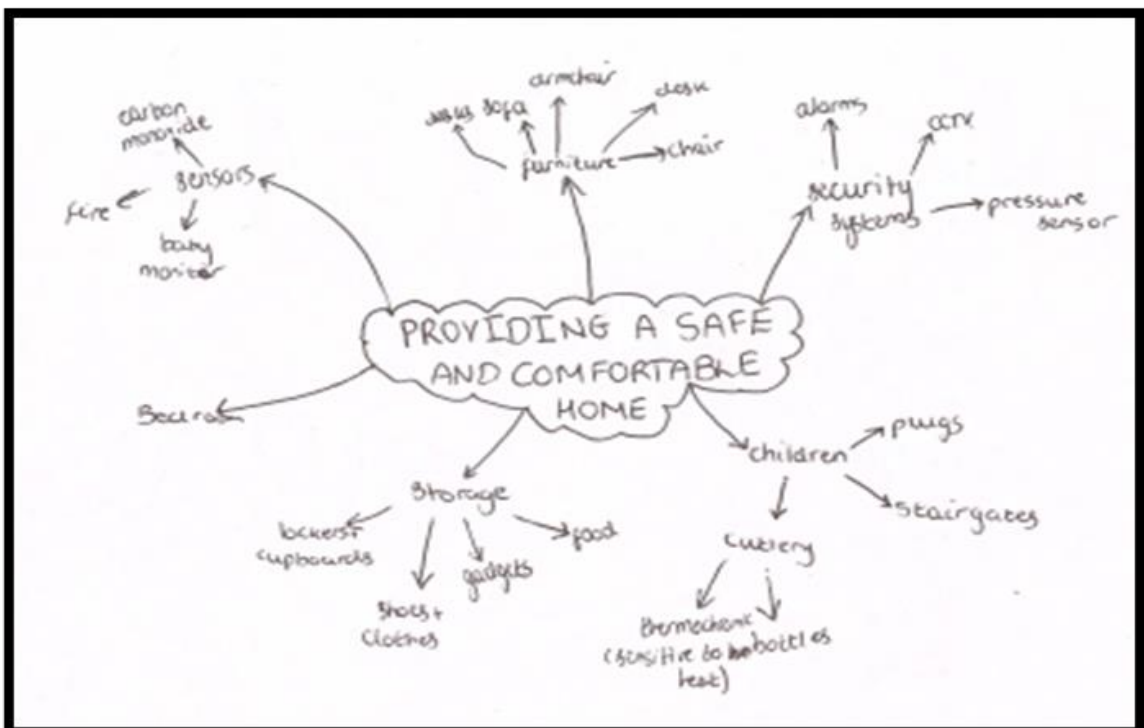
Summary: In conclusion, I have decided that my product will not be made from bamboo or glass as these materials are too expensive and make the product less suitable for the target audience. My products will be made of thermochromic material in order to make it safer for children. I will include details, possibly made of rubber or plastic or grooves in the material, that will make it easier for children to hold. I will include packaging that is cardboard and therefore environmentally friendly, and can be kept and used as a way to store the products. I need to do a client interview before I decide more details of my product. The client I will interview will be a parent with a child under 5, but the product will be for the child to use. I will determine the exact age range after I do my interview.

Non Exam Assessment

- **The contextual challenge must be identified**
Nature and the Environment. This must be written on your first page.
- **Mind map ideas**
Bubble diagram of all the possibilities surrounding your chosen context.
And choose 1!
- State the “problem”
Why is the product you are going to design needed?
- Write a design brief
Briefly describe what it is you want to design.
- Task analysis
List all the things you need to research for your project.
- Identify “the client”
Who are you making this for? Is it an individual or a company? Write a profile of them age, interests likes/dislikes etc.
- Client interview.
Write at least 5 questions and your clients answers to help you to write a specification for your project and start designing.

Start with a mind map with Studying or working from home at the centre. Write down as many things you can think of that link to this theme. One of the ideas should be Houses for wildlife and you should branch off into all the possibilities for this such as bug hotels and bird houses.

Below is an example of a mind map on the theme of Providing a Safe and Comfortable home. The student settled on childrens safety spoons based on this part of their investigation.



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Now you have investigated the contextual challenge with your mind map you can identify the design problem. This should be a paragraph explaining what you think needs to be designed and why. For example:

When studying at home my brother makes a mess with his pens and pencils getting everywhere. He could do with a desk tidy to keep his equipment organised.

IMPORTANT!!! DO NOT COPY THIS IT IS JUST AN EXAMPLE. YOU MUST COME UP WITH YOUR OWN IDEA!

You can now write a design brief. This should be a short description of what you intend to make. For Example:

I intend to make a small desk tidy to keep pens and pencils organised. It could also have a docking station for a mobile phone and maybe a lamp or light built into it.

AGAIN, DO NOT COPY THIS IT IS JUST AN EXAMPLE. YOU MUST COME UP WITH YOUR OWN BRIEF!

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age, interests likes/dislikes etc.
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for your project and start designing.

Now you have a clear idea in your mind about what you want to make you will need to make a list of all the things you need to research in order to design your product and make your idea a reality. See the example below for a child safety spoon.

Research tasks:

CLIENT INTERVIEW: I will interview someone who has small children to find out what parents want for their children. This will make my product more suitable for the target audience and its use.

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Analysis of the problem

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One research task that is essential is to identify and interview “a Client”.

The client can be someone you know who will play the role of some one you are designing for or you can be the client but make up another name. Write a profile of the client and then an interview for them to answer about their needs for your product. The interview should be at least 5 questions. See the examples below.

Target Market and Client Profile

2

Name: Angela [REDACTED]

Gender: Female

Age: 45

Family: Husband, Robert, 3 children (19, 17, 15)

Occupation: Nurse, works long hours

Hobbies: Gardening, country walks, has lots of animals

Needs: A product that will be able to withstand family life, but also has an aspect of style consciousness. The product would need to be noticeable (from the style conscious aspect), but not stand out too much, as it would best fit in her bedroom, and after long hours at work she needs her bedroom to be both relaxing and comfortable, an easy place to fall asleep in. The product would need to be of good quality, in order to withstand her family orientated lifestyle, but would also need to not be too expensive, because a majority of her income is spent on providing for her family. The product would need to be practical and to be able to be used in different situations as well as being a bed throw, such as a picnic blanket or to be thrown over the sofa. She is fond of older movements, as she feels that more modern ones are too childish, and her whole family is a bit older now.

Specification points from this:

- Strong stitching- to withstand family life and the different things it may be used for



I need to research into the requirements of my target market, as this will play an important role in the design of my product.

My Target Market

My target market is for adults/ families, who need products that provide both practicality and look attractive. The age bracket is around 30-50, as I feel that this generation appreciate older movements, such as Arts and Crafts, which I prefer. I am not aiming my product at children, however the product needs to be able to be in a young child home.

Client Profile Questions and Answers

1. **What is the maximum price you would pay for a soft furnishing?**
£300, for something of really good quality that was designed to last for some time
2. **Requirements of the product?**
Good quality, uniqueness, bespoke, comfortable, correct size for my bedroom.
3. **Would you want it to be the main feature of the bedroom?**
A strong feature, but not necessarily the main feature
4. **Is practicality or design more important?**
Both are important in a product for me
5. **Does the product need to be long lasting?**
I would like it to last 5-10 years. I wouldn't necessarily keep it forever, as after time I might want to redecorate
6. **Many different designs on the product or one main one?**
I prefer eclectic designs
7. **Best colours for the bedroom?**
Blue, cream, light pink and light green
8. **Do you like the Arts and Crafts movement, or do you prefer more modern movements?**
I like the arts and crafts movement, and generally prefer older movements to the more modern ones like Memphis

Client interview:

Q: What do you think are the best colours for products for young children?
A:

Q: What ideal features would cutlery for your child have?
A:

Q: At what age would your child move on to metal cutlery?
A:

Q: If the product came with packaging you can store it in, would you be more likely to buy it?
A:

Q: How important is the sustainability of a product to you?
A:

Q: What price would you be willing to pay for a thermochromatic cutlery set?
A:

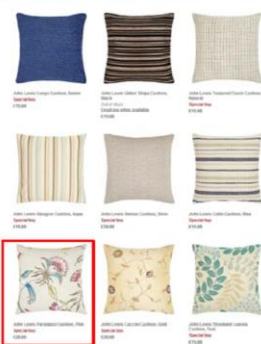
Research existing products

For the final stage of assessment objective 1 you will need to look at existing products, similar to your own idea, and analyse them. Your analysis should include images of the products and can be a paragraph describing the product or a full ACCESSFM analysis (there is a help sheet for this on the final page). Examples of both are shown below. You should analyse at least 3 different products.

Research-Current product analysis- Soft furnishings

3

I am going to look into what sort of soft furnishing there are currently available in the market, who they are aimed at, their prices, where they are intended to be placed etc.



Soft furnishing there are currently available

On the John Lewis website the main soft furnishings that were currently available were pillows. However these were mainly intended to be decorative, rather than for practicality too. However I liked how they used multiple colours in their designs, and how they used colour to reflect their target market. I feel that all these pillows are aimed at 25- 60 year olds in my opinion, as they are all slightly more expensive than average pillows, meaning they are aimed at people who are going to be able to afford them, which won't be young adults. However only one of these products was intended for the bedroom (highlighted red), with all the others being aimed at the living room or conservatories. I think that this is because of the materials they are made with, as most of them are made with cotton and another material, whereas the one intended for the bedroom is made with a different material.

Soft furnishing that are currently in my home

In my home we currently have multiple soft furnishings, both large and small. The majority of our soft furnishings are pillows and blankets, although we have some sofas in our living room used as a primary feature. Some of our soft furnishings have an obvious intended room (e.g. sofas), however some of our pillows do not. We have lots of blankets around our home, that are used in many different ways, from covering the sofa, so it doesn't get messy, to being a decorative feature on my bed. We also have rugs that cover the floor, that are both practical and decorative, which is one of the main requirements from my target market. I like our rugs, however they are mainly plain and although some have motifs, there is no obvious pattern to them. I don't feel like some of our soft furnishings have a very small target market, as (especially with the rugs) they are plain and therefore do not draw in a specific gender, age group etc. I have shown some soft furnishings from my home on the next slide along with an analysis



Soft furnishing there are currently available




On the House of Fraser website the most popular soft furnishing was 'bedspreads, throws and blankets'. They had an obvious intended room, as it says in the name where they are intended for. I liked this product because it is both attractive and practical. They also have many different uses. I feel that these products are aimed again at families and adults, due to the pricing of them. These products aim from £35-£150, so even the cheaper products are more of an investment product than a one off use product. Again they mainly use cotton as their main material, however some of the products are more decorative, and therefore use other materials in their manufacture, such as ornamentation. I like the products that have the additional ornamentation, as I feel it makes them look more sophisticated and luxurious.



Rug

This is a rug that is in the office of my house. I really like the border with a central pattern design and also the colours it uses (gold, blue and burgundy). I also like the design of flowers and swirls and feel that this is quite typical of the era I have chosen. This rug is used to be attractive, however it is also good at keeping the heat in and reducing the amount we have to vacuum

Analysis of existing products

Product	Aesthetics	Cost	Consumer	Environment	Size	Structure	Function	Material
	The colours of this product are visually pleasing and appealing to young ages. The product looks nice because it has smooth, rounded edges that are also a safety feature.	One fork and one knife in this set costs £4.90. This is a reasonable price for some simple cutlery as it does not come with any extra features.	This product is made for young children over 9 months. It is suitable for this age as it helps children learn to feed themselves because of the comfortable shape and grips and it has smooth, safe edges.	This product is BPA free which makes it more environmentally friendly as it does not contribute to water pollution. However it is made of plastic and the manufacturing and disposal of the product is not environmentally friendly, although it can be washed and used again.	The size of this product is good because it is small enough that infants can hold it themselves which helps with the development of skills for the child.	The product has rounded edges and a small mouthpiece that make it safer for the baby to use. The handle is smooth and slightly curved which makes it easy for infants to hold.	This product helps teach infants to eat on their own. The curved shape, rounded design and grips on the product helps to do this as it helps infants to easily hold their own cutlery.	Although the material is not environmentally friendly, it is good for the function. It is soft and comfortable which makes it easy and safe for children to use, and it can be coloured to appeal to them.
	This product is colourful and attracts children. The product is coloured and can be personalised so is interactive. The box comes with different fun designs that appeal to kids.	The price of this product is a little more expensive than other baby cutlery but this is because it can be personalised to make it more appealing.	This cutlery is slightly less suitable for the target audience of 6+ months; it is at a low age but is more dangerous as it is made of metal and should be for older children.	As this product is made of mixed materials it would be hard to recycle, although the cardboard packaging could be easily recycled and the product can be re-used.	This product can be bought in a range of different sizes and most are suitable to be held and moved comfortably by infants.	The handles of the cutlery are moulded so they are rounded and the backs of them are textured and easy for children to hold.	The design of the handles makes it easy for children to operate but the mouthpieces are made of metal which may be dangerous and unsuitable for children.	The material of the handles is soft and safe but I would not make the mouthpiece out of metal because it can be dangerous and not function properly.
	This product comes in a range of different colours that makes it more attractive to children. The curved and smooth shape makes it appealing.	The price of this starts at £30.49 which is very expensive for simple cutlery that does not come with any extra features. The same product can be bought cheaper elsewhere.	The design of the product makes it quite suitable for the user. The cutlery is curved and textured so is easy for infants to use although they are too big for most infants.	The product is made of plastic which makes it recyclable but it can be cleaned and used again so there is no need for it to be thrown away.	The size is suitable for most children over 10 months but it is too big for the target audience of children over 6 months. They have trouble getting them in their mouths and holding them.	This product's handles are extremely curved which makes it very easy for children to hold.	This product functions well for children slightly older than the age range. It is perfect size for older children and is easy for them to use themselves because of the structure.	The material is made of soft plastic. This makes it safe and comfortable for children to use, despite it not being very environmentally friendly.

A

Aesthetics

Where did the designer get their inspiration? Could the product look better?

Do you think it looks attractive or ugly, Why?

What does the product look like? *THINK* shape, form, materials, size, beauty, ugliness**C**

Cost

Is it affordable to your customer? Will it make a profit?

Is it value for money?

How much does it cost € €

**C**

Customer

What impact would it have on a customers life?

Why would a customer buy it? What makes it suitable for them?

Who would buy it? Who would use it?

**E**

Environment

What is the products impact on the environment? *THINK* batteries, rethink, refuse, reduce, reuse, recycle, lifecycle

How would the product be disposed of?

Is the product needed or wanted? How long will it last?

**S**

Safety

Is the product high quality? Does it meet safety standards?

How has the designer considered safety?

Could the product hurt anyone? Are there any sharp edges?

**S**

Size

Is it an appropriate size? Would it work better if it was bigger or smaller?

Does it come in different sizes ?

How big is it?

**F**

Function

Does the product work? Could the product work better?

How does the product work? Why is the product needed?

What does the product do? Is it easy to use?

**M**

Materials

What impact could the designer's choice of material have on the environment?

Would a different material make it better?

What material has it been made from?

