



Year 11 into 12 'Bridging the Gap'



June 2022

Aim of 'Bridging the Gap'

- To give you an opportunity to experience the workshop and the department
- To bridge the gap from GCSE to A-level
- To begin the Design and Make Task sheets (mini-project) that you will begin making in September 2022

Why 'Bridging the Gap'?

- **Chance for you to get to know me and my expectations (if you do not already know me)**
- **The layout of lessons in Sixth Form across the two years**
- **Get to know the other students in the class and across the department**
- **Get used to the D&T working environment in Sixth Form**

Week By Week

- **Task 1:** Pewter Casting Task
- **Tasks 2-6:** Context Analysis/User Profile, Product Analysis, Sketches of Design Ideas (with detailed annotation)

PART 1 – Design and Make Task

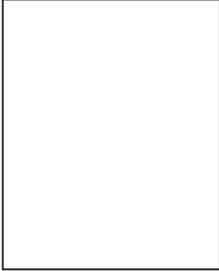
• Pewter Casting Practical

Pewter Casting 

Ideas

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Final design template (cut out if needed to help trace onto your piece of MD)

	Justification for final design idea, and any points to note when manufacturing (e.g. QC or H&S);
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- Only have just over an hour to do this
- Try to think about simple designs
- Maybe link it to a designer – use your phones for research if you want to
- Work with a partner if you want to
- Make notes on the sheet if you feel you need to

Submission of Work

Please email me if you would like me to feedback on your sheets ready for September (please write your email address down for me if you are an external student).

You will be expected to submit work by email, or through Google Classroom if you are current Presdales students

You can email me on:

schillacirowlandd@presdales.herts.sch.uk



Year 11 into 12 'Bridging the Gap'



Sustainable Lamp Project

Sustainable Lamp Project - Tasks

Task 1: Introduction to Project & Designer and Design Movement Research (Optional)

Task 2: Context Analysis & Customer/User Profile

Task 3: Product Analysis

Task 4: Design Ideas

Task 5: Materials (Optional)

Task 6: Design Development

Introduction to Lamp Project

- To design and make a table lamp using a chosen designer as your inspiration, thinking about sustainability.
- The mini-project will be completed by October Half Term
- You will need to make the lamp, so a good understanding of materials & processes is essential

Task 1: Tasks – Inspirations Sheet

Look at the following Designers and Movements, pick 2 or 3 from the list and find some images of their products that you like to help inspire your lamp design:

- Arts & Crafts Movement
- Art Deco
- Modernism: Bauhaus
- Post-Modernism: Memphis
- Phillipe Starck
- James Dyson
- Margaret Calvert
- Dieter Rams
- Charles and Ray Eames
- Marc Newson
- Marianne Brandt

Produce a sheet of images of your chosen designers/movements and annotate with what you like about them, how it might inspire your lamp shape

Example Sheet:

b Marianne Brandt

Who is Marianne Brandt?

Marianne Brandt (1893-1983) was a German painter, Bauhaus photographer and designer who specialized in metalwork. Brandt focused on painting early in her career and began her studies at a private art school in Weimar, Germany, in 1911 at age 18. In 1912 she transferred to the Grand Ducal College of Art, also in Weimar. Her early work consisted primarily of Expressionistic portraits, which were exhibited for the first time in 1918 at the Galerie Grettenberger in Chemnitz. Many of her designs include geometrically pure forms



Most famous work

Some of Marianne Brandt's most famous work included designed in the 1930s, Thèière et passe-thé tea pot 1924, her many ceiling lamps, L'Atelier se reflétant dans la boule auto portrait, Rare Kandelabakelite Table Lamp and many more. Brandt's designs for **metal ashtrays**, tea and coffee services, lamps, and other household objects are now recognized as among the best of the **Weimar and Dessau Bauhaus**.



Why I chose Marianne Brandt

I chose Marianne Brandt's work because I think that she includes a **unique** and **elegant** style to her designs and approaches her work from a functionalist perspective that was revolutionary for her time. The simple clean lines of her pieces and geometric shapes encompasses the **Modernist influence** of Bauhaus design so her aesthetic will work well with the Bauhaus movement I have chosen. Not only this but she was an **influential woman** in her time who made herself known for her industrial products and I hope to incorporate her **abstract** and stylish features into my lamp



Keywords:

- Bauhaus design
- Geometry
- Metalwork
- Modern
- Elegant finish

Designers and movements

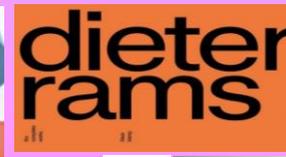
Who was Dieter Rams?

Dieter Rams was born in Wiesbaden, Germany, in 1932. He was strongly influenced by the presence of his grandfather who was a carpenter. Rams's early awards for carpentry led to him training as an architect as Germany was rebuilt in the early 1950s. He is closely associated with companies like **Braun** and the furniture company **vitsoe**.



Why I chose Dieter Rams?

I decided to choose Rams because I believe that his designs were extremely **innovative**, ahead of the time and finished to a high level of detail. As well as this, Dieter Rams is famously one of the first designers who strived to be **environmentally friendly** before it was popular, and I hope to embrace his modern features and sustainable ideas into my lamp.



Rams' products with Braun and vitsoe

By 1961, Rams had already become the Chief Design Officer of Braun, owing in part to the successful release of the SK 4 record player, the T3 mini radio (which influenced a certain pocket-sized music playing pod), the sublimely futuristic LE 1 hi-fi system, and the TP 1 record player. These products exemplified everything young Rams was about. Sleek (for its time), minimal, decluttered, stylish. Proper design in a time when electronic items were big, clunky, and show offish. In 1959 Dieter Rams asked to design furniture with Niels Vitsoe and Otto Zapf and later designed the wall-mounted 606 Universal Shelving System was launched.

Why was he a successful designer?

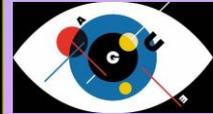
Through a career spanning five decades as an **Industrial Designer**, Dieter Rams, by removing fashion trends and avoiding obsolescence, has created a new form of timeless art expression. **Dieter Rams'** designs have proved to be timeless, and his work has greatly influenced modern design as it is today.



Bauhaus

What is Bauhaus?

Bauhaus—literally translated to “construction house”—originated as a German school of the arts in the early 20th century. Today, Bauhaus is renowned for both its unique aesthetic that inventively combines the fine arts with arts and crafts as well as its enduring influence on modern and contemporary art. The style of Bauhaus is commonly characterized as a combination of the Art with modernism. metal work, furniture architecture and graphics



Why I chose Bauhaus design?

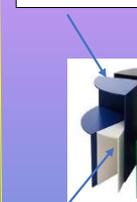
I decided to choose Bauhaus because it includes a wide range of colour, has a **distinctive look** and can be used in many different forms. Using lots of colours in my design will make my lamp visually appealing to the **target market**. The Bauhaus movement was especially popular in the 20s and 30s however was still continued to be used in many products after these decades, so I like the idea of incorporating a **20s or 30s** theme into the lamp as well.



Sharp clean lines

Colourful and eye catching

simple



Includes linear and geometrical features

Modern design and ahead of time



Who founded it?

The Bauhaus school was founded in 1919 in the city of Weimar by German architect Walter Gropius (1883–1969).

Task 2: Tasks – Context Analysis/User Profile

(OPTIONAL)

- Using your Designer/Movement inspiration sheet from Week 1, please come up with a Context Analysis and Client Needs/User Profile
- Think about your GCSE and the layout of the two sheets and how you might condense them down to ONE sheet
- Remember to think clearly about how you will consider **making the lamp sustainable**, for a certain user, and use a designer or movement as inspiration

Example Sheet:



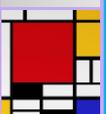
Context and user analysis

Function:

The function of a lamp is to provide light in a room. Apart from providing reading light, they also account for **night-time luminescence**. It should be able to stay light for a long period of time without overheating and is a safer option rather than the old-fashioned candle/ oil lamp. Lamps will have different purposes depending on the **target market**. For instance if I was designing a lamp for elderly people, I would have to make sure that the lamp provides a suitable amount of light in a room so that they can see and read well and is easy to use. For a child's lamp, it should have many safety features such as secured **batteries** (if used), limited amount of wires and a bulb that does not get hot. It should also have a fun **colourful design** so that it is more appealing for that audience and the material should be durable especially if it is a young child. If the lamp was going to be designed for reading, looking at existing lamps today, they tend to have a movable spine (which is similar to Marianne Brandt's) so that you can adjust the focus and **brightness** of the light. They also can have clips at the bottom which can clip onto the bed or table making it more accessible. For outdoor lamps, it is not suitable to use **electric wiring** as it is a hazard with rain and water so solar panelling is more appropriate. Not only is this a **renewable energy source** but it is more sustainable too. Depending on what target market I decide, I will decide the function of it to suit their needs and use **ACCESS FM** to help me with this.

Aesthetics:

Analysing my designers and movements, I can identify that the designs would be targeted at different audiences and ages. For example, a majority of Marianne Brandt's most famous work was designed in the 20s and 30s where many of her products are made using metal. It is noticeable that her work encompasses an abstract, geometric feature as shown in her metal ash tray. Incorporating metal as a material in my lamp would really showcase Brandt's work and ideas into my design and demonstrate my understanding and research of her work. Brandt herself designed a lamp (Rare Kandem Bakelite) which has a flexible spine so could provide different amounts of light for different purposes e.g., reading light. Looking at the Bauhaus movement however, it uses a lot more colourful, eye-catching designs which completely contrasts the elegant simplicity of Brandt's work despite her actually basing her work off of the Bauhaus design. Colours I noticed that were used a lot in Bauhaus design were blue, yellow, red and black which are colours that I could use in my lamp to highlight the Bauhaus features. Despite this, you can see similarities between the two as they both include linear and geometrical features, and the designs were very modern. I would love to embrace this colour into my lamp to make it aesthetically pleasing. Lastly, I chose Dieter Rams who is a German architect and has worked with famous company's/designers like Braun and the furniture company Vitsoe. In his work, I particularly like how modern and sleek his designs were and I would like to use this as inspiration for my lamp design. Where the Bauhaus and Brandt's work have a more 20s-30s look, Rams' work looks very 60s as shown with many of his designs and materials he uses. With the inspiration from the designers and movements, I hope to find a way to fuse aspects from each into one for my lamp to make it successful.



Sustainability:

To make my lamp sustainable, I need to consider a range of things. Firstly the materials I decide to use could perhaps be either recyclable, durable and long lasting. For example using materials like wood and certain polymers would be good for recycling however using a material like metal (the main material that Marianne Brandt used) would probably last longer than those materials however may be more difficult to recycle. For the power source, using batteries would require less energy and money than using a plug socket however they require replacing more and is not a sustainable power source as they can only be used once so wires are a better option. Solar panel lighting would also be a great option as it is also a renewable energy source however it can be unreliable and would be best suited for outdoor use. Also using an LED light bulb rather than a normal one would be more sustainable as LED bulbs use more than 75% less energy than incandescent lighting and have a much longer lifespan. I can make sure that my final product will be sustainable by following the 6Rs (reusable, recyclable, repairable, refuse, reduce and rethink) to ensure it covers all sustainability points. I can also conduct a full life cycle assessment so I can consider how the product affects the environment before and after its actual function period.

How was Dieter Rams sustainable?

From my research, I discovered that Dieter Rams became sustainable before it was popular. He quoted "We have to move away from the throwaway habit. Things can, and must, last longer. They must be designed so that they can be reused." This inspires me to incorporate the use of sustainable ideas into the lamp so that it is more environmentally friendly.



Sustainable lamps:

A common theme with the sustainable lamps is that many of them are made with wood whether that is using it to make a woven pattern as a lamp shade or using it as the actual stand for the light. They can be built for energy-efficient bulbs, be made up of eco-friendly or upcycled materials.



Client profile:



My customer client for my lamp is my younger sister Katie who is 11 years old. She enjoys art and colouring so would like an artistic and bright lamp to go in her room. Since she is still quite young, it should be lightweight and easy to use

however, the colours should not be too childish as she would like the lamp to remain in her room for a long time throughout her teenage years. Katie would like to use this lamp to place on her desk while she also does schoolwork or for reading to provide a source of light when it's dark at night as her room does not get much light. It is a key aspect of the development process of my lamp is to consider the user and who I am making it for so that the lamp will best suit their wants and needs.

Design brief:

To design and manufacture a fully functioning lamp that will incorporate features from my 3 designers/movements. This means I will have to consider colour, shaping, style and the type of light I will choose for inside. As well as this, sustainability in the lamp is an important factor within this project so this can be included either within the materials I choose or the power source. In order to make my lamp fit the needs of my target market, I will need to refer to ACCESS FM and cover these points.

Examples of sustainable lamps:



Task 3: Tasks – Product Analysis

- Produce a Product Analysis of a lamp of your choice – please look at some the examples in the next few slides. They are deemed as classic design, but it is entirely up to you which lamp you choose
- Use ACCESSFMM (sheet attached to the Google Classroom Page for Week 3
- Remember you should be building from GCSE, so it should be more detailed, and you could add a couple of extra boxes, for example, info about the designer, how you might use the example to help you to design your lamp, how sustainability features in the lamp, things that you may need to consider such as manufacturing of the lamp, processes etc.

Example Sheet:

Product analysis of lamp



What is the Bleu Carmin Design Company?

The Bleu Carmin Design Studio is a French company initially composed of the two creators of the Bleu Carmin Design brand: Frédéric Carpentier and David Hannecart. They started creating the Animo collection at the beginning of the brand, with their famous parrot and toucan table lamp. They are mainly inspired by the 50s 60s and 70s, by Charlotte Perriand, and also by Fernando Cassetta. They actually reedited his famous dog table lamp. Their particularity is in the design and colours that appeal to children and adults. The use of steel makes this lighting fun to use as a purely decorative object: their lightings are therefore very aesthetic and at the same time functional.



Manufacturing:

This product has been batch produced meaning that there are not a continuous amount of these lamps being made and part of the manufacturing process involves being done handmade rather than all by machinery. This could possibly be reflected in the price too as it has taken a lot of hours to make it. For the designer to shape and mould the metal, this may have been done using a laser cutter as it has very sharp precise edges and quite intricate detail on some of them. So that the buyer can have an input of their own of how the lamp looks, the eye stickers are not initially attached to the lamp and the customer can put them on themselves so this is a fun way to attract a younger audience. To improve the finish of the lamps, they have been painted with epoxy resin to make them more aesthetically pleasing to the customer.

Function:

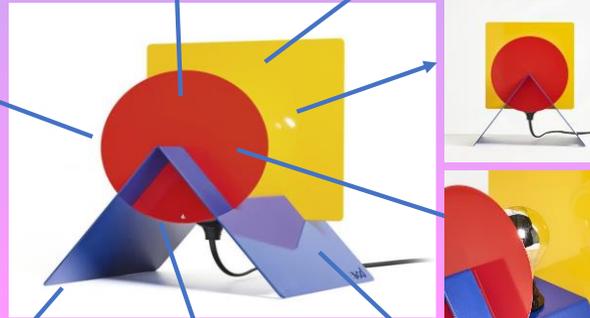
The function of the Bauhaus lamp is to not only provide light for a room but to be a retro, abstract piece of furniture in a home. It uses mains electricity rather than batteries to provide a 4W power to illuminate the bulb which means that it will always supply electricity rather than batteries which need changing after a while. If I could improve it to work better, I would perhaps put the bulb higher up or make the shapes smaller so that the lamp provides even more light or use a more transparent material so that it shines through. It is an easy product to use as all you need to do is to switch it on at the plug socket and does not require any other buttons.

Safety:

Although this lamp is very aesthetically pleasing, I do not think that the designer has fully thought of the safety hazards that could pose with this design. It has a design that would be clearly attractive for a child however the materials used are very fragile and could hurt a child if they were within reach of it with the sharp edges. The design also includes the light bulb being quite exposed between the circle and square and a small child could easily put their hand through it and burn themselves with the heat of the light bulb. The lamp also has a removable wire at the back instead of in fixed one so if it wasn't placed in the lamp properly, it would lead to electric shocks. However, the paint used is not toxic so would not be a danger to a small child/ toddler if they bit it.

Aesthetics:

This lamp design is inspired by the Bauhaus movement as shown by the colour and shape. The designer of the lamp has included lots of geometric and linear features as well as using famous Bauhaus primary colours. The contrasting colours and shape sizes used makes the lamp very eye catching as well as having a smooth and shiny epoxy paint finish on the metal to make it look sleek and modern. The designer has also decided to hide the lightbulb between the circle and square perhaps to give a more clean and neat finish.



Environment:

Through research, the lamp is made of steel covered in epoxy paint which can still mean that the steel is recyclable. It is sustainable as the paint covering the steel prevents it from rusting and acts as a barrier so that it has a longer lifespan. As the company Bleu Carmin design is French, it means that if anyone from here were to order it, it would have to travel a long way so this increases the products carbon footprint. It comes with an LED bulb which lasts much longer than normal bulbs and uses less energy so is sustainable and saves materials. LED Bulbs can also be recycled. At the beginning of this products lifecycle however, it would have been damaging to extract the metals from the ground as Metal extraction can drastically affect air quality in the surrounding areas as well as creating noise pollution.

Ergonomics:

The bleu carmin design company have designed this lamp ergonomically and for comfort in many ways. The hollow triangle design at the base of the lamp makes it easy to grip and lift up and the gap between the circle and rectangle makes it easy to replace the light bulb if needed. If it could be improved, I would make the edge of the base thicker so that it is less sharp and more comfortable to lift.



Cost:

The cost of the lamp is £162 or £159 on the Bleu Carmin design website. This does not include shipping as the lamp is manufactured in France so the company charges £5,90 for delivery. I can understand why they charge so expensive for the lamp because it is batched produced and probably uses quite a lot of energy to mould and work with the material. Through research, I also discovered that the supply of steel is quite low therefore the demand and price of steel has increased. This can be shown in the retail price.



Customer:

The use of bright colours and the design makes it a suitable lamp for mainly children but could also be for adults as well. This lamp would be favourable in a child's bedroom or to add a retro touch to your room. Despite this though, the design has quite an exposed and easily touchable light bulb and is also made of steel. These materials may not be suitable for a child's room as the lamp may be easily damaged or dented. As well as this, the lamp has quite sharp corners which could cause a small child to cut themselves on it.

Client comment:

Katie: "I like the style that the company uses as it looks very neat. You have depicted many different points to say about this lamp and annotated it in lots of detail. I would love to see my lamp use that many colours to brighten up my room."

Size:

The size of the lamp is appropriate for placing on a table or flat surface as it is relatively small but not too big that it will take up a large amount of space. The dimensions of the lamp is: Height: 27 cm, Width: 23 cm, Depth: 20 cm, Weight: 1,5 kg. The size of the lamp is probably more suited to adults as it would be quite heavy for a child to lift.

Materials:

The Majority of the lamp is made from steel which is a sturdy and strong metal alloy. To prevent rusting and to make the lamp look nicer, it has been coated in Epoxy paint, which also gives the lamp gloss finish. The bulb that is included with the product is made of glass. To make the product more environmentally friendly, the designer could have perhaps used a material like wood as it is a renewable material that has fewer damaging effects. The paint which is coated on the outside of the lamp is good as it is not toxic so wouldn't have any potential health hazards. The materials that the designer has chosen are more appropriate for adults rather than children as they are quite fragile.

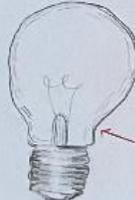
Task 4: Tasks – Design Ideas

- Produce a sheet of sketches of ideas for your lamp. 3-6 ideas. Remember quality NOT quantity
- You may want to make a list of things that you need to make sure you include in annotation around each of your designs (bit like a quick list of specification points). For example:
 - Who your design inspiration is and annotate with how the lamp links to them
 - How it fits in with your User/Target Market
 - Pencil sketches with good rendering skills seen
 - Possible materials you might use
 - Fixtures and fittings, how it will fit together
 - Possible processes you might use/how it might be made
 - How the lamp fits in with sustainability
 - What other design key factors you have considered (social, cultural, ethical, inclusivity etc.)

Example Sheet:

DESIGN IDEAS

DESIGN IDEAS



LED lighting

Design 1

coloured sections of the lamp will be inserted into a lamp and made separately.

Aesthetics: The lamp is inspired by the Bauhaus movement with the design and colours.

Manufacturing: I will use the laser cutter or 2D design in order to get the shapes cut to a high precision and use sheets of Acrylic for each side of the cube.

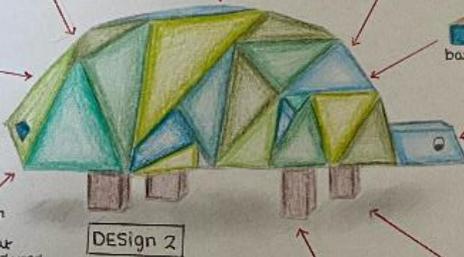
use an LED bulb as it is energy efficient and cheap. It will be positioned inside the light.

Aesthetics: lamp has the classic Bauhaus design and includes the primary colours to give it the distinctive look.

Aesthetics: The lamp is inspired by the Bauhaus movement with the design and colours.

Manufacturing: I will use the laser cutter or 2D design in order to get the shapes cut to a high precision and use sheets of Acrylic for each side of the cube.

use an LED bulb as it is energy efficient and cheap. It will be positioned inside the light.



Design 2

customer: This design is more appropriate for a younger audience as it is shaped as a tortoise and uses lots of colour. It could be used as a decoration for a room or as a reading lamp.

Designers: It includes a mix of Bauhaus and Marianne Brandt inspiration with the use of shapes and materials.

light source: for this design, I plan to have a battery light which is screwed into the bottom as wires may be dangerous for small children.

for this is made up of triangles arranged to give the lamp a geometric shape. I will either use a CAD program design or laser cutter and attach pieces together.

ergonomics: relatively small and light weight in case it is picked up by children as they may drop it.

I will be using LED bulbs in my light as they are relatively cheap and are much more energy efficient than normal bulbs.

blue/green colour theme but if mass produced then could be made in pink to make more attractive for girls.

Aesthetics: I will use wood for the legs as it will make the base secure and by adding felt on the bottom of each one, makes sure it does not scratch surface.

base

x4

felt layer added under each leg.

Aesthetics: comes with stick on eyes to make it fun for children and so that the buyer can incorporate their own fun into the design.

materials: Pine wood for the legs as it is a good material to make the lamp stand easily and is more environmentally friendly than using more plastic.

bold, colourful and aesthetically pleasing for target market.

I will have a wooden stand for the lamp which will be a curve shape.

Function: provide light for a child/teen.

function: the function of this lamp is to have a fun, appealing lamp for children/younger teens. It should provide adequate light for reading at night.

materials: I will use plastics such as Acrylic or bioplastics to make the lamp or even consider glass.

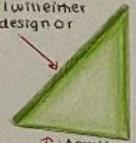
Manufacturing: I would dye the material originally and then let it sit for a few days and dry - then I would cover the inside with a polymer to make it sturdy so when I wrap it round the frame, it sets nicely too.

Materials: Metal frame to support fabric around it.

Safety: remove sharp edges to prevent small children from hurting themselves.

Safety: I have considered safety with this polycarbonate lamp as I will use non-flammable fabric as it is a relatively lightweight material so it is easy to lift.

Ergonomics: felt applied at base of stand to reduce scratching on surfaces.



Acrylic

Materials: I will use plastics such as Acrylic or bioplastics to make the lamp or even consider glass.

cost: The price of glass would be more expensive than acrylic so the price of the lamp would be more expensive.

Size: The lamp will be relatively small as it is for a desk table for a child/teen rather than for a living room.

Plan view

Steel/coated metal to make last longer.

Base

SIDE VIEW

Task 5: Tasks – Materials (OPTIONAL)

- Produce a sheet about the materials that you may consider using to make your product, do not just look at one type, for example do not just decide on pine, maybe consider cedar or a different type like plywood. Please justify your choices too—are these materials normally used for this type of product for example
- Remember materials need to be sustainable
- Do the same as above, but looking at processes that could be used to make your lamp
- It may be easier to make a table for possible materials and processes, $\frac{1}{2}$ a page for materials and $\frac{1}{2}$ page for processes

Example Sheet:

materials	properties	pros	cons
Steel: 	Because of its high tensile strength and low cost, steel is used in buildings, infrastructure, tools, ships, trains, cars, machines, electrical appliances, and weapons. Iron is the base metal of steel. It has other properties including hardness, toughness, yield strength, elongation, fatigue strength, corrosion, plasticity, malleability and creep.	The advantages of using steel for my lamp is that it would link well with my designer Marianne Brandt that I chose. It would last longer than wood.	There are extensive fireproofing costs involved as steel is not fireproof. It is also difficult to paint so it might be difficult aesthetically
Softwoods e.g pine 	softwoods are frequently used for interior mouldings, the manufacturing of windows, construction framing and generating sheet goods such as plywood and fibreboard. It also has a High Strength and Dimensional Stability. Plywood in particular has a High Impact Resistance so would be good for children.	Flexible, lighter in weight and less dense than most hardwoods. softwoods grow faster than hardwoods, which makes them cheaper.	None of my designers use wood in their designs. It can also catch fire easily so it would need to be kept away from the bulb.
Polymers such as Acrylic, polypropylene 	Polymers like Acrylic or polypropylene are appropriate to use for my product as they come in a range of colours and can be easily used with the machinery in school e.g., line bender. Acrylic is a transparent plastic material with outstanding strength, stiffness, and optical clarity. Polypropylene however Polypropylene can be used for applications where some transfer of light is important or where it is of aesthetic value.	Both polypropylene and acrylic is recyclable which will make my lamp more environmentally friendly. It is much more lightweight than the other materials so would be suitable for a younger audience.	Environmental Degradation is a problem. Plastics mainly are non-biodegradable; so, they may take centuries to decay. They are less durable than the other materials.
LED bulbs or strip lighting 	LED lighting is highly energy efficient – Less heat, more light, lower cost. It uses less electricity for the same light output - 85% less electricity when compared to conventional lighting. This means the buyer will need to replace the bulb less frequently. Led lighting can also come in strips and these can have different modes to change colour and brightness. Led bulbs can be recycled so are environmentally friendly.	They waste far less energy than other styles of lighting. ... This means that LEDs require less power than regular forms of lighting, the less energy they require, the more positive the effect on the environment.	One drawback of LEDs is the high initial cost per bulb, though over time LEDs pay for themselves through energy savings and an incredibly long lifespan.
Epoxy Resin 	One of the most common uses of epoxy resin is for adhesive purposes. It can be used on surfaces such as metal to make them more aesthetically pleasing. It has a high tensile strength and has low cost and toxicity. It can also be used as an insulator for wire so could be an alternate to polyethylene	It is eco friendly and sourced from renewable sources. It comes in a range of colours which will suit my Bauhaus movement style well.	It is biodegradable which is eco friendly however this is not sustainable and will wear away over time
PVC, polypropylene 	Polyethylene or PVC plastic can be used to insulate the wires in my lamp which provide the power to it. Polyethylene is economical and has an excellent wear resistance so will last a long time (sustainable). PVC is very durable and has a high tensile strength. It is much denser than polyethylene.	What makes both these materials good for wire insulation is that they don't conduct electricity preventing electric shocks/ fires. They are also both very cheap.	They are not the best materials to use environmentally as they are made of crude oil (fossil fuel). PVC is also not recyclable.
Fabrics e.g cotton 	to make my lamp environmentally friendly, I could consider using recycled fabrics such fabrics from PET waste, recycled cotton etc. Fabric is commonly used for lamp shades because they are lightweight, allow light through, can be coloured or include patterns on them easily.	Using recycled fabrics is environmentally friendly and I would be able to include lots of colour and pattern in my lamp which suits my Bauhaus theme.	Using fabrics may involve me using fabrics which I am more unfamiliar with than materials like wood. It is not as sustainable either.

Materials and manufacturing processes



Laser cutter:

The laser cutter is commonly used for polymers such as acrylic however can also be used for materials like wood, metal and even some textiles. This piece of machinery would be particularly good for my lamp as it can work with such a wide range of different materials and of different thicknesses as well. It is much more accurate and cleaner rather than using a saw and can also cut a wide range of complex shapes at a fast speed.



Line bender:

Line bending is a thermoforming process, i.e., it is a method of forming a thermoplastic after it has been heated until it has become soft and pliable. Line bending involves heating a thermoplastic sheet material over a strip heater until it becomes soft and pliable, then bending it, usually over a former. straight bends are produced very efficiently and have a clean finish however only simple shapes can be formed, and it can only use certain polymers. It is also quite a slow process compared to other techniques



Injection moulding:

Plastic injection moulding is the process of melting plastic pellets (thermosetting/ thermoplastic polymers) that once malleable enough, are injected into a mould cavity, which fills and solidifies to produce the final product. Injection moulding is fast and extremely effective for making different components. Polymers commonly used for injection moulding include Nylon, Acrylic, HDPE, Polypropylene (pp).



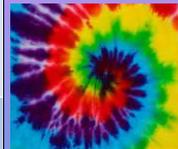
Hand tools:

In the school workshop, there are many hand tools that I can use to improve the overall quality of the finished product and remove any sharp uneven edges. The hand tools include equipment like files, emery paper, saws that are all quite abrasive and either cut or file the material. They will be appropriate for a range of materials such wood, metal which can either splinter or may have rough edges from previous machinery.



Pewter caster:

Pewter casting: The raw materials (tin, copper and antimony) are cut up and heated to 350° in a kiln, and very quickly a beautiful molten liquid is formed, which, using a casting ladle, is poured into mould with extreme care. Before this process, I will need to create my own mould which I will specially design in the shape that I need for my lamp. The only downside to this is that it can be difficult and time consuming to make a mould for intricate 2D or 3D shapes which could restrict me slightly in detail.



Tie dye:

If I decide to use fabric, tie dye would be a great creative way to add pattern and colour into my lamp and can be easily used with fabrics such as cotton. As well as this, tie dye was a popular design in the 60s which would fit well with the design and era of my designers. It is an easy process especially to do at school.

What materials my designers used?

Looking at the materials and themes that my designers used, or movements consisted of Dieter Rams tends to use lots of plastic as this was popular in the 60s. on the other hand Bauhaus products like Marianne Brandt's ash tray is made of silver and brass. In my design, I will try to use a wide range of these materials as well as considering how to make the design as sustainable and environmentally friendly as possible.

Task 6: Tasks – Development

- This may end up taking you two weeks, hence why I have allowed a week at the end to ‘catch up’
- As you know development is all about taking either ONE idea, and moving and developing it, or taking key features from a few different ideas and developing these into ONE idea
- Remember, you need to start looking at things in detail:
 - how it fits together
 - the exact dimensions
 - some deeper knowledge of how the materials you choose can be ‘worked’ and manipulated
 - Changes to shape for better design
 - What changes would your client/user make
 - Are you going to add a finish to it
 - What the light source will be, where will you get it from (last year we had fairy lights, press button lights, bulb and lead-so you may need to do some research about light sources)
 - Being to think about the manufacturing stages (step by step plan of making)
 - How you will make it a quality product, ensure QC and QA, and also tolerances

**OTHER SUPPORT
SHEETS
TO HELP**

Task 1; Designer Inspiration - Exemplar

Designers & Movements

Lamp Project 2020- Anthe Beston



Margaret Calvert: Margaret Calvert was famous for her designs of road signs. I think the shapes of the road signs (circles, triangles, rectangles) don't provide much of an exciting shape for a lamp. However, I think the symbols within the signs would provide a unique and promising shape for a table lamp. Alternatively, combinations of different road sign shapes and symbols could provide a cool shape for a table lamp.



Arts & Crafts Movement: The Art & Crafts Movement aimed the reform Design/Decoration in the Mid-19th Century with notable people such as William Morris and Harry Clarke partaking in the movement. The designs are heavily based of nature with a lot of symmetrical or repeated patterns. I think this movement could influence my lamp shape as I like the idea of vines or flowers or nature twisting as a shape. I also like the idea of a vintage book shape/ design which is influenced by the print aspect of this movement.



Phillipe Starck: Phillipe Starck is famous designer, known for creating products that are unusual as he aims to create experiences and emotions. I love the variety of shapes his products offer which provide a range of influences for my lamp. I think the lemon-squeezer looks very sci-fi and like a tripod which would give the lamp a very futuristic look. The gun lamps show that the shape could be inspired from objects that connote emotion such as a gun or hands.

Task 1; Designer Inspiration - Exemplar

Inspirations sheet

Philippe starck



Thick to narrow stem for good stability

Gun resembles war and the lamp shade resembles the lives lost

Rotating horn to direct light for desks or bed reading



Lamp shade goes nicely with the gun stem

On and off switch contained in the head of the lamp

With the shade and the metal stem it combines the old and the modern



Movable stem to be able direct light

Post-modernism: Memphis

Three angled iron bars fixed to iron plate base. Powder coated grey metal finish.



lamp constructed of a series of three S curve iron bars and an iron plate base



This green lamp shade is used to match with the green stained wood. Sculptural wooden base has a cruse finish and is stained forest green. Lamp has a whimsical wobble form.



Has a double socket illumination. This is what it looks like with the shade removed

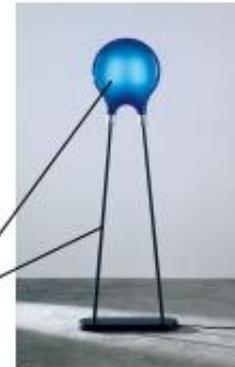
Marc Newson

Simple push of a button which means no having to bend down to press the switch



Sculptural lamp that was made from thermofomed Corian.

Moulded glass bulb with steel and carbon



Hive modern



The shade is made up of 32 slice-like pieces which fit together to allow chinks of light to escape

Light and dark generates an effect which is rich in shades of light and prevents glare, while an opening at the bottom fitted with a diffuser gives out direct light downwards

Swivel loops of powder-coated steel hold a cloth-covered shade



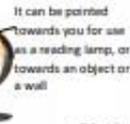
Cloth-covered cord with inline switch



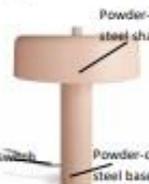
Table lamp features a base and stem in lacquered iron



built in dimmer switch

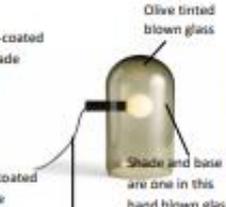


It can be pointed towards you for use as a reading lamp, or towards an object or a wall



Powder-coated steel shade

Powder-coated steel base



Cloth-covered cord lamp with inline switch

Shade creates modern look since light shines through



hand-blown glass rests on a die cast zinc alloy tripod colored with epoxy powder paint with a rough finish on the metal surface.

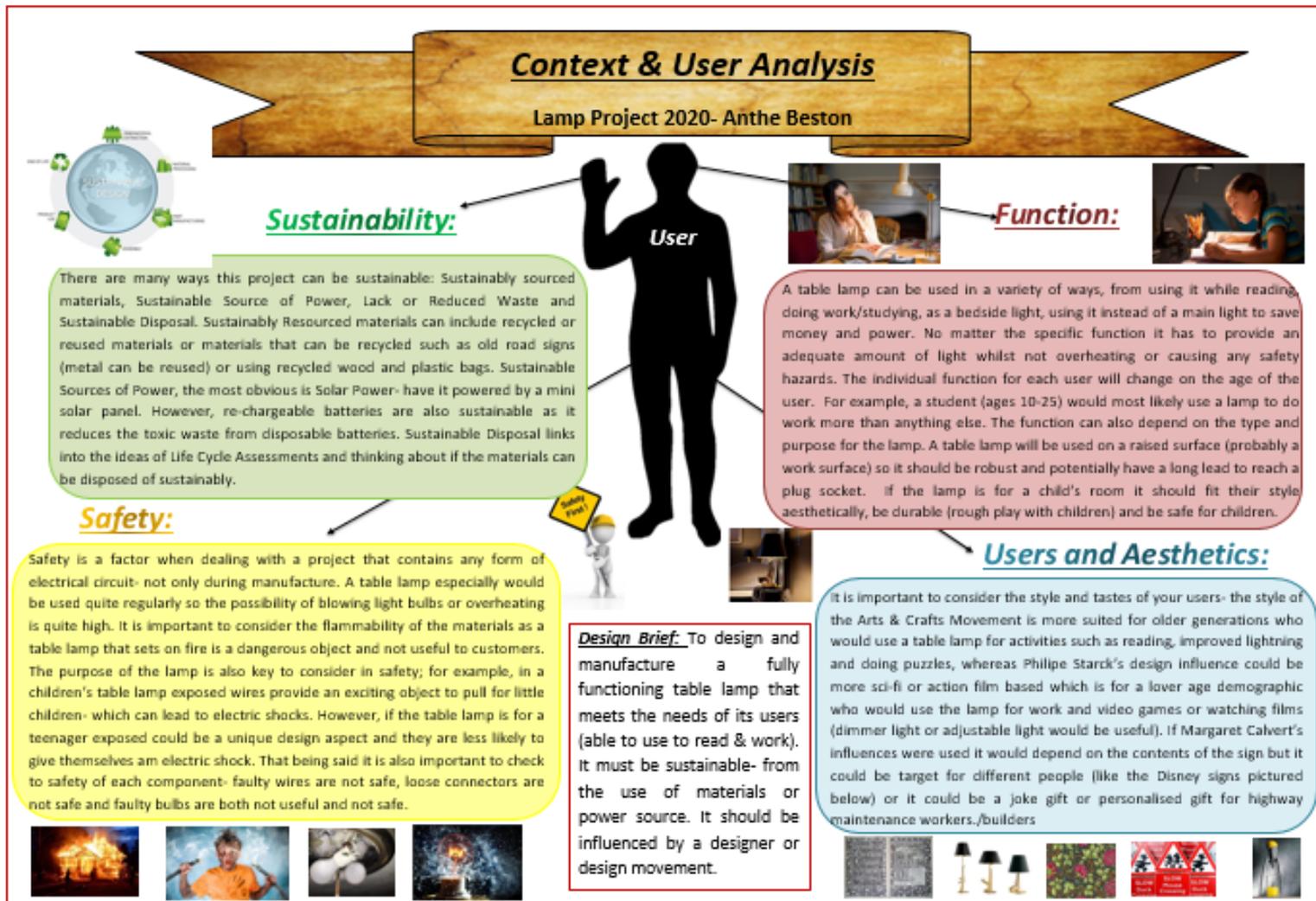
Why I chose these designers

I chose these designers / movements because their lamps are really modern and all have unique patterns and styles. These designers create things no one would really think to make into a lamp. I tried to choose designers with more obscure shapes like the gun or the horn because it really shows the creativity of making these things work together.

Inspiration

After looking at all of these products I've noticed they seem to stick to solid colours which I really like because it keeps it quite simple. I also like the idea of my lamp to have a movable arm, however I do like the picture where the light is sticking into the side of the lamp as its quite creative and leaves multiple idea possibilities. I would want it to be something that sticks out in a house, I would want it to be used for work, reading and writing

Task 2; Context Analysis - Exemplar



Task 3; Product Analysis - Exemplar

Product Analysis

Lamp Project 2020- Anthe Beston



The Product: Seletti - Waiting Bird Table Lamp

The Designer- Seletti: Seletti is an Italian design firm known as a revolution for the original and extravagant design. It was founded in 1964 and focused on exploring and experimenting with beauty but as time has progressed the company began to focus on "creative characteristic Italian excellence" and have now adopted the slogan "(R)evolution is the only solution". They strive for originality.

SELETTI

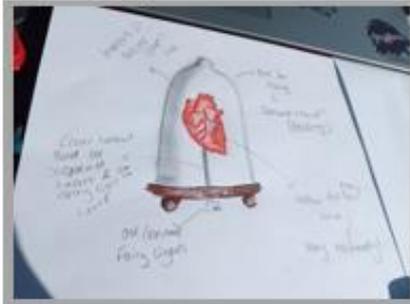
Influences I can use from this lamp: The design company have a long list of designers under their employment so this shows I could use a variety of designers and movements as inspiration - (using more than one at a time). I like the idea of exploring and experimenting with beauty; it shows my lamp could be very whacky and non-conforming to regular lamp themes. This idea is also influenced by the slogan "(R)evolution is the only solution".

Aesthetics	The product is quite gothic in nature due to the choice of bird (crow). The exposed wire of the lamp and faint yellow glow to the bulb also give the product a steampunk feel. The choice of either the lamp in black or white provides a little variety but the two colours are quite modern but also monochromatic and this provides a lot of versatility for the aesthetics of the lamp- it can be found in a variety of rooms with a range of styles. The matt finish helps accentuate the gothic undertones to the lamp as if it weren't matt and was shiny it would take away from the overall design.
Cost	From top retailers John Lewis and Amazon, the lamp sells for £115.00 with a bulb included. At other companies that are less well-known the product sells for around £130.00, but they can also be bought for around £95.00 at places such as Wish (second-hand). The high price for the lamp is mostly due to the designer- Seletti Louie- an esteemed designer with many successful designs. Another reason for the cost is the material - Epoxy Resin. Due to the process used to make Epoxy Resin (a catalytic reaction to make the resin completely inert and therefore harmless to the environment) the material is quite expensive to use. However, the use of this material also means that the cost to the environment is low.
Customer	As with the aesthetics the customers have varied styles and range of needs for the lamp. The lamp itself is very well-liked by the customers, with many praising it for its quirky and gothic nature. It is well-made and the wirelength through the beak of the bird is adjustable which is useful for customers. The product is easy to assemble and passes all safety checks. However, the particular bulb that the lamp uses is said to only be available from Seletti- which is very inconvenient for customers and will probably cost them a fair amount. The product itself is designed for people with a quirky or gothic style but can be used for more styles, it fits in well with these themes and looks to provide plenty of light for working, studying, reading etc...
Environment/ Sustainability	The Green Epoxy Resin used to manufacture the product is specially designed to be environmentally friendly. It is sourced from renewable resources and emits significantly less Carbon Dioxide during production than most materials- so there is a reduced Carbon Footprint. Epoxy Resin is also completely polymerised so that it cannot affect the environment. Epoxy Resin is also completely biodegradable, non-toxic, and non-hazardous to the environment.
Ergonomics	The product is reportedly easy to assemble and the warm yellow glow from the specific bulb is comfortable. It is light and an appropriate size for a table lamp. The product showcases the designer's signature style, but it also looks to be designed specifically for the quirkiest and more gothic customer. It isn't the only lamp of this style and there are different variations of the product in different positions- so customers can find a lamp that fits comfortably in with their theme and space available.
Safety	The lamp has an exposed wire, but the wires are still secured. The product has passed all safety checks and is a Class 2 Appliance. A Class 2 appliance has at least 2 layers of insulation to protect from electrical shocks, but it also means there is no earth connection. The wire is 2.5m in length- so could provide a tripping hazard but that is caused by placement of the lamp and not the product itself. There are no reports of faulty wires, bulbs, or fires with this lamp.
Size	The product is 18.5 cm x 10 cm x 29.5 cm (Height x Width x Depth), with a weight of 0.7 kg. This size makes the product more realistic and isn't too small as to not notice but also not big enough to be ridiculous.
Function	This lamp is specifically an Indoors Table Lamp (there are versions that are outdoors table lamps). The warm ambient glow means that the lamp isn't the main source of light and isn't significant enough to add or lose too much light when turned on/ off accordingly. However, it still provides enough light to fulfil its function of a table lamp, where a person can work, read, etc...
Materials and Manufacturing	The lamp structure is made entirely of epoxy resin. Epoxy resin is environmentally friendly, biodegradable, and non-toxic. It is also quite expensive due to the process to completely polymerise the substance so it is inert and can cause no harm or damage to the environment. To manufacture the product a mould is first needed and then the specific epoxy resin mix is needed. Resin is a mix between resin and hardener at a specific ration (normally measured in weight or volume as well). The mould is made, and the resin is poured in and left to harden. On a mass production line there would be multiple moulds and vats of resin being mixed.

Task 4; Design Ideas - Exemplar

Design Ideas

Lamp Project 2020- Anthe Beston



Design 1: Heart Lamp

This lamp design was inspired by Philippe Starck's Floo (gun lamps); more specifically it is inspired by the idea that Starck like to create objects that inspire emotion and I also thought that this lamp showed the exploring beauty aspect from Seletti. The outer casing for the lights is a bell jar- preferably a recycled or reused to keep with the sustainability factor of this project. The heart in the centre is hollow and is effectively a casing for the lights. It could be made of epoxy resin with red pigment as epoxy resin is non-toxic and eco-friendly and the red pigment would make the object appear more realistic. A clear hollow rod will suspend the heart in the centre of the jar. A whole would be cut in the bottom of the bell jar platform to feed the reused fairy lights through until they are packed into the heart, the switch and batteries would remain on the outside of the light. Concealing the cable inside of the lamp provides more safety than having loose wires to trip people, snag, fray, and shock people. The fixture of the heart would depend on whether or not the heart should be removable and what material the rod suspending it would be.

SELETTI

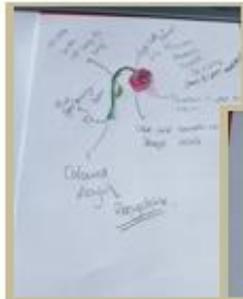
Seletti Company Ethos- Inspiration for Heart Lamp

Design 2: Pop Culture Road Sign Lamp

This design incorporates either a reused road sign or reclaimed wood base. This is because road signs are quite large which wouldn't be useful or very functional as a table lamp for a table lamp but both options are more sustainable sources than fresh materials. To improve the sustainability of the lamp a solar panel would charge the lights. The light aspect comes from an LED Light Strip along the border of the sign or an embedded neon light within the border of the sign. The colour of the border depends on the contents of the sign and the overall theme of the sign. On the left hand of the sketches page are examples of different symbols from popular Films, Books, TV Shows, Video Games, and other pop culture influences. The colour of the symbols would mainly be black to try and keep with the original road sign designs by Margaret Calvert. This design was inspired by the Disney Road signs from researching different designers and design movements. To turn the on the lamp I would use a rocker switch as they are easy to grab and turn on and off so even people with limited mobility can use it.



Disney and Margaret Calvert Inspired Road Signs- Inspiration for Pop Culture Road Sign Lamp.



Shepherd's Hook Garden Lamp

Design 3: William Morris Flower Lamp

This design was based off of one of William Morris' representative nature fabric prints but the shape also comes from Shepherd's Hook Garden Lanterns- I chose this shape because I wanted to include more nature into the lamp to further draw from the inspiration behind the William Morris; Work and the Arts and Crafts Movement. The colour and style of the map should be as close to the original source photo and inspiration for the design. The lamp would be made of Coloured Acrylic (Plastic). I would use this material even though the production of it can cause toxic fumes because it can be recycled infinitely and therefore is also useful post-lamp-life. To create the unique shape, I believe I would have to use a combination of line bending and heat shaping/moulding to achieve it. The stem would be hollow to pass the cable leading to the bulb and plug through it. Concealing the cable inside of the lamp provides more safety than having loose wires to trip people, snag, fray, and shock people. The light bulb would begin as the bud of the flower and be surrounded by the petals of the flower- this should give a pink tinge to the light which adds to the atmosphere and aesthetics of the lamp. If I could include a switch I would try and incorporate into the leaf or use the leaf as a switch, preferably a rocker switch as they are easy to handle for those with limited mobility.



Floos- Inspiration for Heart Lamp



William Morris Fabric Print- Inspiration for William Morris Flower Lamp.

Task 5; Materials & Processes - Exemplar

Materials & Processes

Lamp Project 2020- Anthe Beston

Materials and Components:



LEDs and Lamps- Light Emitting Diodes are rapidly replacing lamps (light bulbs) due to their versatile and colourful nature. LEDs are often found in strings or strips of lights- for example Fairy Lights. These could be used in the Road Sign Design or the Heart Lamp Design. Lamps have - These have a variety of different shapes, sizes, and wattage. They tend to be more fragile than LEDs but produce better light. This would be used in the William Morris Flower Lamp Design.



Acrylic/HIPS- Both Acrylic and HIPS are a form of polymer but use different processes to shape them. Acrylic is often thicker than HIPS and uses Line Bending, whereas HIPS is thinner and uses Vacuum Forming. Both are lightweight and colourful and can be recycled. This would be used for the William Morris Lamp Design- the acrylic for the Stem and the HIPS for the petals



Rocker Switch- This switch is easy to use and can come in a range of colours and sizes. It would be used because it can even be used by people with limited mobility. This would be used on each lamp design. I would use a switch over a pressure or motion sensor because it is less temperamental.



Recycled/ Reclaimed/ Reused- This would be fulfilling the sustainability aspect of the project; by using materials that have been used or recycled. This would be useful if using a recycled road sign for the lamp or reclaimed bell jar and lights for the heart lamp design.



Soft Wood / Plywood /MDF- In the case that a recycled road sign cannot be used the above woods would be light in colour and easy to paint on and shape. As well as being able to reclaim. Used instead of a recycled road sign.



Epoxy Resin- Epoxy Resin is very eco-friendly- it is sourced from renewable resources and emits significantly less Carbon Dioxide during production than most materials- so there is a reduced Carbon Footprint. It is also completely polymerised so that it cannot affect the environment and is completely biodegradable, non-toxic, and non-hazardous to the environment. This would be used to make the heart for the heart lamp.



Solar Panels- This would be used to power the LED strips inside the Road Sign Design, with the solar panel on the back of the lamp to charge the light. This would improve the sustainability of the project as it is a more sustainable source of energy than toxic batteries of using electricity from non-renewable sources. This would be the power source for the road sign design.



Processes:



Line Bending- This process is used to shape and form acrylic and other polymer sheets. It uses a hot wire to heat the polymer to around 160°C, once heated the polymer becomes pliable enough to be bent into shape. This process would be used to make the stem for the William Morris Lamp or the rod for the heart lamp.



Laser Cutting- This process is typically used with polymers but can also be used with timber-based materials. This method is very effective at etching images into wood and cutting. It uses a CAD system or imported image. This would be used to cut the wooden road sign and etch designs into it.



Vacuum Forming- This process is used to make complex 3D Shapes from HIPS with the help of a mould. The machine heats the plastic until it is pliable then a vacuum causes the plastic to lay over the mould, where it is left to cool. This could make the petals for the William Morris Lamp.



Drilling (With Jigs)- Using pillar drills (and jigs for accuracy) this process helps make grooves and holes in objects; to pass leads and cables or fastenings through. Useful for the heart lamp design.



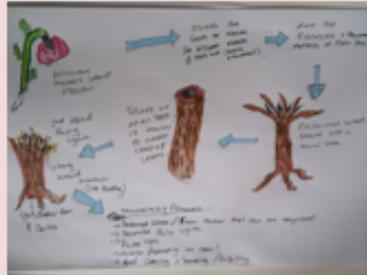
Spray Paint & Stencil- This is an alternative to etching patterns onto the road sign-providing more colour options. However, the paint could be toxic and therefore not sustainable. Used with the Road Sign Lamp Design.



Task 6; Design Development - Exemplar

Development

Lamp Project 2020- Ant & Weston



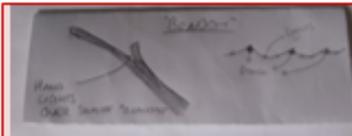
Development Sheet of Sketches (Step-By-Step).

Using ideas from the previous design ideas I brought aspects from each design and brought them together to create one design. I began with the William Morris Fabric Design Lamp and chose to use the inspiration for William Morris and the Arts and Crafts Movement to theme the lamp from. Nature also tied in nicely with the sustainability factors of the lamp. I used the idea of softwood/ recycled wood (non-finite resource so renewable) from the Road Sign Design. The use of the reused fairy lights came from the Heart and Bell Jar Lamp. The final developed idea consists of a mini tree-like lamp with reused fairy lights threaded through the branches like bunting or the missing leaves. Some inspiration for the lamp came from a tea light holder (as seen on the right). The trunk is hollow to allow the cable from the lights to be lead through and the roots at the bottom will provide a stable standing for the lamp and would conceal the battery pack and on and off switch for the lamp.

Sustainability: This is a huge factor for the project and will be seen in the use of the recycled and reused materials and the fact that the materials can still be reused after its life as a lamp.

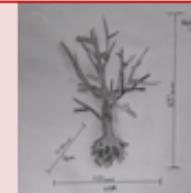


Tree Tea Light Holder Inspiration



The tree will have 'y' shaped carved branches with smaller notches leading off of it. These will hold and secure the lights as they hang around the branches like bunting.

Materials & Processes: Reclaimed wood is eco-friendly and helpful to local people who seek to get rid of the timber, however it would be more useful to use a stump of wood to carve and shape the lamp. This wood doesn't need to be fresh; it can be taken from local burn piles which reduces the carbon footprint further. Old fairy lights are not hard to find and are more sustainable than using new lights. To create the shape of the lamp I would use a combination of hand saws/ a surform, chisels and sanding to create the exterior shape of the lamp and a pillar drill to create the hollow interior of the trunk. Softwood is typically used for indoors products as it is less dense than hardwoods, so they are easy to work and are lightweight. After shaping the lamp, a varnish finish would be applied. This creates a sleeker looking product and also ensure that excess sawdust cannot fall off the product which could trigger some customer's allergies.



Dimensions (H x W x D)
500mm x 400mm x 400mm.

Step 1: Draw a rough hourglass shape on the wood and using saws cut the larger chunks of wood away before sanding and chiselling the edges until it is smooth and looks like an hourglass.



Step 2: Using a centre punch and jig create an indent in the centre on the top and bottom of the wood. Using a pillar drill, drill a hollow centre for the trunk with a diameter of around 50mm.



Step 3: Shape the trunk first with a diameter of around 70mm. Move onto the shaping of the roots next and then the branches. Use reference photos to help get the correct shape.



Step 4: Applying the varnish. Apply the varnish using a paint brush and with clean and precise strokes. There should be an even layer of varnish covering the surface of the lamp.



Step 5: Thread the lights through the trunk of the tree and weave and hang them around the branches of the mini tree. Carefully conceal the battery pack in the roots of the tree.



Quality Control & Quality Assurance:

At each stage of the shaping of the lamp the design will be drawn first on to the wood. A centre punch and jig will help the hollow interior be in the centre of the lamp. Measurements will be made twice before moving onto the next stage. Reference images will be used to ensure the shape is realistic.

CONCEPT 6 - CABBAGE TREE

This concept is based on the long, thin leaves of a cabbage tree, that turn out long, round. Cabbage trees are a huge, round tree and are found throughout the world.

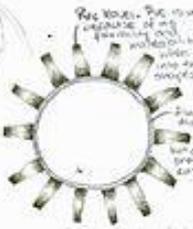


Cabbage tree trunk and canopy

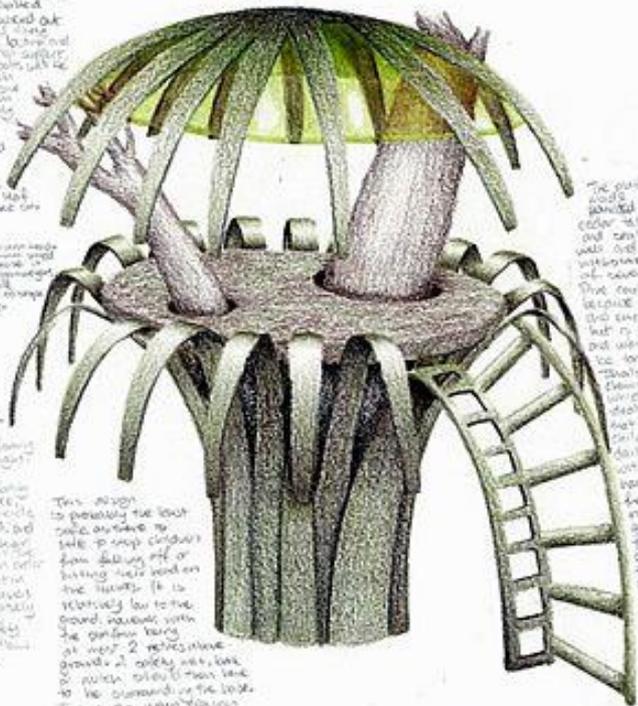
Concept model



The platform is made up of several horizontal ribs joined to the top. Spikes are made from the ribs and they would be made from a heavy material like metal. The ribs would be made from a heavy material like metal.



The ribs are the main support of the canopy. They are made from a heavy material like metal. The ribs would be made from a heavy material like metal.



The platform could be made from a heavy material like metal. The ribs would be made from a heavy material like metal. The ribs would be made from a heavy material like metal. The ribs would be made from a heavy material like metal.

It will be made up of ribs that are joined to the top. The ribs would be made from a heavy material like metal. The ribs would be made from a heavy material like metal.



One leaf piece of the tree is made from a heavy material like metal. The ribs would be made from a heavy material like metal. The ribs would be made from a heavy material like metal.

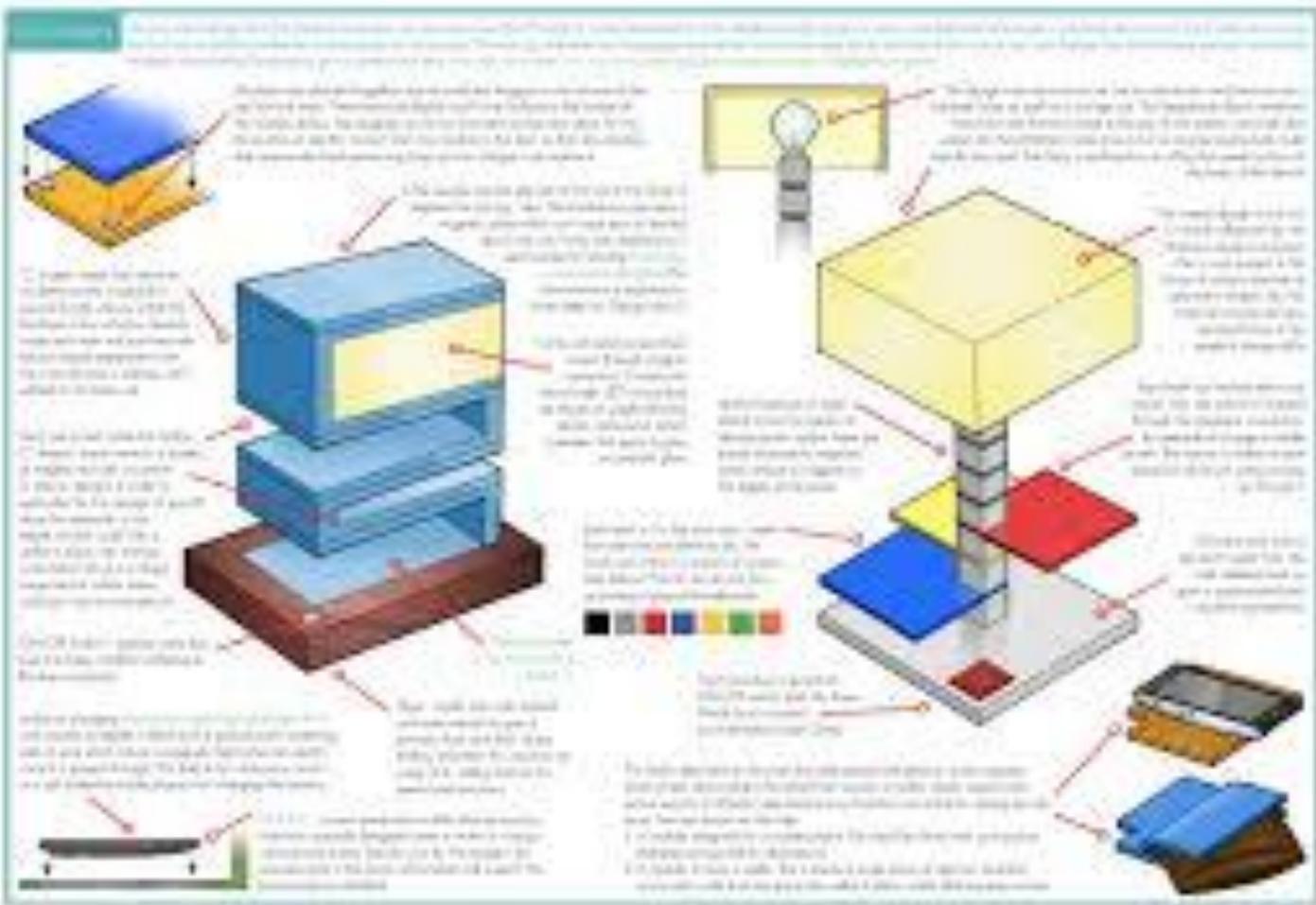


These ribs are made from a heavy material like metal. The ribs would be made from a heavy material like metal. The ribs would be made from a heavy material like metal.

The ribs are the main support of the canopy. They are made from a heavy material like metal. The ribs would be made from a heavy material like metal.

The ribs are the main support of the canopy. They are made from a heavy material like metal. The ribs would be made from a heavy material like metal. The ribs would be made from a heavy material like metal.

This design is probably the best one. It is made from a heavy material like metal. The ribs would be made from a heavy material like metal. The ribs would be made from a heavy material like metal.





Textbook – please purchase

