USB LED LAMP
Development Folio

Name: _____
Class: _____
Teacher: _____

DESIGN BRIEF

The design brief should be a general description that allows you flexibility regarding the type, shape, size and style of the product you intend to make. Try not to be too specific at this stage.

It may be wise to avoid stating the exact materials it will be manufactured from as you may want a choice in how you manufacture your final design. Instead describe the materials to be used using their properties such as strong, tough, flexible, natural, shiny, brittle, transparent, colourful, man-made, recycled, water-proof or similar general descriptions.

Mention points such as: safety, general size, what it will do (how it functions), general properties of the materials needed, who it is for (e.g. client, user group) and any other points you feel are important.

DESIGN BRIEF

Using the information provided above, and guidance from your teacher, you should now be able to write a design brief for your chosen client or user group.

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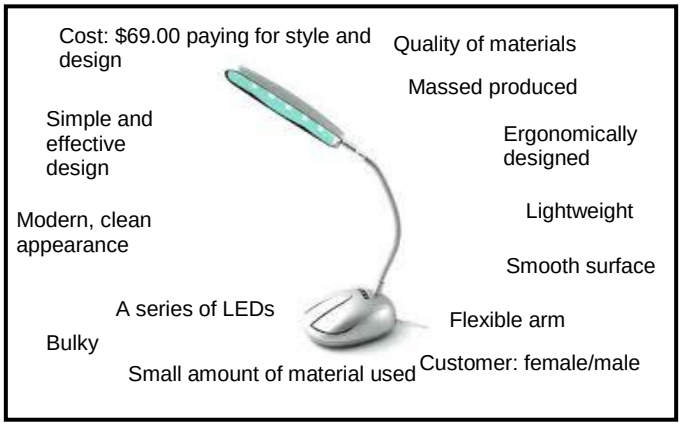
PRODUCT ANALYSIS

Designers will always analyse existing products that solve a similar solution to the problem that has been identified by the design brief. In this case you should be analysing existing designs of USB LED Lamps to learn from. The benefits of this are to understand why the product has been designed in this way and also to recognise the advantages and disadvantages of what has been done before.
In order to analyse effectively you should cover a comprehensive number of areas in your annotation. To make this easier you could use the acronym strategy: ACCESS FM.

A – Aesthetics (appearance, style etc.)
C – Cost (to manufacture / to buy, is it expensive or cheap? why?)
C – Customer (user group / buyer)
E – Environment (where the product 'lives' i.e. business, travel, home, school etc)
S – Size (overall, component sizes)
S – Safety (to the user, to the environment, to the manufacturer)

F – Function (what does it do? how does it work i.e. are there any moving parts?)
M – Materials (what is made from and how do you think it is made?)



PRODUCT ANALYSIS

Homework Task 1

In the space below, or on an additional piece of paper, you need to analyse at least four existing USB LED Lamps using the ACCESS FM strategy. These could be in the form of photographs that you have taken yourself, Internet images, magazine pictures or even detailed sketches.

DESIGN RESTRICTIONS

Restrictions are set so that solving the design problem is made easier for you. You must therefore consider the following restrictions when generating and developing your design ideas:

When designing the USB LED Lamp casing, you will need them to consider all of the following:

- The size of the PCB.
- Where the LED is mounted.
- Where the on/off switch is mounted.
- The diameter of the LED and total height of the unit. The LED is 5mm in diameter and the overall height is approximately 11mm.

DESIGN SPECIFICATION

The design specification is very important in a design process as it contains information necessary to produce a solution to the design problem. A design specification splits the problem into sections or categories to make it easier to understand and use to test against. By asking the right questions during this design process, and answering them with research and testing, you can improve performance, reliability and desirability. How strong should the materials of your USB LED Lamp be? What material thickness should you choose? Should you use Acrylic or another material? Complete the remaining points of the design specification provided for you. This will also help you when you come to evaluate your work. Try to use wording such as 'My USB LED Lamp should, My USB LED Lamp could…'

- I should produce a concept model before manufacture to test my idea.
- My USB LED Lamp should consider anthropometrics and ergonomics in the development of my design work and concept model.
- My USB LED Lamp should consider a range of materials and their properties.
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DESIGN IDEAS

When designing the USB LED Lamp casing, you will need them to consider all of the following:

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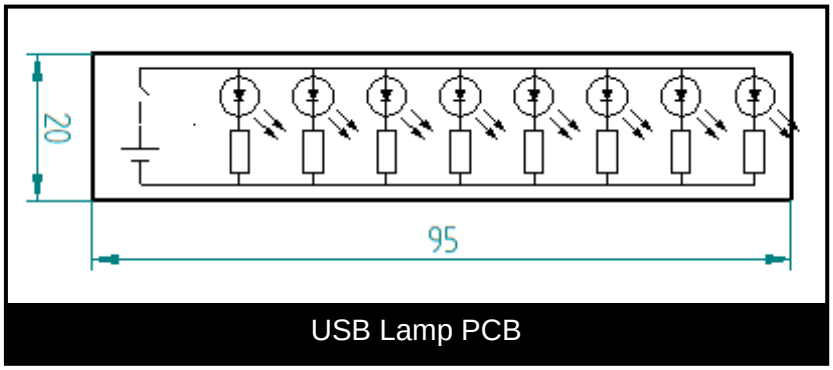

USB Lamp PCB

Use the space below to generate and communicate your own design ideas. If you are stuck for design ideas then start by using geometric shapes and then adding to them. Good communication is describing and explaining your ideas through sketching and annotation.

DESIGN IDEAS - PROTOTYPE

Use the space below to generate and communicate your prototype. Ensure that annotations are used extensively to describe and explain your prototype.

FINAL DESIGN IDEA

On this page you will present and communicate your final design proposal. Remember all of the presentation techniques you have learnt and use close up views for any small details. Ensure that you annotate all important features.

STEPS OF CONSTRUCTION

Write down the correct name of all the processes that were used in the construction of your USB LED Lamp. Make sure that you identify all the tools that were used in each of the processes. These could be in the form of photographs that you have taken yourself, Internet images, magazine pictures or even detailed sketches.

CONSTRUCTION STEPS TIME PLAN

Using the construction steps identified on the previous page, fill in the table below with this data and colour the amount of weeks it has taken you to complete each of these processes.

Practical Project Gantt Chart – Time Management												
				8 Week Plan								
Item No	Construction Steps	Start Date	End Date	1	2	3	4	5	6	7	8	
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8												
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12												
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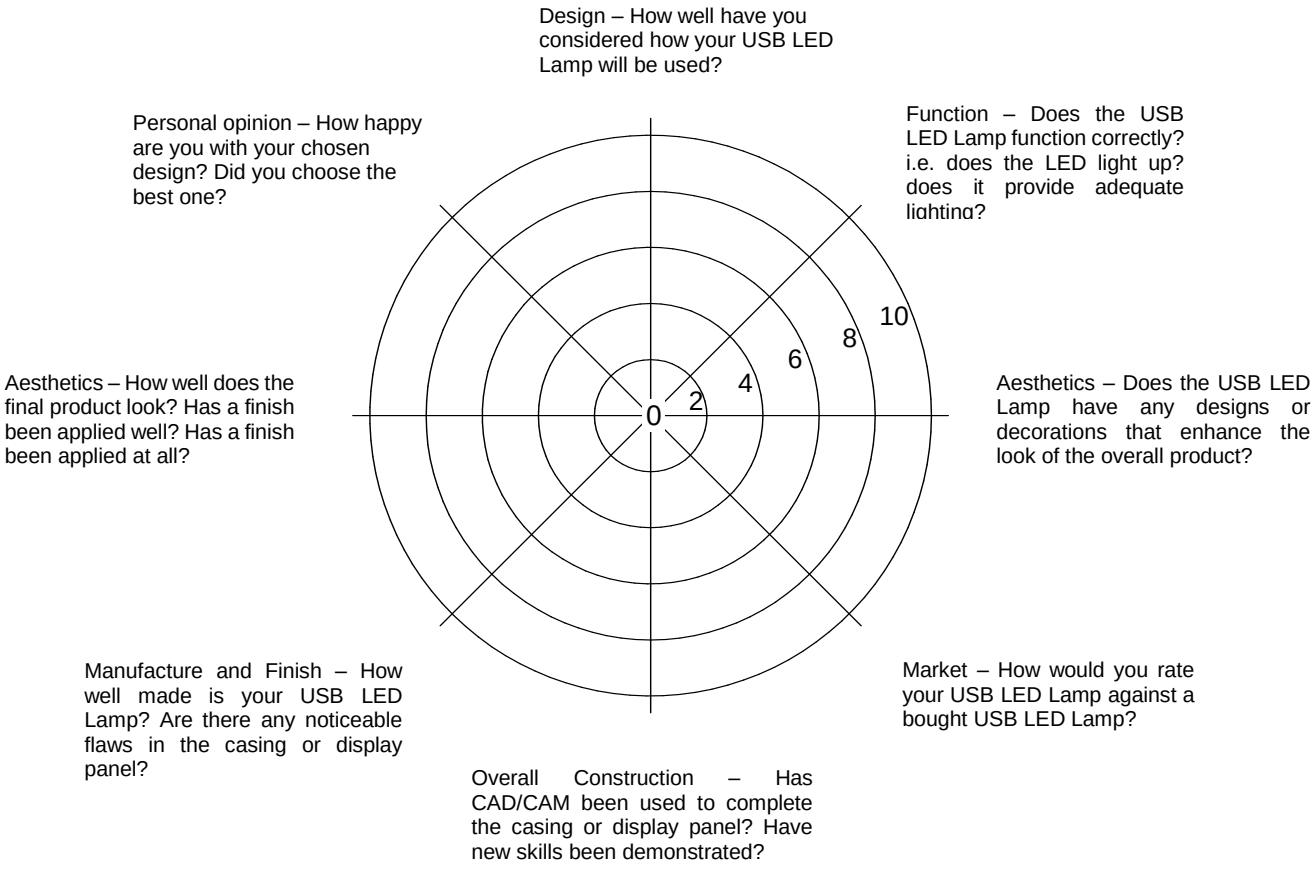
14												
TOTAL PROJECT DURATION				x	x	x	x	x	x	x	x	

Now that you have completed your USB LED Lamp you need to evaluate it. To do this you will need to consider a number of points.

- Does it fulfil the design brief?
- Does it fulfil the design specification?
- How close is it to your final design?
- Did you select the best idea?

Use the chart below to evaluate your final USB LED Lamp. You should also ask someone else to evaluate it for you (use a different colour). Be honest with your marks. Tally up your score to help you start your written evaluation.



Your Score: …../80 Other Persons Score: …../80 Average Score (Add the 2 scores and divide by 2): …../80

In your written evaluation you should include opinions of both yourself and other members of your class. You could use the **PMI**, **WWW** and **EBI** methods (**P**lus, **M**inus, **I**nteresting; **W**hat **W**ent **W**ell and **E**ven **B**etter **I**f) to help you. It is important that you fully explain your opinions.

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