

Submission Date _____

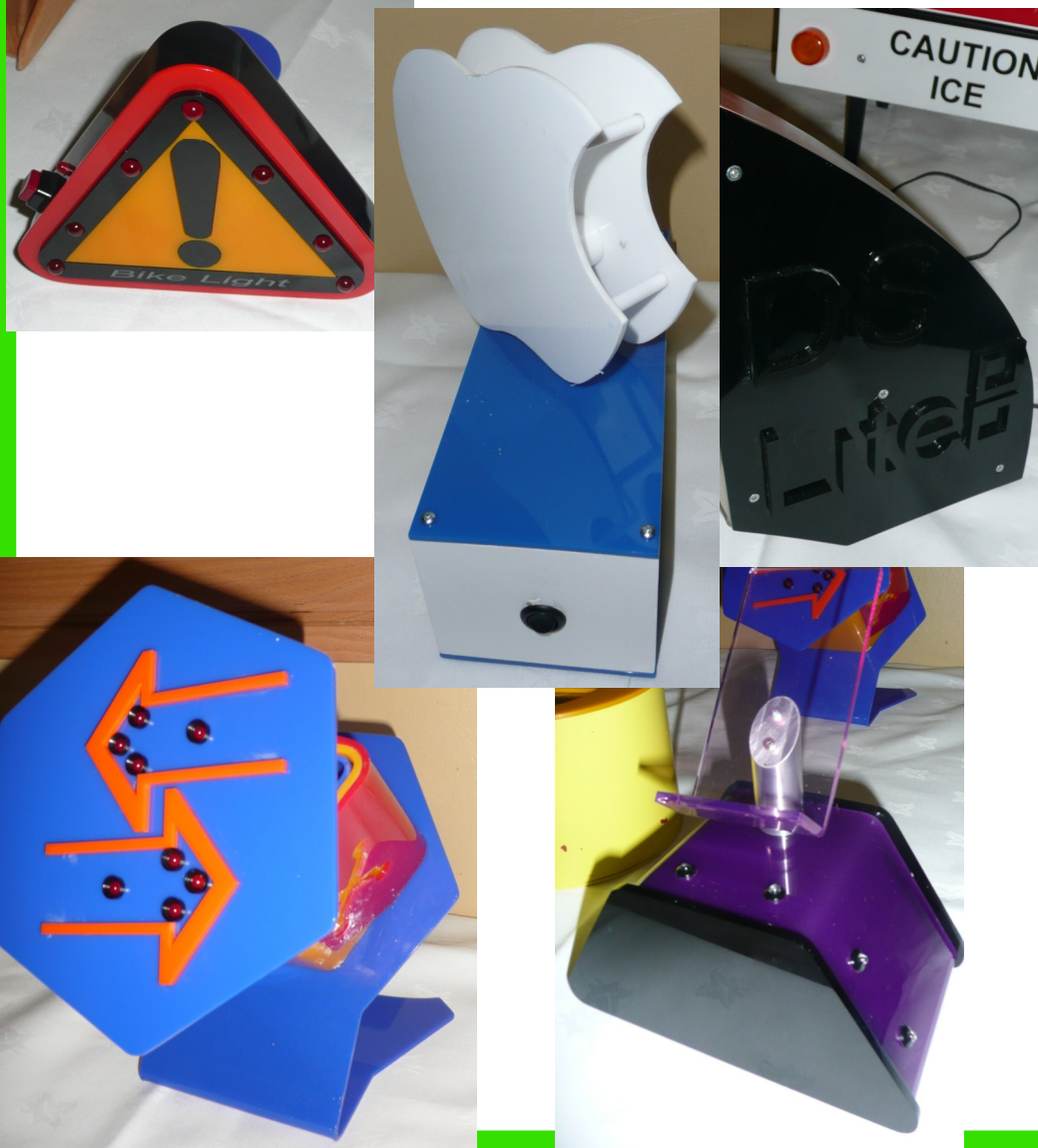
Modifications

Make high level proposals for further development as an outcome of testing

Modifications made should be shown on photographs

Detailed future modifications to improve on final product (3-4)

Future modifications should be sketched and annotated (Possible use of CAD)



Name: _____

Candidate No. _____



tech nology and design

**CCEA GCE Specification in
Technology and Design:
GCSE Coursework Student Guide**

Unit 5

Submission Date _____

1 Page - Testing, Evaluation and Modifications

Carry out and present an extensive range detailed testing, showing meaningful conclusions

Must show evidence of the finished product being tested

Show the product in its intended environment

Well annotated photographs of the product in use

Honest comments regarding the testing to accompany the photographs

Project Selection

The product chosen must fit into one of the themes outlines by your teacher

The chosen product should allow scope for development but must also allow for a high level outcome to be achieved

Avoid complex objects and moving parts

What your folder should be:-

Folder must be no more than 10 pages

Font size must be no larger than 10 for normal text

All pages must be filled with information and sketches

Evaluation and Modifications

Philip Black Quad Indicators

On the back of the main indicator I have changed the holes for the speakers. I changed them because they were a bit flimsy and thin in my actual product. Also I changed them because they might let in water more easily than a few small holes. I have also changed the brackets on the back of the controller. I changed the shape of them slightly to make them more pleasing to the eye. My last bracket was just a block this one has a few curves which helps the overall look. Apart from these changes I have kept the main indicator box the same because I liked it and the design.

For the controller I have also changed a few things. I have changed the colour in the controller as well so it would suit the colour of the quad and the green is a more agriculture colour to which I think most quads are used for. I have changed the shape of the brackets to a more curvy shape. I changed them because the old ones were too boxy and was not appealing to the eye. I added curves to the sides that were straight in the old brackets. After doing this I think the brackets look more appealing to the eye. Apart from these changes I have mainly kept the design of the quad indicator controller the same because I like the simple design and size of it.

Specification

- The device is going to be an indicator which will have several flashing LEDs which will show which direction you are going to turn.
- It will also have a ticking noise while the lights are flashing this will alert the driver that the lights are still running and not to waste energy.
- It is going to be a heavy cable design which will look appealing to the eye and this will draw to potential customers.
- The device must be able to be used at all times and be ready to use at all times also. This is because it will be needed at different times in the day and will need to be able to be used at all times.
- Before the any product the quad indicators have met the function that set for them because I have made an indicator for a quad. It has got eight flashing LEDs which will show the left and right direction. It has a hover on it to hold the driver when they are in a 1st gear cable made from four different layers of acrylic. The indicator is always ready to be used at any time.

Function

- The indicators will need to be mountable to the quad so the indicators can stay on the quad. The material and product used to hold it on, it will need to be strong so it will not fall off when a strong force is applied.
- The case to sit will need to be heat warning splash proof and robust so that the circuit can't short circuit or get damaged.
- The quad to sit will have all its components colored fresh and will have holes on them so they are fully splash proof because if the circuit shorts the whole product will not work.
- The product is meant to save the pain used will not be too big so if any child's to follow in the past will not harm them.
- The product will conform with the British standard indication on the consumer knows that it is safe.
- The product has passed this because there are brackets which attach to the back of the quad for the main indicators and the handle bars for the controller. It will hold them in place and they will not fall off. When the layer cable is fully screwed together it is splash proof. The vents at the back of the quad indicator could it in some way or left outside this is my evaluation of the product.

Safety

- The indicators will need to be mountable to the quad so the indicators can stay on the quad. The material and product used to hold it on, it will need to be strong so it will not fall off when a strong force is applied.
- The case to sit will need to be heat warning splash proof and robust so that the circuit can't short circuit or get damaged.
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Size, shape and dimensions

- The main quad indicator will be no greater than 50mm x 30mm x 20mm if the product is any larger than this it will be looking to fit on the back of the quad.
- The brackets will not be larger than 50mm in length because one then would be exceeding the indicator's reach.
- The shape will be a modern light aesthetically pleasing to the eye so it will draw consumers to purchase it.
- I have met the size specification because my product is no larger than 50mm x 30mm x 20mm. Also the brackets are not any bigger than 50mm. The shape is the shape of a quad from a side view so it has lots of curves so it is pleasing to the eye.

Ergonomics

- It will be positioned behind the user and easy access to the switches so it can be controlled easily.
- It is positioned the right amount of distance from the user so it is easily used.
- It isn't too positioned any longer than a human arm's length was because it would be impossible and unsafe to reach. Also it is not positioned any where else like under the quad because it would be also impossible to reach.
- The ergonomics of the quad indicator is correct because the lights are positioned at the back of the quad and the controls are at the front of the quad on the handle bars. This helps because it is easy to reach and easy for anyone behind you to see.

Environment

- It will use an little amount of materials as possible and the materials will be recycled and not harmful to the environment.
- It will be as safe as possible and will use non harmful chemicals when producing the product so it doesn't produce harmful gases.
- I have completed most of this specification I didn't produce any harmful gases while making my product and for some of my project I used old acrylic which was going to be thrown out.

Aesthetics

- The product is going to look modern stylish and colourful and it will appeal to the customer.
- The product is also going to be pleasing to the eye. It will be coloured with bright and bold colours so it attracts the eye.
- The design will have a smooth finish with a polished look for a nice look.
- It will appear as all quad users young and old will be a where indicator so it doesn't cut any one out when they are going to use it.
- I have finished this because it is made of light bold blue acrylic which stands out and people would notice it better. It is smooth around the edges due to the smooth cutting of the laser cutter. It appears to all quad users due to its simplicity to use and colours.

Anthropometrics

- The product will be general use for all users so anyone can use it no matter what size they are.
- Children will be able to use it because of the size and will make this into a good selling point.
- I have met this because the product is in the right size to handle and use for any age.
- It will not be very expensive or make which is good when it comes to selling the product because it will be cheap.
- While making the product the price will be set down so it will not be expensive.
- I believe I have met this because I have tried to spend a little money whether it was using old bit of acrylic or reboring the size to save money. Manufacturing and materials.
- The product will be made from layers of materials which are heat warning robust lightweight and durable which can be found in the school workshop so it product is suitable for using in a school.
- Attaching the layer cable from acrylic or other thermo setting plastics is a good idea because they can be very transparent and good for ultraviolet radiation resistance.
- The product will be produced in the correct because it is good for cutting the materials made and with a laser cutter.
- I have met this because my product is made from four layers of acrylic. Acrylic is good because it is heat warning and ultra violet resistance. They were cut out in a laser cutter to save time and a nice finish.

These photos show my actual quad indicators attached the quad. The photos show that they can be attached to a quad by using the brackets. The controller is attached to the middle of the handle bars where I first thought they could have gone. The main indicator box is attached to the rear of the quad; this is where I thought I was going to put it from the very start. I thought this was the best place for it because it would be the easiest place for people behind you to see the lights. The controller is positioned in the best place because it is easy to reach when your hands are on the hands on the handle bars. I think the indicators look good on the quad because it is the side view of the quad so it relates to it.

Notes: -



Concepts

3 Pages - 20 Marks

A range of quality **concept sketches** that show creativity, **knowledge and understanding of the system(s)** including detailed annotation;

NB: Systems environment is interpreted as engineering solutions designed to support, encase, house, and or display the system.

Show a range of **(two)** concept sketches of proposed systems designs including

annotation;

Show a depth of **knowledge and understanding of how the systems**

work; Example: - Input/Control/Output;

Range of drawing methods to be used including

2D

3D

Isometric

Perspective

Orthographic

Exploded Drawings

Assembly Drawings

Hand sketched

Hand Rendered

Computer Generated

1 1/2 pages of casing concepts (small annotated sketches)

1 1/2 pages of system design (at least 3 different systems)

For each system include:-

- Input, process, output block diagram
- Circuit diagram
- Explanation of system operation
- On third concept page, include development and give reasons for y

