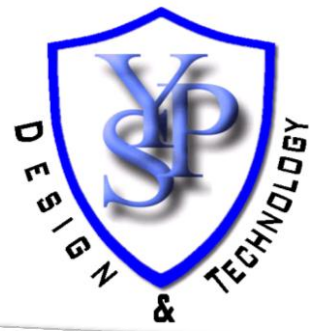
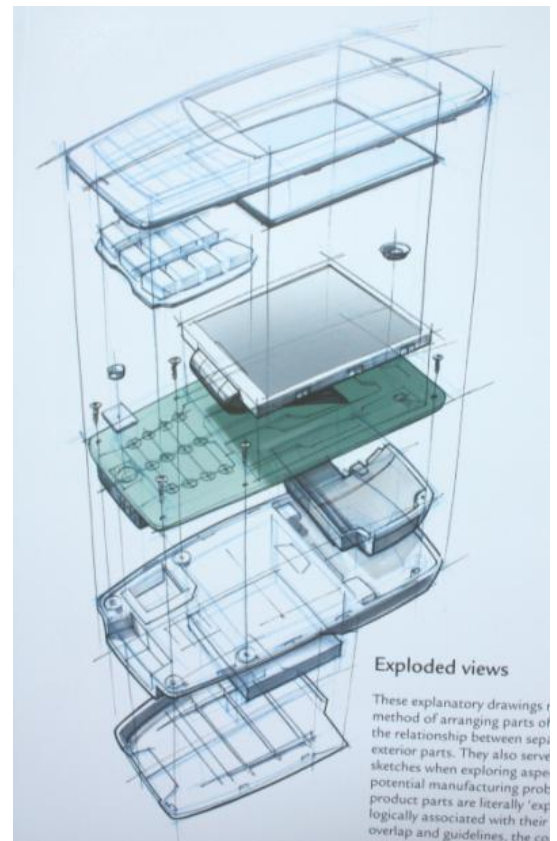
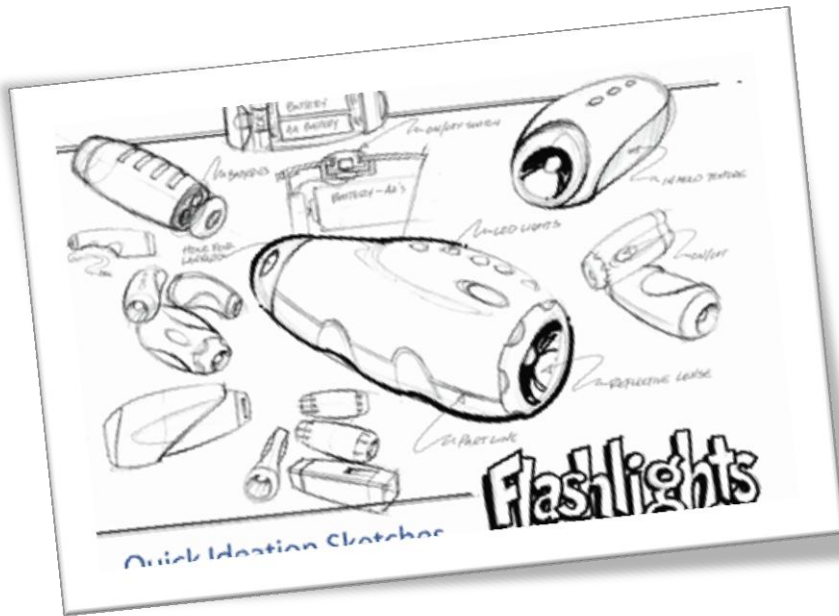
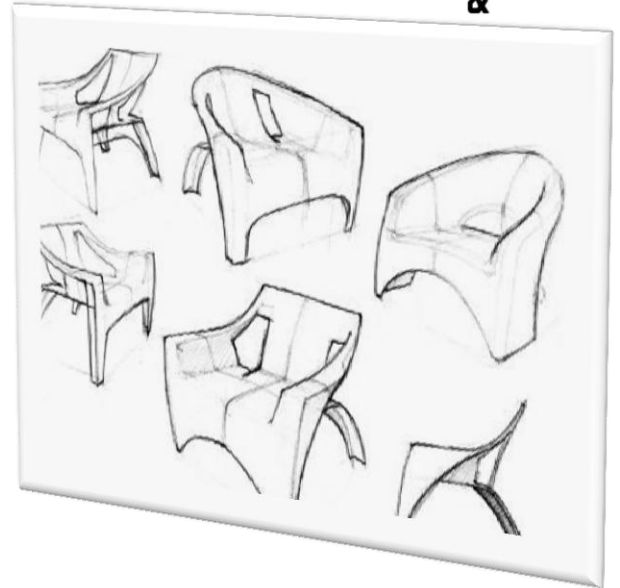
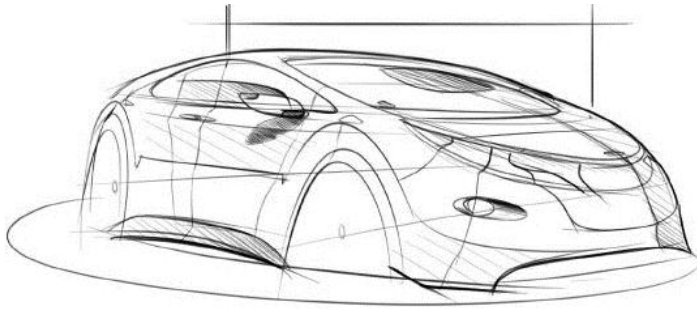


A Level Design & Technology



Project Guide



This booklet will be used to guide you through the project. Your teacher will also support you with hand outs and PowerPoints. Look after this guide and ensure that you bring it to every lesson.

Name:

Project Mark Scheme

Design and Make task			
		Summary of Assessment Criteria	Marks
Designing	(a)	Analysing and researching design situations	10
	(b)	Generating and developing ideas and proposals	30
	(c)	Detail designing	10
	(d)	Evaluating, reflecting and decision making	15
	(e)	Communication / Key skills	10
Making	(f)	Planning for making	5
	(g)	Range and sophistication of making skills	30
	(h)	Accuracy, quality and finish of the design solution	25
	(i)	Functionality and innovation of the design solution	15
Total			150

Project Gantt Chart

Description	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Product analysis and research								
Developing a specification								
Generating and developing ideas and proposals								
Detail designing								
Evaluating and decision making								
Communication / Key skills								
Planning for making								
Selecting and testing materials and processes								
Use of materials and processes								
Accuracy, quality and finish of the design solution								
Functionality and innovation of the design solution								

You will be given formal deadlines for each stage of the project by your teacher. The Gantt chart above shows the basic layout for the project to give you an idea of where you should be at any given time in the year.

Pupil Notes:

Analysing and researching design situations (10 Marks).

Checklist of features

- *Identifying a need (this can be done through a mind map).*

Explain the following to define the design situation clearly in words and drawings/photographs:

- What are the aims of the project;
- Who is the product intended for, the target audience;
- How often is the product likely to be used;
- Where will the product be used;
- Will the existing environment affect the design of the product?

- *Identify user needs.*

- List all the qualities that you think the intended user may demand of your product (materials cost, features, function, size, weight, colour, manufacture, quality, finish, sustainability).
- Undertake market research on your target audience to establish their wants/needs, present this information using graphs.
- Present a comparative analysis of your results.

- *Evaluating existing products (looking at above the line and below the line features).*

- Use the hand out given by your teacher to evaluate an existing product that you have access to, take lots of photographs of the product, including ones of you using it;
- Explain why you chose the particular products for evaluation (target audience, market sector etc.);
- Annotate the important design features of the product;
- Annotate the weak design features of the product;
- Identify key areas that will need to be researched in depth.

- *Design considerations.*

- Produce a 'mood, theme and/or lifestyle board' for your design work;
- Explain the design features that you think your product must have;
- Assess the importance of a range of design considerations to your design task;
- Describe any unique selling points or special features that your product might have.

- *Research (this must be linked to your product analysis)*

- Identify relevant knowledge and understanding that you will need to help you when designing;
- Identify the likely sources of this information;
- Include a section in your folio that contains the information that you intend using;
- Place other material in a separate ring binder or document wallet.

- *Design brief and specifications*

- As a result of your research write an updated design brief as a short, clear statement of intent;
- Make a detailed broad product specification (use the specification hand-out to help with this);
- Include specifications required by the client or consumer;
- Develop a hierarchy of features;
- Use qualitative and **quantitative** performance criteria;
- Include the unique selling points of the product.

Generating and developing ideas and proposals (30 Marks)

Checklist of features

- *Generating design ideas (sketch book work)*
 - Use idea generation techniques to produce a comprehensive range of initial ideas with mini-developments in your sketch book;
 - **Include material considerations and possible construction techniques;**
 - Annotate your design ideas indicating the strengths and weaknesses of these ideas;
 - Use your specification to assess the strengths/weaknesses of your idea **(this is linked to your evaluation mark);**
 - Identify ideas, or parts of the ideas, that can benefit from further development;
 - Say why you think that these ideas have potential for further development;
 - Explain why your other designs may not be as successful;
 - Make models or mock-ups as appropriate to prove and test your ideas.

- *Development of chosen idea using ICT where appropriate (A2 Folder)*
 - Show clearly which ideas you have chosen to develop (should be at least 3);
 - Integrate aspects of other proposals that would improve the product;
 - Apply anthropometric data and explain why this is essential;
 - Develop a detailed design proposal for prototyping;
 - Explain all constructional details;
 - **Establish suitable materials and possible alternatives through testing (this is linked to the making mark);**
 - Identify components and fixings that would be needed;
 - Evaluate the strengths of the proposal against the specification.

Pupil Notes:

Detail designing (10 Marks).

Checklist of features

- *Formal presentation drawings using ICT where appropriate*
 - Detail drawings in orthographic projection as appropriate;
 - Produce parts drawings if required;
 - Provide section and/or exploded drawings as appropriate;
 - Pictorial rendered drawings;
 - Produce a cutting list including materials and other remarks;
 - List any components and fixings to be used;
 - Provide patterns or templates as appropriate.

Pupil Notes:

Selecting and testing materials and processes (links to making and designing)

Checklist of features

- *Selection and testing materials and components*
 - Appropriate materials have been chosen for all components of the product;
 - Critical components have been tested;
 - Materials have been chosen according to relevant criteria.

Information found can be recorded in a table as shown below:

Component description	Functional properties	Possible materials	Chosen material	Justification

Pupil Notes:

Planning for Making (5 Marks).

Checklist of features.

- *Product planning and costing*
 - Produce a production plan for the product (follow the notes given on the hand out by your teacher for this)
 - Produce a Gantt chart that links to your production plan;
 - Consider quality assurance and quality control procedures;
 - List the construction stages for each component;
 - Include the joining and assembly stages;
 - Estimate the time requirements for each operation and include this in your production plan;
 - Identify tools, equipment and processes needed;
 - You must keep a diary of making in your sketch book, at the end of every lesson list what work you have done and list what work you will do next, support this with photographs of your work progressing.
 - Stock material costs;
 - Fixtures, fittings and/or other bought in components;
 - Total prototype unit cost;

Pupil Notes:

This year there are many more marks available for the practical element of your project. It is essential that you are up and running with your practical before Christmas. You must remember to keep adding to your sketch book and your folder whilst the focus in class is on your practical work.

Range and sophistication of making skills (30 Marks)

The box below shows the criteria to get between 23 and 30 marks. Take note that you must have a wide range of challenging making skills in your project.

<ul style="list-style-type: none">• Evidence of a range of challenging making skills.• Sophisticated and appropriate manufacturing processes used to make the final design using CAM where appropriate.• Creative use of materials to manufacture the final product.• A high level of making skills, including key innovative characteristics, in the production of the final solution.	23 – 30
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Accuracy, quality and finish of the design solution (25 Marks)

The box below shows the criteria to get between 20 and 25 marks. Take note that you must have achieved high levels of accuracy and an excellent quality finish.

<ul style="list-style-type: none">• A well made product demonstrating accuracy in construction.• A very high level of tolerances achieved.• Excellent quality of finish achieved, through care and attention to detail.• The candidate has worked unaided and demonstrated an ability to successfully adapt techniques to new situations.	20 – 25
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Functionality and innovation of the design solution (15 Marks)

The box below shows that to get between 12 and 15 you must complete the practical element of the product and it has to work.

<ul style="list-style-type: none">• Innovative end product functions very well and fully meets the requirements of the design brief and specification.	12 – 15
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Pupil Notes:

Folder check list.

		Hand In Date	Complete
Research	Initial Design Brief		
	Analyse the Design Brief (Mind Map)		
	Identifying a need.		
	Identifying a user need		
	Product Analysis (Above the line and Below the line)		
	Research plan (Highlight areas of interest from Product Analysis)		
	Questionnaire and analysis		
	Mood Board		
	Focused research as a result of findings from product analysis (ergonomics, BSI, materials, manufacturing etc)		
	Final Design Brief and Specification		
Design	Sketch book work for initial design ideas (lots of ideas, annotated, reference to specification)		
	Development of ideas (At least 3 ideas to be developed)		
	Detail Designing		
	Modelling and Testing		
	Selection of materials and processes		
	Presentation Drawing		
	Orthographic Drawing		
	Exploded Drawing		
Plan	Production Plan		
	Gantt Chart		
	Diary of making in sketch book (this can be supported by photographs in A2 folder)		
Evaluate	Evaluate against specification		
	User testing		
	Recommendations for improvement (ACCESS FM)		

Pupil Notes:
