

Bridging Project

Subject: *A-Level Design & Technology*

Exam Board: *EDEXCEL*

Welcome to A-level Design & Technology. We are delighted that you are considering A-level Design & Technology as an option in Year 12. To demonstrate your commitment to the course and to prepare you for September, you must complete the following tasks to the best of your ability. These tasks are compulsory and must be completed prior to your first Design & Technology lesson in Year 12.

We expect you spend at least 5 hours completing the tasks outlined in this pack. The activities have been designed to help you begin to develop some of the key skills you will need for A-level Design & Technology.

Learning Objectives: To prepare for your first project in Y12 you will develop:

1) Independent analytical research skills and design thinking. 2) 2D and 3D design sketching ability. 3) Written annotation – knowledge and understanding of materials and assembly.

Contacts for Support:

Mr Swindlehurst, Mr Quigley or Mrs Turner – Please email via Insight or visit room 35 (Departmental Office)

The main aim of the Bridging Project is to prepare you for the first project that we will do in Y12. You will do the research / product analysis and initial ideas ready for September when we will do development of ideas modelling and making in lessons. We will use your project to assess the following skills:

1) Independent analytical research skills and design thinking. 2) 2D and 3D design sketching ability. 3) Written annotation – knowledge and understanding of materials and assembly.

The Project:

- You will design and prototype a Virtual Reality headset. These are becoming more popular and there are loads of apps available for Apple and Android devices. You will make one to fit your own phone and you can use apps such as Fulldive, Google expeditions, Youtube 360 etc to view either VR or stereoscopic IMAX quality 3D games / apps / videos.
- RM students can use any wood, metal or plastic processes and graphics can use card or polypropylene nets, or plastic and vac forming processes.
- You can do background research on VR headsets on amazon and also look at Google Cardboard (google it!) These are low cost headsets developed by google that give impressive results. I got my kids one each for around a fiver on amazon. DO NOT FEEL THAT YOU HAVE TO BUY ONE, we will look at existing ones in lessons in September. If you are curious go ahead and buy one, then redesign it in September to make it better.....

The Tasks:

- Research: EITHER:
 - Use amazon for images and reviews OR
 - buy one and take 5-10 photos of it from different angles then:

Use Cafe Que to carry out a product analysis and identify the main + and – design features under each section of Cafe Que. Illustrate these +/- points with the photographs. Add a conclusion of the main negative points. There is a Cafe Que prompt sheet in this pack, it is only a basic overview as a reminder. Feel free to use it but also add further comments and ideas of your own for higher marks. Graphics students – don't forget to look at the graphics on it!

- 2) Create 1-2 pages of initial ideas sketches using 2D and 3D sketches where appropriate (3 sketches minimum, 6 sketches max) These ideas should illustrate how you would design your own headset based on your product analysis conclusion.
- 3) Annotate the sketches to highlight the key design features and remember to add details of materials and assembly methods that have been used (show off your theory knowledge from GCSE!)
- 4) Add a conclusion that lists the best elements of your designs – we will use this conclusion as a basis for developing your design in September using models and sketches.

Assessment:

Product Analysis – 10 marks

Initial Ideas - 20 marks

Annotation - 10 marks

What is A Level Design & Technology about?



This is a 2 year, linear course with one coursework project done across the two years with one exam at the end of Y13. We will start Y12 with materials and practical skills theory based on 2 minor projects which do not count towards your coursework mark, but will teach you all the design and making skills needed. These projects are to further develop your skills and confidence using a wider range of tools, materials and equipment not previously used in lower school including the bandsaw, laser cutter, 3D printer etc. The first project will be to design and prototype a virtual reality headset and you will complete the preparation work (research and designs) for this during the bridging project. This will mean starting Y12 with product development, modelling and practical based work.

Details of the course breakdown are as follows:

Component 1: Principles of Design and Technology – theory taught across the 2 years for use in coursework annotation and the final exam

Component 2: Independent Design and Make Project – a coursework project similar to GCSE where you design, develop, make and test a product of your choice

<p>Component 1: Principles of Design and Technology (Paper code: 9DT0/01)*</p> <p>Written examination: 2 hours 30 minutes</p> <p>50% of the qualification</p> <p>120 marks</p>
<p>Content overview</p> <p>Topic 1: Materials</p> <p>Topic 2: Performance characteristics of materials</p> <p>Topic 3: Processes and techniques</p> <p>Topic 4: Digital technologies</p> <p>Topic 5: Factors influencing the development of products</p> <p>Topic 6: Effects of technological developments</p> <p>Topic 7: Potential hazards and risk assessment</p> <p>Topic 8: Features of manufacturing industries</p> <p>Topic 9: Designing for maintenance and the cleaner environment</p> <p>Topic 10: Current legislation</p> <p>Topic 11: Information handling, Modelling and forward planning</p> <p>Topic 12: Further processes and techniques.</p>
<p>Assessment overview</p> <ul style="list-style-type: none"> • The paper includes calculations, short-open and open-response questions, as well as extended-writing questions focused on: <ul style="list-style-type: none"> ○ analysis and evaluation of design decisions and outcomes, against a technical principle, for prototypes made by others ○ analysis and evaluation of wider issues in design technology, including social, moral, ethical and environmental impacts. • Students must answer all questions. • Students must have calculators and rulers in the examination. <p>Calculators may be used in the examination. Information on the use of calculators during the examinations for this qualification can be found in <i>Appendix 2: Calculators</i>.</p>

Component 2: Independent Design and Make Project (Paper code: 9DT0/02)

Non-examined assessment

50% of the qualification

120 marks

Content overview

- Students individually and/or in consultation with a client/end user identify a problem and design context.
- Students will develop a range of potential solutions which include the use of computer aided design and evidence of modelling.
- Students will be expected to make decisions about the designing and development of the prototype in conjunction with the opinions of the client/end user.
- Students will realise one potential solution through practical making activities with evidence of project management and plan for production.
- Students will incorporate issues related to sustainability and the impact their prototype may have on the environment
- Students are expected to analyse and evaluate design decisions and outcomes for prototypes/products made by themselves and others
- Students are expected to analyse and evaluate of wider issues in design technology, including social, moral, ethical and environmental impacts.

Assessment overview

- The investigation report is internally assessed and externally moderated.
- Students will produce a substantial design, make and evaluate project which consists of a portfolio and a prototype
- The portfolio will contain approximately 40 sides of A3 paper (or electronic equivalent)
- There are four parts to the assessment:
 - **Part 1: Identifying and outlining possibilities for design**
Identification and investigation of a design possibility, investigation of client/end user needs, wants and values, research and production of a specification
 - **Part 2: Designing a prototype**
Design ideas, development of design idea, final design solution, review of development and final design and communication of design ideas
 - **Part 3: Making a final prototype**
Design, manufacture and realisation of a final prototype, including tools and equipment and quality and accuracy
 - **Part 4: Evaluating own design and prototype**
Testing and evaluation