

GCSE Design and Technology - Product Design

Component 1: Design and Technology in the 21st Century

Written exam at the end of Year 11, 2 hours duration and counts for 50% of the qualification.

Core knowledge and understanding –

- **Design and technology in our world:** industry, enterprise, sustainability, people, culture, society and manufacturing systems.
- **The categorisation, origins and properties of materials:** natural and manufactured boards, ferrous and non-ferrous metals, thermoforming and thermosetting polymers and modern and smart materials.
- **Electronic systems and programmable components:** graphical conventions, systems, use of control devices, electronics in a variety functions and end uses.
- **Specialist techniques and processes:** using a range of materials, tools and processes.
- **Applying surface treatments and finishes:** to enhance the functional and aesthetic quality of the prototype.

Component 2: Designing and making principles

Design and Make project (folder and prototype) 50% of qualification. Students select one out of a possible three contextual challenges on June 1st in Year 10.

Students will complete a 10 hour 'supervised period' in February/March of Year 11 for making their final prototype. Students will sit a 5 hour practical mock exam in November of Year 11 to practice making a prototype under supervised conditions.

Folder and Prototype weighting:

- Identifying design possibilities - 10 marks
- Developing a design brief and specification - 10 marks
- Generating and developing design ideas - 30 marks
- Making a prototype -30 marks
- Evaluating a prototype's fitness for purpose -20 marks

Analysis of design context and development of project brief, analysis of client and user needs, design specification, investigate ergonomics, anthropometrics, environmental, social and economic issues, develop and test practical ideas, investigate the work of existing product designers - 20% of qualification.

Prototype: Select a range of resistant materials to design and make a working, high quality and commercially viable prototype - 30% of qualification.

Future pathways: BA Honours Degree in a whole range of design subjects including silversmithing and jewellery, footwear design, product design, engineering/STEM careers, furniture design, interior design, teaching, working in industry in the UK and abroad.