

Design and Technology

Course: AQA 8552

The Design and Technology course offered in Year 10 and 11 includes three main areas of study together with an extended project. The three main areas of study are:

1. Core technical principles

In this section, students gain a breadth of core technical knowledge which includes the following:

- new and emerging technologies
- energy generation and storage
- developments in new materials
- systems approach to designing
- mechanical devices
- materials and their working properties.

2. Specialist technical principles

In addition to the core technical principles, all students should develop an in-depth knowledge and understanding of the following specialist technical principles:

- selection of materials or components
- forces and stresses
- ecological and social footprint
- sources and origins
- using and working with materials
- stock forms, types and sizes
- scales of production
- specialist techniques and processes
- surface treatments and finishes.

Each specialist technical principle will be delivered through at least one material category or system. Not all of the principles outlined above relate to every material category or system, but all will be taught. The categories through which the principles can be delivered are:

- papers and boards
- timber based materials
- metal based materials
- polymers
- textile based materials
- electronic and mechanical systems.

3. Designing and making principles

Students learn that all design and technology activities take place within a wide range of contexts. They should also understand how the prototypes they develop must satisfy wants or needs and be fit for their intended use. For example, the home, school, work or leisure. They will need to demonstrate and apply knowledge and understanding of designing and making principles in relation to the following areas:

- investigation, primary and secondary data

- environmental, social and economic challenge
- the work of others
- design strategies
- communication of design ideas
- prototype development
- selection of materials and components
- tolerances
- material management
- specialist tools and equipment
- specialist techniques and processes

The assessment for the GCSE consists of two equally weighted components:

- 1) A written examination which largely tests students' knowledge and understanding of the technical and the designing and making principles listed above.
- 2) A non-examination assessment which is a project which should take between 30-35 hours to complete and consist of a working prototype and a concise portfolio of approximately 20 pages of A3 paper, equivalent A4 paper or the digital equivalent.

For the non-examination assessment, students may either focus on a product made using resistant materials or on a product which is paper or board based. The decision as to which route students will take is made when choosing the options in Year 9. At that stage, students will choose to take either:

Design and Technology: Resistant Materials or

Design and Technology: Graphic Products.

For each course, the same specification is used which may be accessed from the link below:

<http://filestore.aqa.org.uk/resources/design-and-technology/specifications/AQA-8552-SP-2017.PDF>