

# GCSE Design and Technology

**Examination Board:**

AQA

**Director of Learning:**

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## Why study Design and Technology?

GCSE Design and Technology will prepare students to participate confidently and successfully in an increasingly technological world. Students will gain awareness and learn from wider influences on Design and Technology including historical, social, cultural, environmental, and economic factors. Students will get the opportunity to work creatively when designing and making and apply technical and practical expertise.

*“Design and technology is a phenomenally important subject. Logical, creative and practical, it’s the only opportunity students have to apply what they learn in maths and science - directly preparing them for a career in engineering.” James Dyson*

In GCSE Design and Technology you will be taught a range of skills from the traditional to the technological. You will have the opportunity to design and manufacture using materials (wood/ metal / plastic) while developing a more in-depth theory of design.

## Possible next steps (including careers)

Design and Technology leads on to further study at AS or A level and beyond to apprenticeships or degree level study and careers in Design, Construction, Engineering, Manufacturing, Automotive Industry, Graphic Design, Marketing and a vast range of careers involving planning and problem solving.

## Aptitudes needed

It is essential that you are organised, self-motivated and able to meet deadlines. You should be creative and have good communication skills in order to develop ideas.

Students must be able to apply relevant knowledge, skills and understanding from KS3 and KS4 Science and Mathematics as part of this course.

## Topic Structure

### Year 10

You will undertake a series of mini projects focussing on different aspects of the examined criteria. During the projects, you will develop your ability to communicate ideas with freehand sketching, CAD (Computer Aided Drawing) and a range of modelling processes. You will have the opportunity to use a range of tools and machinery to prototype and develop ideas further.

You will study the key components needed for the exam; new and emerging technologies, energy generation and storage, developments in new materials, systems approach to designing, mechanical devices, materials and their working properties, forces and stresses, ecological and social footprint, scales of production and specialist techniques and processes.

### Year 11

You will undertake a major project from a shortlist of briefs set by the examination board. You will need to identify a client and target market which best suits your chosen design brief. Then undertake research leading to the design, prototyping and evaluation of your product.

<b>Assessment Structure</b>	
<b>Paper 1 - Written Examination</b>	<b>Non-Examined Assessment (NEA)</b>
<p><b>Section A - Core Technical Principles (20 marks)</b> A mixture of multiple choice and short answer questions assessing a breadth of technical knowledge and understanding.</p> <p><b>Section B - Specialist Technical Principles (30 marks)</b> Several short answer questions (2–5 marks) and one extended response to assess a more in-depth knowledge of technical principles.</p> <p><b>Section C - Designing and making principles (50 marks)</b> A mixture of short answer and extended response questions.</p>	<p>Substantial design and make task covering the key examined criteria (Core Technical Principles, Specialist Technical Principles and Designing and Making Principles).</p> <p><b>Tasks:</b></p> <ul style="list-style-type: none"> <li>• Identifying and investigating design possibilities</li> <li>• Producing a design brief and specification</li> <li>• Generating and developing design ideas</li> <li>• Producing a physical outcome of the final design</li> <li>• Analysing and evaluating</li> </ul> <p><b>Students will produce a prototype and portfolio of evidence.</b></p>
50% of final mark – 2 hours.	50% of final mark – approx. 30-35 hours