Design and Technology

AQA GCSE Design and Technology (Course Code:8552)

Description

Design and Technology incorporates everything around us from the products we use and the clothes we wear to the buildings we live in. They have all been produced by design and technological activities. This subject develops skills linked to a range of university courses including Architecture, Product Design and Engineering.

The AQA GCSE Design and Technology syllabus enables learners to identify, consider and solve real world problems for real clients through creative thinking, planning and design, and by working with a wide breadth of media, materials and tools. As a result, learners gain greater technical and design awareness, while developing skills such as global awareness, empathy, problem solving, initiative, resourcefulness, enquiry and ingenuity. They also develop the research and communication skills central to the design process with emphasis on higher order design thinking skills.

AQA GSCE Design and Technology provides an ideal basis for further study, and prepares learners for their future within a rapidly changing technological society. It is the place where the theoretical knowledge gained in maths and science can be visualised, understood, realised and tested. These significant links with Maths and Science highlight the fact that Design and Technology is the real world application of mathematical and scientific principles.

Students will look to the past to see the role iconic designs and designers have played in society and the products we use; and look to the future at the advancements of new and emerging technologies and materials and how they will effect the future of design.

This course fosters awareness, understanding and expertise in designing & making solutions to real world problems with real world clients, creating functional outcomes that are not just based on visuals, but based on the needs, wants and constraints of the end user. Working with a range of materials and processes, you will be developing skills and knowledge applicable for today's society.

All of this is backed up with in-depth knowledge of materials, processes and techniques related to industrial manufacture alongside developing an understanding of environmental and sustainability issues to be considered when designing.

The course cover 3 main areas of study:

- Core Technical Principles
- Specialist Technical Principles
- Designing and Making Principles

Additional Information

Due to the nature of project work and term lengths, the course outline on page 3 is an estimated guide and may be subject to change. Knowledge and examination skills are delivered throughout the duration of the course, through practical focused tasks, project work, mock examinations and practice questions, to enable students to be fully prepared for their final assessments. Students are encouraged to practice their CAD design skills and 3D drawing skills continually throughout the course to help communicate their ideas well.

Assessment Breakdown

Paper 1

What's assessed

- Core technical principles
- Specialist technical principles
- Designing and making principles

In addition:

- at least 15% of the exam will assess maths
- at least 10% of the exam will assess science.

How it's assessed

- Written exam: 2 hours
- 100 marks
- 50% of GCSE

Questions

Section A – Core technical principles (20 marks)

A mixture of multiple choice and short answer questions assessing a breadth of technical knowledge and understanding.

Section B – Specialist technical principles (30 marks)

Several short answer questions (2–5 marks) and one extended response to assess a more in depth knowledge of technical principles.

Section C – Designing and making principles (50 marks)

A mixture of short answer and extended response questions.

Non-exam assessment (NEA)

What's assessed

Practical application of:

- Core technical principles
- Specialist technical principles
- Designing and making principles

How it's assessed

- Non-exam assessment (NEA): 30–35 hours approx
- 100 marks
- 50% of GCSE

Task(s)

- Substantial design and make task
- Assessment criteria:
  - Identifying and investigating design possibilities
  - Producing a design brief and specification
  - Generating design ideas
  - Developing design ideas
  - Realising design ideas
  - Analysing & evaluating
- In the spirit of the iterative design process, the above should be awarded holistically where they take place and not in a linear manner
- Contextual challenges to be released annually by AQA on 1 June in the year prior to the submission of the NEA
- Students will produce a prototype and a portfolio of evidence
- Work will be marked by teachers and moderated by AQA

Course Outline

Year	Michaelmas Term	Lent Term	Trinity Term
9	Introduction to the course. Workshop Health & Safety. Assessing levels of existing D&T Knowledge. Core and Specialist Technical Principles with theoretical content and application of: • Papers and Boards • Electronic systems and Plastics • The Work of Others • Design Strategies • Communication of design ideas.	Core and Specialist Technical Principles with theoretical content and application of: • Mechanisms and Metals • Textiles • Smart and modern materials including composites • The Work of Others • Design Strategies • Communication of design ideas.	Core and Specialist Technical Principles with theoretical content and application of: • Timbers • Environmental impact of Materials • The Work of Others • Design Strategies • Communication of design ideas.
10	Designing and Making Principles with theoretical content and application of: • User Centered Design • Social challenge • *investigation, primary and secondary data* • communication of design ideas • prototype development • CAD and CAM Use of NEA criteria to mark project work.	Designing and Making Principles with theoretical content and application of: • Environmental, economic and industrial challenge • Communication of design ideas • Selection of materials and components • Tolerances • Material management • Specialist tools and equipment • Specialist techniques and processes Use of NEA criteria to mark project work.	Revision and Past paper questions. Mock exams NEA Preparation Sketching and CAD skill development. NEA task selected from exam board. Released 1st June. Complete work on Criterion A and Criterion B.
11	NEA Internally assessed based on task selected from exam board. Working on Criteria C, Criteria D and Criteria E Past paper questions.	NEA Internally assessed based on task selected from exam board. Working on Criteria E, And Criteria F. Past paper questions.	Revision, Past paper questions, Study Leave GCSE Exams