



## *Welcome*

### *Design and Technology*

We aim to prepare our students to take part in the development of tomorrow's rapidly changing world. Creative thinking encourages students to make positive changes to their quality of life.

The subject encourages students to become autonomous and creative problem-solvers, both as individuals and as part of a team. It enables them to identify needs and opportunities and to respond by developing ideas and eventually making products and systems.

The practical applications of mathematical and scientific concepts are combined with practical skills, and an understanding of aesthetic, social and environmental issues together with industrial practices. This allows them to reflect on and evaluate present and past design and technology, its uses and its impacts. Technology helps all students to become discriminating and informed consumers and potential innovators.

We have excellent ICT facilities, as well as superbly equipped workshops. Students will be taught both traditional skills as well having access to modern techniques such as Computer Aided Design and manufacturing.

## KS3

Every student studies Design and Technology for 1 hour per week at KS3. In DT, students will learn a variety of skills, including traditional practical skills, graphics skills and CAD/CAM skills using our ICT facilities. Students will complete a number of projects that will enhance both their practical skills, and theoretical understanding of this wide ranging subject. Projects are completed using wood, metal and plastic, together with introductory electronics, CAD and graphics skills. The projects will allow students to build on, and develop, their skills enabling them to successfully complete GCSE Design Technology, or BTEC Engineering courses at KS4.

Practical projects include; a plastic key ring, steady hand game, bottle opener, cast pewter jewellery, wooden box, multi-material desk tidy, working clock and a functioning USB flash drive. These projects will link closely to many theoretical aspects of the subject as well as graphics and CAD skill.



## KS4

We currently offer 2 DT related options at KS4:

### **GCSE Design Technology:**

Exam board: AQA Design Technology (8552)

<https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552>

This course is the new 1-9 specification. Much of the content is the same as before, however there is now a greater emphasis on the design process with a focus on developing and producing prototypes of ideas. There is also an increased focus on the application of maths skills, such as costing products, presenting data and interpreting data. This course allows students who are creative, inventive and enjoy 'hands on' DT the chance to develop their design and making skills. Students have the opportunity to create products mainly from wood and plastic to provide solutions to a range of problems. There is a Non-Exam Assessment (NEA) where you will produce one piece of assessed coursework (a product and design folder) which is 50% of your grade. The remaining 50% is assessed through an exam.



## KS4

The second course is:

### **Level 2 BTEC Technical Award in Engineering**

Exam Board: Edexcel. Course code: 603/0829/1

<https://qualifications.pearson.com/en/qualifications/btec-tech-awards/engineering.html>



### **Summary of the course**

This is very practical course, focussing on the skills needed to become a professional engineer. Students have the opportunity to create products mainly from metal which, along with a portfolio, provide evidence of the skills students have learnt. As well as developing a variety of skills from traditional metal skills through to CAD skills, students will also learn about more advanced Engineering skills, such as turning, casting and milling. Using these new skills, students manufacture a number of products which are documented in a portfolio. Other issues which effect Engineering, for example Health and Safety, and how Engineering affects society are also covered, together with sustainability, and other external influences on modern engineering companies.

### **How the course is assessed**

This course comprises of 3 Units; 2 are assessed via a portfolio of evidence, 1 unit is assessed by a 2 part exam. Part A is a practical exam based on a scientific principle; Part B is an engineering design exam.



## Useful links and places to visit

A range of TV series are available on a variety of DT and Engineering topics. Programmes on channels such as 'Quest' like 'How it's Made' and 'Mighty Planes' or even BBC2's 'Top Gear' all provide an insight into design and manufacturing in applied situations.

### **Places to visit linked to DT and Engineering:**

There are many interesting places which you can visit to help support your child's understanding of Design Technology and Engineering

**The Science Museum** – The Science Museum is the most visited science and technology museum in Europe. There are over 15,000 objects on display, including world-famous objects such as the Apollo 10 command capsule and Stephenson's Rocket. [www.sciencemuseum.org.uk](http://www.sciencemuseum.org.uk)

**The Design Museum** – Located on the River Thames, near Tower Bridge, the Design Museum offers inspiring insights into the world of design with exhibitions on fashion, architecture, furniture, graphic, product, transport and digital design. Alongside its cutting edge programme of temporary exhibitions the museum also hosts a variety of talks and family activities. [www.designmuseum.org](http://www.designmuseum.org)

**The Faraday Museum at the Royal Institution** – This grand building just off Piccadilly has been home to 14 Nobel prizewinners, and housed the laboratories of some of the world's greatest scientific minds. The small but entertaining exhibition explores the illustrious history of the RI, and uses animations and comedy to explain some of the groundbreaking concepts and equipment on show. [www.rigb.org/visit-us/faraday-museum](http://www.rigb.org/visit-us/faraday-museum)

**The Royal Gunpowder Mills** – Located in Waltham Abbey, The Royal Gunpowder Mills is a great place for families to spend days out exploring the secret history of gunpowder, explosives and rocket propellants through our engaging interactive Exhibitions, Science Shows and Children's Activities. [www.royalgunpowdermills.com](http://www.royalgunpowdermills.com)

**Kirkaldy Testing Museum** – In Southwark, David Kirkaldy and his machine helped shape today's world, testing materials for such as bridges from St Louis to Sydney via Blackfriars; railways; Liberty ships; the Skylon and Comet airliner. His Victorian workshop still houses the working machine and more. Open on the first Sunday of each month. [www.testingmuseum.org.uk](http://www.testingmuseum.org.uk)

**London Transport Museum** – This museum whisks you on a journey of London's transportation system since 1800, through fascinating and colourful displays, bus and tube simulators and many family-friendly interactive games and activities. [www.ltmuseum.co.uk](http://www.ltmuseum.co.uk)

**The Crystal** – The Crystal, located in Docklands, a sustainable cities initiative explores the future of cities. Home to the world's largest exhibition focused on urban sustainability and a world-class centre for dialogue, discovery and learning. The Crystal lets students experience first-hand many of the pioneering solutions and innovative technologies that are driving future trends for a more sustainable world. [www.thecrystal.org](http://www.thecrystal.org)

Any Questions?

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