Subject Overview

In the modern world enormous amounts of energy, money and time are spent on designing and making things. We live surrounded by things designed and made for us to help meet real needs.

The nature of Technology and Design is to enable pupils to become confident and responsible in solving real life problems, striving for creative solutions, independent learning, product excellence and social consciousness.

The foundation course at Key Stage 3 for years 8 to 10 will allow pupils to start tackling design problems and solving these successfully.

Head of Department

Mr B Morgan

Key Stage 3

Year 8 - Topics studied

Keyfob torch project

- Workshop health and safety
- Basic first aid
- Design cycle
- Working with plastics
- Measuring, marking out, cutting and filing
- Workshop tools, linisher, drill and polisher.

Door alarm project

- Basic electronics
- computer simulation package
- PCB design package
- Manufacturing a PCB
- Vacuum forming a high Impact Polystyrene Case
- Manufacturing a switch
- Testing and Evaluation

Year 9 - Topics studied

Jewellery Box

- Processing of timber
- Hardwoods and Softwoods
- Manufactured boards
- Isometric drawing
- Measuring and marking out wood
- Joints in wood – cutting a rebate joint
- Saws for wood
- Clamping and gluing wood
- Use of linisher, plane and sandpapers
- Finishes for wood.
- Using a net to manufacture a lining.

Mobile phone holder

- Investigating a brief
- Analysing and research
- Manufacturing a model in card
- Using CAD/Using CAM
- Scales of production/quality assurance

- Thermosetting and thermoforming plastics
- Manufacturing process
- Finishing plastics
- Using a hot line bender

Year 10 - Topics studied

Environmental Bird Box

- Investigating a brief
- Analysing and research
- Sustainability
- Manufacturing using workshop tools and machinery
- Varnishing and finishes
- Evaluating a design

Smart Display

- Design using CAM
- Computer aided manufacturing
- Vacuum-forming
- Circuit design and manufacture
- PIC programming

Key Stage 4

Why Study the Subject

If you enjoy being creative and have ideas which you think could solve real life problems for others and have the confidence with the help of your teacher to make that product in the workshop then you should certainly consider GCSE Technology.

Pupils who have completed the course previously have claimed it has been an enjoyable and fulfilling experience which has boosted their self-confidence enabling them to fully realise their true potential.

Assessment Structure

Project - 50%

Girls who complete the course will have made an individual project to meet a design challenge and produced a portfolio of work to accompany it. The project in total should take a maximum of 30 - 35 hours to complete over two years. The coursework accounts for 50% of the GCSE mark.

Exam - 50%

There is only 1 written paper, this consists of the CORE knowledge of the manufacturing processes and tools used when working with wood, metal and plastics (resistant materials). The written paper is worth a total of 50% of the overall mark.

Year 11 - Topics studied

Plastics - theory and processes

Students use modern CAD CAM to design and manufacture a project in plastics while building up their theoretical knowledge and understanding of the nature of plastics and the processes involved in its use within manufacturing.

Practical and theory class assessment

Wood -

theory and processes

Students use machines and hand tools to design and manufacture a project in wood while building up their theoretical knowledge and understanding of the nature of timber and the processes involved in its use within manufacturing.

Practical and theory class assessment

Metals - theory and processes

Students use machines and hand tools to design and manufacture a project in metal while building up their theoretical knowledge and understanding of the nature of metals and the processes involved in its use within manufacturing.

Practical and theory class assessment

Year 12 - Topics studied

Controlled Assessment

This second year of the 2-year course is dominated by the controlled assessment (project). The majority of the time will be spent designing and making the controlled assessment under informal supervision.

External Moderation

Examination

Exam preparation should involve students undertaking research into the given theme for the examination together with revision of the theoretical work covered in year 11.

External Examination

Employability/Job Opportunities/Further Study

- Occupational therapy
- Interior designer
- Product designer
- Architecture
- Management
- Technology teacher/ technician
- Vehicle mechanic
- Machine fitter
- Water service engineer
- Electrical service engineer
- Building services engineer
- Civil engineer
- Mechanical engineer
- Aircraft engineering
- Marine engineer
- Electronics

Key Stage 4 Extra Curricular Activities/Trips/Industry Links

To assist with the practical project, the department has established links with Glen Dimplex.