Design Technology

Design Technology / Textiles / Food & Nutrition in Key Stage 3 is taught as part of a rotation with Food and Nutrition and Design Technology (delete as appropriate). Students are provided with approximately 12 weeks of learning in each discreet subject area per year allowing them an intensive spotlight on each discipline from Years 7 through to 9.

Year 7

- Health and Safety details.
- Design brief and specification.
- Natural and manufactured boards.
- How to use basic hand tools.
- Safe use of abrasive paper to smooth splinters.
- Safe use of the belt face sander.
- Design sketches
- Prototyping.
- Iterative design process.
- CAD and CAM introduction.
- Learning how to use 2D Design.
- Thermoforming and thermosetting polymers.
- Learning skilful use of the strip heater.
- Safe use of screws and screwdrivers.
- Ferrous and non-ferrous metals.
- Learning to safely use junior hacksaws and metal files.

Year 8

- Understanding a client's needs and wants.
- Developing practical skills with plywood.
- Be able to mark out with accuracy and skill.
- Introduction to the coping saw.
- Introduction to the powered scroll saw.
- Develop skills using hand drills.
- Introduction to a range of advanced power tools.
- Introduction to the vacuum forming machine.
- Know how HIPS reacts to heating, cooling and cutting.
- Use graphic design.
- Understand the terms axle, pulley and drivebelt.
- Science link – series circuits. Wire up a series circuit with a motor, switch and battery and trouble-shoot as necessary.
- Understand how a pulley system works.

Year 9

- Develop accurate measuring skills.
- Establish highly developed skills in filing, shaping and smoothing wood.
- Develop high level scroll saw skills.
- Introduction to pilot holes and practice making pilot holes.
- Introduction to screw fixing types.
- Introduction to cordless power drills.
- Introduction to countersink bits and practice using them.
- Develop CAD skills by designing acrylic to be laser cut.
- Introduce circuit making including cutting, tinning and soldering.
- Introducing essential graphic design skills.
- Manufacturing of professional grade packing.
- Developing vacuum forming skills in making the "blister".
- Use of the profile cutting machine.
- Assembly of final product.

GCSE AQA - 8552

Year 10

- Key ideas in DT including
- CAD/CAM
- Sustainability
- Social Issues
- Products in Society
- Powering systems

- Introduction to Materials and Systems
- Properties of materials
- Metals, alloys and polymers
- Electronic systems
- Mechanical systems

- Further materials
- Selecting materials
- Forces and stresses
- Scales of Production
- Production of materials

- Designing and Making

Year 11

- Designing and Making
- Understanding user needs
- Design Briefs and Specifications
- Market Research
- Product Analysis
- Design Strategies
- Developing and Idea
- Drawing Techniques
- Manufacturing Specification
- Developing Prototypes
- Manufacturing a Prototype

- Papers and Boards
- Properties
- Components
- Processes
- Finishing Techniques