Design and Technology KS3 and KS4

What are the aims of the course?

- To develop a range of traditional manufacturing techniques by hand.
- To develop simple electronics knowledge (knowledge of components and the process of completing a PCB).
- To have an opportunity to manufacture with Computer Aided Design/Computer Aided Manufacture (CAD/CAM).
- To develop a broad knowledge of materials, components, technologies, and practical skills to develop high quality, imaginative and functional prototypes.
- To understand and consider sustainability when designing and making a wide range of products.
- To use imagination and experimentation to combine ideas when designing.
- To use the iterative design approach to develop and improve ideas and concepts.
- To recognise the moral, cultural, and environmental issues inherent in design and technology that affect society.

What is the content of the course?

The two main areas of content are Designing and Making Principles and Technical Principles. **Designing and Making:** Students will develop a better understanding of iterative design and use computers and graphic drawing techniques to present design concepts. They will experiment with a wide range of manufacturing skills that allow them to make informed design decisions in their own designing.

Technical Principles: In order to make effective design choices, students will gain a technical knowledge and understanding that includes the impact of new and emerging technologies, industry, enterprise, sustainability, people, culture, society and the environment, production techniques and systems.

What will be assessed during the course?

During the first two years of the course, students will design and produce a range of practical products and concept models. They will also practice key skills like Computer Aided Design (CAD) and technical drawing. Students will develop knowledge of materials and processes. At the end of year 9 students will have the option to take knowledge and understanding of the electronics focus of the GCSE or continue with Product Design. This knowledge of materials will then be utilised in project work as part of the NEA (non-exam assessment) in Years 10 and 11. The NEA is a major design and make project worth 50% of the GCSE. The written exam taken at the end of the course makes up the final 50% of the total mark awarded. This exam will assess knowledge of design and technology including technical drawing, user needs, materials, and processes amongst other topics.

What equipment will be required?

Students will need to bring two HB pencils, a ruler, eraser, and a pencil sharpener, protractor, calculator, and pencil case to each lesson.

