

# DESIGN & TECHNOLOGY

**Head of D&T Department:** Mrs S Frampton

**Head of Food:** Mrs S Alderman

**Teachers:** Mrs Woolridge

## Department Vision

In the Design & Technology department we aim to instil in all students a love for problem solving, an appreciation of the value of materials and ingredients, an understanding of the joy of making functional objects or nutritious food, along with the knowledge and skills to become responsible consumers now and in the future.

The curriculum ensures students develop knowledge in all areas, with opportunities to experiment with modern and smart materials, a full suite of workshop and CAM equipment, 2D and 3D CAD skills, and excellent kitchen facilities.

Students will develop a range of useful life skills; working collaboratively, resilience, problem solving, creativity, practical application of maths.

The Key Stage 3 curriculum is arranged on a carousel, giving students plenty of opportunity to experience all aspects of D&T in purpose-built, modern accommodation.

## Key Stage 3 D&T Curriculum Overview

Year 7		
D&T: Shipping Container Home	D&T: Mechanical Toys	Food:
Students approach this project with a focus upon the needs of their chosen customer. They sketch, model in 3D in both card and CAD, using Sketchup. They get to experience industry standard modelling tools and have the opportunity to be immersed in their designs through the use of a virtual reality headset.	While completing the mechanical toy project there is a focus on movement and mechanical devices. Pupils are introduced to the workshop equipment and Health & Safety, using the full range to manufacture a product. Pupils are introduced to a range of timber-based materials and their properties, along with	During their Year 7 food rotation students build confidence and independence in the kitchen. They cook a range of predominantly savoury dishes using a variety of skills and cooking methods, specifically building skills in working with knives, sauce making and baking. Students develop a basic knowledge of nutrition, healthy eating, and

	methods for joining parts of a product.	ingredient functions and use a wide range of kitchen equipment. They learn how to work hygienically in the kitchen, and the importance of food safety.
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Year 8		
D&T: USB Multi Material Mood Light	D&T: Smart/Modern Material Wearables	Food:
<p>Students have the opportunity to experiment with basic electronics, and programmable microchips to discover how inputs and outputs can be used to create functional circuits. They then apply knowledge of timber and polymers to design and build a USB powered mood light, using surface decoration to personalise their design to make it eye-catching. Marking out using accuracy and a focus on quality control provides students a taste of the GCSE.</p>	<p>With a focus on Smart and Modern Textiles, students learn the properties and uses of different fabrics. They create a snap-band, incorporating the Smart and Modern Materials theme, made from neon and reflective fabrics. During the making process, students learn how to use a sewing machine and other textiles equipment safely and confidently. Students also get the chance to experiment with Smart Materials in a range of hands-on lessons.</p>	<p>In Year 8 food students build on the skills they developed during their Year 7 rotation and expand them through a focus on working with meat and more advanced baking techniques. Students learn skills in recipe selection and modification, and expand their knowledge of nutrition, food provenance and seasonality. Students explore an introduction to food science, and look at the functional and chemical properties of ingredients as well as developing an understanding of how these elements contribute to finished dishes.</p>

## Key Stage 4 D&T Curriculum Overview

Year 9	
Project 1 – Pewter Casting Products	Project 3 – Multi Material MP3 Speaker
Project 2 – Plastics Forming Promotional Project	Project 4 – Summer Term (Designed to suit cohort)

Year 10	
Unit 1 – Alessi Key Fob Torch (Polymers and CAD/CAM)	Unit 4 – Moisture Sensor Full Design and Make (Electronics and Multi materials)
Unit 2 – Phone Stand/Business Card Holder (Paper & Boards)	Unit 5 – In depth knowledge of Timber based materials,
Unit 3 – Smart/Modern materials, Composites and Technical Textiles, programming (crumble)	Unit 6 – Begin Non-Exam Assessment

Year 11
Year 11 – Non-Exam Assessment and Exam Preparation