



Year 7 Design & Technology curriculum – 2024-2025

	Autumn Term	Spring Term	Summer Term	
	In Design & Technology we work in rotations with specialist teachers. Whilst each project is the same wherever it is taught in the year, care is taken to ensure that within the areas that students make progress and develop skills and knowledge differently depending on when in the year. There are varied stretch and challenge opportunities throughout each project allowing this progression.			
	Project 1	Project 2	Project 3	STEAM
Key Concepts	<p>Food Technology An introduction and basic skills</p> <p>Students will learn how to work safely and hygienically. They will complete recipes using a range of different methods and equipment. Some examples include scones, bolognese sauce and Welsh rarebit.</p>	<p>Materials CAD/CAM - Plastic</p> <p>Students design and manufacture a ruler with a packaging. Students manufacture a plastic phone holder. Theory of plastics.</p>	<p>Materials Pewter Cast Brooch – Metal</p> <p>Students manufacturer a pewter casted key ring with resin. Students design and manufacture a copper keyring. Theory of metals.</p>	<p>Torches - Design and make a small hand torch.</p> <p>Flying Eggs & Bridges - In small group challenges.</p> <p>Science within food - Gelatinisation (macaroni cheese) / Raising Agents (lemon and vanilla muffins)</p>
Knowledge & Understanding (National Curriculum) <i>Skills are across the whole year.</i>	<p>Students know and understand how to:</p> <p>Design</p> <ul style="list-style-type: none"> • Use research into desk tidies, mobile phones and children's pop it toys to analyse, identify and understand user needs. • Identify and solve their own design problems to ensure ease of manufacture. • Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations. • Use a pencil 3D sketching, highlighting and CAD to generate creative ideas for the broaches and keyrings and avoid stereotypical responses. • Develop and communicate design ideas using annotated sketches, detailed plans, 3-D modelling, oral and digital presentations and computer-based tools. • Design a pancake dish which shows an understanding of a specific client base and design brief. 			

**Make**

- Select from and use the brazing hearth, pillar drill, hacksaws, coping saws, files, needle files, metal vices, hand vices, engineered vices, hammers, centre punches, strip heater, emery cloth, wet and dry paper, Techsoft 2D Design, Laser cutter, specialist tools, techniques,
- Select from copper, brass, pewter, acrylic, Hips taking into account their properties.
- Cook a range of dishes which allow them to develop various skills such as frying, baking, grilling and chopping.

Evaluate

- Investigate new and emerging technologies in the form of the laser machine, new packaging methods.
- Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups.
- Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.
- Review dishes which have been made in order to identify what went well and what can be improved.

Technical Knowledge

- Understand and use the properties of metals and plastics/polymers and the performance of structural elements to achieve functioning solutions.
- Know the different classifications of plastics and metals, specific examples and their uses.
- Be able to describe different smart materials of thermochromic, photochromatic, memory shaped wire and polymorph.
- Use electronics to manufacture a small torch with a push activation, understand the basic electronic components and use a LED and button battery.
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Cooking and nutrition

- Understand and apply the principles of nutrition and health.
- Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet. This includes recipes which include a range of nutrients from the eatwell guide such as vegetable curry, bolognese, pasta salad and carrot cake.
- Become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes]. Students are encouraged to test their dishes in order to become aware of sensory



properties within their own dishes. They are required to use all areas of the main oven to develop their skill set and will have ownership over their own drawer and cupboard of various equipment.

- Understand the source, seasonality and characteristics of a broad range of ingredients. The range of theory teaching and application within the food technology curriculum allows students to understand these key points regarding the ingredients they use.

Skills

R Develop **RESILIENCE**

- ★ *Through regular evaluation, students learn to see challenges as opportunities for growth rather than as threats. This shift in perspective fosters a growth mindset, which is crucial for resilience.*

A Possess **AMBITION**

- ★ *Having technical knowledge can boost confidence, as students feel more competent and capable of tackling complex problems. This confidence can translate into higher ambitions, as people believe in their ability to achieve more challenging goals.*

I Demonstrate **INTEGRITY**

- ★ *Evaluation fosters accountability by requiring students to assess their actions and decisions. This process encourages honesty and transparency about what has been done, highlighting areas where one has met or fallen short of expectations. Holding oneself accountable is a core aspect of integrity.*



	<p>S <i>Embed Self-Discovery</i></p>	<p>★ <i>Successfully preparing a meal or completing a project, especially a challenging one, can boost self-esteem and confidence. This sense of achievement can translate to other areas of life, encouraging further exploration and self-assurance.</i></p>		
	<p>E <i>Display EMPATHY</i></p>	<p>★ <i>The process of creating products involves deeply understanding the needs and experiences of potential users. This requires students putting themselves in the users' shoes to identify their main points, preferences, and desires, fostering empathy for their situations.</i></p>		
<p>Curriculum Links</p>	<p>Links from Primary School - An Audit of primary link D&T curriculum's show some students will have completed some food technology at primary school. This is generally limited to prep work such as vegetable chopping or making sandwiches etc. This differs from one feeder school to the next. Students will also have varied experience from their homelife. Some students will be proficient in basic skills whereas others may not have used even basic equipment before. Other subjects in school can support their food technology journey, such as maths for weighing and measuring and English for reading methods.</p> <p>Faculty staff use the rotational timetable to review which projects students have</p>	<p>The curriculum allows an overview of each material area over the 3 years. This project is plastics/polymer based and gives the students knowledge and understanding that is the building blocks to the whole of the D&T/Engineering curriculums. This is often the first time students have been introduced first hand to the CAM laser cutter and develop a piece to be machined using CAD.</p> <p>Faculty staff use the rotational timetable to review which projects students have completed and discuss previous learning differently in each rotation. Tasks are approached differently demanding on when in the rotation it is being taught.</p>	<p>This project is metals based and gives the students knowledge and understanding that is the building blocks to the whole of the D&T/Engineering curriculums. Students develop more workshop skills in the casting and shaping of the metal, introducing them to tools and equipment.</p> <p>Faculty staff use the rotational timetable to review which projects students have completed and discuss previous learning differently in each rotation. Tasks are approached differently</p>	<p>STEAM</p> <p>These 3 STEAM projects in the last half term are to develop students and to provide an integrated approach to learning that encourages students to think more broadly about real-world problems and to innovate creatively. Students have developed core knowledge and skills at this point and are more readily equipped to use critical thinking, problem solving, interdisciplinary approach to learning and working in collaboration.</p>



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Assessment	Designing - Pancake design Making - Bread Knowing -Mid session nutrition test.	Designing - Product Analysis Making - Manufacturing phone holder Knowing - End of session theory test.	Designing - Designing the broaches Evaluating - Evaluation of product Knowing - End of session theory test.	
Aspirations & Careers	<ul style="list-style-type: none"> • Discussion of many careers in the design and technology industry such as product designer, engineer, web developer, animator, information architect, robotics engineer, 3D modeller, industrial designer. • Discussion of many careers in the food technology industry such as chef, nutritionist, product development specialist, food scientist, microbiologist, supply chain manager, environmental health officer. • Students will watch demos from professionals on class video clips which are embedded into SOW • Design / food technology teaches practical skills like problem-solving, critical thinking, creativity, and technical proficiency. These skills are transferable to many careers, enhancing employability across various industries. • Projects completed in design technology courses often result in tangible work products, such as prototypes, models, and digital designs. These can be included in portfolios that students can keep for the future. 			