Design & Technology

Intent

In Year 9 students will consolidate their learning in each subject discipline and with confidence utilising their subject knowledge, skills and understanding to respond to a range of design and make contexts, giving students the opportunity to use their creativity and imagination to take design risks to enable them to become resourceful and independent. Students will be encouraged to explore the iterative design process, making design decisions and critical judgements that inform their practice which will influence their final outcome or dishes.

Year 9 Subject Focus	**Product Design – Multi Materials**	**Product Design – Resistant Materials**	**Textiles**	**Food & Nutrition**
	The curriculum is organised on a rotational basis, with all students completing four areas of study per year (approximately 10 weeks) of Product Design (Multi-materials), Product Design (Resistant materials), Textiles & Food & Nutrition			
Knowledge (facts, information, concepts and key terminology)	• Designing to meet the needs of a specific user or audience. • Health and safety in a workshop • Manufacturing processes including CAD/CAM • Working properties of various materials. • Dimensions and tolerance. • Wood joints and joining methods of various materials. • Manufacturing processes. • Electronic components and soldering circuits.	• Designing to meet the needs of a specific user or audience. • Health and safety in a workshop • Manufacturing processes specific to timbers & boards. • Working properties of various materials. • Dimensions and tolerance. • Wood joints and joining methods of timbers and boards. • Manufacturing processes •	• Reinforce the iterative design process. • Use research and investigation to explore the work of others to identify and understand user needs. • Summarise the findings to write a specification to generate ideas. • Revision of health and safety. • Working properties of synthetic fibres & fabrics and their environmental impact. • Textiles manufacturing processes.	• Revise food hygiene and safety to ensure all dishes are safe for the consumer. • How to make food more appealing to the consumer (Food Plating and Presentation). • Analysing a design brief identifying key words and specific areas to further research. • Budgeting – how finances can affect food choice. • Nutritional Guidelines – making healthy choices on a low income. • Producing a time plan – why instructions need to be specific. • Cooking methods – how different methods affect taste, texture, appearance.
Understanding (ability to connect and synthesise knowledge within a context)	• How designers analyse information in response to a design context or brief. • Use specialist product design tools and equipment to manufacture products. • Evaluate their work as it develops to meets the requirements of the design brief and user. • Increase independence following demonstrations and instructions.	• How designers analyse information in response to a design context or brief. • Use specialist product design tools and equipment to manufacture products. • Evaluate their work as it develops to meets the requirements of the design brief and user. • Increase independence following demonstrations and instructions.	• How to respond to a design context & brief through focused analysis. • Summarise findings to write a specification to develop design proposals for an identified user. • Use specialist tools and equipment to manufacture products. • Evaluate work as it develops to ensure their product meets the requirements of the context/user.	• Applying a variety of plating techniques to make an egg and a slice of bread more appealing to a consumer. • Using different cooking methods to affect the sensory appeal of an ingredient. • Identifying key words/phrases for further research when analysing a design brief. • How to produce a detailed time plan that could be used by someone else to successfully make and present a dish. • Use specialist equipment and techniques to make a range of dishes. • Increase independence by planning and preparing own choice dishes.
Skills (successful application of knowledge and understanding to a specific task)	• Analysing information related to the context or design brief. • Generating ideas suitable for an intended user or audience. • Be able to identify the correct tool/machine/process to the material with accuracy. • Show accurate and correct use of subject specific tools and machinery to sand, cut, shape, drill, join, finish, solder. • Applying knowledge of materials to shaping, joining and finishing techniques. • Test, evaluate and refine ideas and practical work as it develops and review success & areas for improvement.	• Analysing information related to the context or design brief. • Generating ideas suitable for an intended user or audience. • Be able to match the correct tool/machine/process to the material with accuracy. • Show accurate and correct use of subject specific tools to model a prototype product. • Applying knowledge of materials and joints. • Test, evaluate and refine ideas and practical work as it develops and review success & areas for improvement.	• Analyse context, design brief and existing products research to identify user needs to formulate ideas. • Apply knowledge of textiles materials to develop more complex construction skills using specialist textile processes to machine sew, cut, shape, join and decorate (including CAM) materials to create a functioning prototype that is fit for purpose. • Test, evaluate and refine ideas and practical work as it develops and review success & areas for improvement.	• Use research to generate ideas on food plating. • Analyse a brief and research relevant areas presenting a concise report which has been evaluated. • Select appropriate cooking methods to alter the sensory aspects of an ingredient/dish. • Develop a detailed time plan identifying the relevant hygiene and safety procedures. • Work independently selecting appropriate equipment and using it correctly and safely to make a range of dishes. • Producing sensory analysis data and evaluating this to test ideas and review success and areas for improvement.
Formal Assessments	Assessment will take place at the end of each rotation to evaluate students' performance on the effectiveness of their outcome in relation to the complexity of the design (if relevant), accuracy of manufacturing or cooking, finishing and presentation methods and suitability for the audience/ user or purpose.			

By the end of the year students on course for at least a grade 5 in Design & Technology will…

- Respond to a context to formulate and develop ideas, relevant research has been conducted to identify a user or a specific need or requirements; the impact of my product on individuals, society and the environment has been considered. This information is analysed, and an ordered specification has been written and ideas are presented using a variety of media (including drawing and CAD) to communicate decisions.
- Materials and ingredients have been considered including their working properties and qualities which make them suitable for a dish or functioning product or prototype. All information is explained and justified.
- Subject specific manufacturing processes are used to make product prototypes or dishes to a good standard that demonstrate some precision which are suitable for a user wants or needs or intended purpose.
- All decisions made in the design or final prototype, or dish has been evaluated and justified and improvements or modifications considered.