

Design and Technology at Key Stage 3 at Cottenham Village College aims to resource our learners with the skills and resources to make a positive impact on society. We want to provide them with the experience of the changing face of design and engineering and the impact our design decisions make on people, the environment and society. The curriculum is designed to build a foundation of material knowledge underpinned with a focus on sustainability that allows students to explore a user-centred design approach leading to creative thinkers with empathy and consideration of others.

At Cottenham VC we routinely use a range of strategies to formatively assess and give feedback to students about their progress. In Design and Technology these strategies include rotational knowledge quizzes to assess understanding of technical concepts and key vocabulary. Whole class feedback used to aid the development of new practical skills.

	Rotation 1	Rotation 2	Rotation 3	Rotation 4
Key subject knowledge: Developing independent practice and application of design thinking	Fundamentals of engineering, responding to forces to reinforce products. Drawing using accurate scale, Collaboration, and team project management	Design from experimentation, working with a brief, Technical drawing: Exploded views and isometric projection, Material management, adapting design to material constraints.	Deepening knowledge of Macro and Micro-Nutrients. Investigation of food science principles. Improving food preparation skills using more complex recipes.	Sustainable design practice, identification of user needs, production of recycled polymer materials, product finishes to create outcomes appropriate for the user.
Key disciplinary knowledge: Key skills and technical knowledge	The effects of forces on materials in a product and how to use engineering principles to help products withstand those forces. Investigation of bridge design and the influences of form and function on design decisions. The ability to work in scale.	Using product analysis as a form of investigation, identifying problems to solve. Investigation of the physics of sound. Using experimentation as a foundation of design development. Accuracy of marking out and measuring.	Deepening knowledge of nutrients and how preparation effects the quality of ingredients. The properties of different ingredients and how they can be manipulated to create appealing recipes. Development of more complex preparations.	The qualities of polymer materials that make them appropriate for recycling. The impact that sustainable design practice has on the environment and society. Considering the needs of the end user when exploring a design challenge.
Summative Assessment Strategies	Testing of the bridge design outcome and its ability to withstand the prescribed forces. Knowledge quiz based on the terms and concepts covered in the unit.	Completed project demonstrating the following skills. Functional passive speaker; modelled and developing into a working final prototype. Quality of development process,	Cold knowledge quiz Demonstrating appropriate practical skills Assessment of independent working practice	Technical knowledge test Demonstration of independent working skills. Assessment of practical production skills and tool uses.

<p>How does this unit prepare students for future study? (Why does this unit go here and not elsewhere in your curriculum)</p>	<p>The skills covered in this unit allow students to think about the design process in terms of function as opposed to aesthetics.</p>	<p>Considering the way that design can be developed from experimentation with the problem rather than lengthy conceptual planning and sketching. This will enable students to have a wider range of methods to employ when approaching a design challenge.</p>	<p>Students will strengthen their language to discuss and evaluate recipes and outcomes. They will lay a strong foundation that will provide a smooth transition to the Food Preparation and Nutrition course at GCSE level.</p>	<p>Students will gain an understanding of the potential of using sustainable practice when completing design projects. A creative approach to material selection and the impact that it has on the final outcome in terms of its appeal to a client.</p>
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