

Topic	Rationale	Knowledge acquisition	Tasks - Notes	Key vocabulary	Skills and enrichment
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Sustainability and The environment - Slot Toy</p>	<p>The primary aim of this Year 9 Design and Technology project is to engage students with key environmental issues and provide them with the knowledge and skills to develop a practical, sustainable solution. The project focuses on three major areas: the greenhouse effect, global warming, and plastic waste, with a particular emphasis on reducing plastic usage in fast food restaurants. The outcome of the project will be the design and creation of a sustainable slot toy that can replace the plastic toys traditionally given in fast food meals, offering a more sustainable alternative.</p>	<p>Lesson 1 (double) Sustainability and the environment</p> <p>To Know why designers need to consider the environment when designing products.</p>	<p>Starter examine images of plastic waste and watch clip relating to ocean waste. Introduce problem and complete a life cycle analysis. Complete a design challenge draw an animal and make it stand up Evaluate the animal and explain how to improve it Assessment and feedback on product analysis. Live marking opportunity</p>	<p>Environment Sustainable Modelling Analysis</p>	<p>Subject Specific Skills:</p> <ul style="list-style-type: none"> • Analysis • Evaluating • Modelling development • Annotating for communication • Using workshop tools and equipment • CAD/CAM <p>Numeracy</p> <ul style="list-style-type: none"> • Measuring in MM • Calculating sizes • Scale <p>Literacy</p> <ul style="list-style-type: none"> • Key vocab, meanings and context • Comprehension of instructions for processes <p>Cultural Capital</p> <ul style="list-style-type: none"> • Sources and origins of materials -impact (Social, moral, environmental. economical) • Sustainability and the environment - impact • Designing for purpose <p>Links to National Curriculum Design:</p> <ul style="list-style-type: none"> • use research and exploration to identify and understand context • identify and solve their own design problems and understand how to reformulate problems given to them develop outcomes • use a variety of approaches to generate creative ideas and avoid stereotypical responses • develop and communicate design ideas using annotated sketches, 3-D and mathematical
	<p>Links to..... KS2. Possible material and practical investigations. KS3. Working safely in a workshop. Using inspiration for design ideas.</p>	<p>Lesson 2 (double) Context and Development</p> <p>To know the purpose of a context and be able to write a context for a design project.</p>	<p>Starter list sustainable materials, sustainable toy ideas spider diagram Write a GCSE style context for the project. Develop model from previous lesson and convert from 2d to 3d Assessment and feedback on product analysis. Live marking opportunity</p>	<p>Identify Context Development Evaluate</p>	
		<p>Lesson 3 (double) Material Sources & Selection</p> <p>To know that the properties of materials are what makes them suitable for a specific product or purpose</p>	<p>Homework 1 Starter how long do common materials take to biodegrade Why is card suitable for modelling? How is paper made, video clip Types of paper and board</p>	<p>Pulp Laminate Stock forms</p>	

Year 9- Design and Technology

<p>The relevance of DT - Where materials come from</p> <p>Ladders towards.... Material properties, selection and processing. Independent working in the workshop.</p>		<p>Work on models and analysis</p> <p>Assessment and feedback on product analysis. Live marking opportunity</p>		<p>modelling, oral and digital presentations and computer-based tools</p> <p>Make:</p> <ul style="list-style-type: none"> select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture select from and use a wider, more complex range of materials and Components taking into account their properties <p>Evaluate:</p> <ul style="list-style-type: none"> analyse the work of past and present professionals and others to develop and broaden their understanding 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 <p>Technical knowledge:</p> <ul style="list-style-type: none"> understand and use the properties of materials and the performance of structural elements to achieve functioning solutions
	<p>Lesson 4 (double) CAD/CAM</p> <p>To know the advantages and disadvantages of CAD/CAM</p>	<p>Homework misconceptions</p> <p>View iterative design clip</p> <p>Know the pros and cons of CAD and CAM</p> <p>Assessment: Show you know 1.</p>	<p>CAD CAM</p> <p>Laser cutter</p> <p>Iteration</p>	
	<p>Lesson 5 (double) CAD/CAM 2D Design</p> <p>To know key features of 2D design to generate CAD files</p>	<p>Difference between vector and bitmap images</p> <p>How to bitmap trace in Techsoft design</p> <p>Develop 2D CAD files from original drawings</p> <p>Assessment and feedback on product analysis. Live marking opportunity</p>	<p>2D design</p> <p>Path</p> <p>Vector</p>	
	<p>Lesson 6 (double) Evaluating</p> <p>To know an evaluation is used in the iterative design process and the development of products</p>	<p>Homework 2</p> <p>Evaluate design work and models</p> <p>Evaluate work against brief and context.</p> <p>Assessment: Show you know 2.</p> <p>Assessment and feedback on product analysis. Live marking opportunity</p>	<p>Analyse</p> <p>Modify</p> <p>Evaluate</p>	