



### Subject: Design Technology

### 5/6 Sustainable Design – Practical Project Mock NEA

Overarching Topic:			
<p>Why is this topic being studied at this time?</p> <p>How does it fit into the wider subject curriculum?</p>	<p><b>Inquiry questions:</b> How can we incorporate the 6 R's into our designs to create a sustainable product? What impacts will using sustainable design strategies such as upcycling have on the environment and wider society? How can we interpret a design brief to write a set of specifications that identify a user's needs and meet them successfully?</p> <p>Students will be given a brief to design a product using upcycled materials. Combining design and joinery techniques to produce a completed product. Students will be given a brief; from this they will write a specification to help guide their design development</p> <p><b>Joining up:</b> Links to science, geography, business and history. Links to current events.</p>		
	Essential	Core	Ambitious
<p><b>The Big Questions</b> (What questions will students be able to answer upon mastery of the topic?)</p>	<ul style="list-style-type: none"> <li>- Are my designs are heavily influenced by existing designs?</li> <li>- Have I used upcycled components but with little or no modification?</li> <li>- Do my design meet some simple specification points/success criteria with little consideration of the end user?</li> <li>- Do I have few iterations from the original concept - design fixation</li> <li>- Does my manufacture of the final product shows basic understanding of joinery techniques. Practical techniques lack refinement in accuracy and execution.</li> </ul>	<ul style="list-style-type: none"> <li>- Have I created some original ideas from research my research?</li> <li>- Are my upcycled components are used in creative ways with some modification?</li> <li>- Does my design specification shows a range of success criteria have been considered to reflect the users needs and wants?</li> <li>- Have I produced a range of initial design ideas? Are they explored to create a final design clearly iterated from initial ideas showing improvement and change?</li> <li>- Is my final product executed well with practical work that shows a good</li> </ul>	<ul style="list-style-type: none"> <li>- Are my design ideas are well researched and show original ideas and concepts?</li> <li>- Are my upcycled components creatively used and modified to enhance functionality?</li> <li>- Have I created a wide range of initial ideas? Have I created multiple, creative concepts with exploration and development?</li> <li>- Is my final product executed with a high level of skill? Do my Joints and joinery show a high degree of accuracy and skill in production?</li> <li>- Does my final product functions as intended with a well-considered</li> </ul>

	- Can I evaluate my product and show some possible areas of improvement?	<p>understanding of joints and joinery with accurate tool use.</p> <p>- Does my final item functions as intended with some improvements considered in the evaluation?</p>	evaluation carried out highlighting improvements?
<b>The Key Skills/ Techniques</b>	<b>The sophistication and application of skills will become more advanced as students' progress through the essential, core and ambitious knowledge</b>		
	<b>Skill/Technique</b>	<b>How will this skill be developed?</b>	
	Product Analysis	Students will analyse existing products, research sustainability & produce their own conceptual ideas.	
	2D Design CAD	Drawing sketch ideas & initial concepts . Taking designs forward using CAD and	
	Converting 2D designing into 3D products	Student will work on producing a design drawing before moving to the workshop	
	Modelling techniques	Students will develop their skills with model making techniques, before manufacturing their final product. They will use and recall their learning from module 4 to employ a range of joinery techniques in the design and manufacture of their product.	
	Graphical communication techniques.	Sketching, isometric & oblique drawing skills, CAD.	
Understanding cultural diversity	Students will study different cultures and culinary become considerate, aware designers.		