



Subject: Design Technology

Passive Amplifier

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>Ultimate Questions: Students will be introduced principles of sound and how designers can work with resistant materials and their physical properties to build an amplifier that contains no electronic components. Students will be challenged to consider the environmental importance of passive designing and energy efficiency in a society facing a global energy crisis.</p> <p>Joining up: This project allows students to develop skills from previous units on resistant materials and enhance their knowledge and practical experiences in timber based designing strategies. This project complements further units in Year 9 on sustainable designing and informs their understanding of the role of templates and production aids and the physical properties of materials for GCSE.</p>		
	Essential	Core	Ambitious
<p>The Big Questions (What questions will students be able to answer upon mastery of the topic?)</p>	<ul style="list-style-type: none"> - What is reverberation? - What is amplification? - What is Passive Designing? - How do we join materials? 	<ul style="list-style-type: none"> - How can we use principles of reverberation to amplify the sound made from a working phone? - How can apply our understanding of sound waves to developing shapes that can naturally amplify sound? - How do production aids and templates improve the quality of manufacturing? - What techniques can we use to join softwood components? 	<ul style="list-style-type: none"> - Can we develop products that have dual-functions? - How might we design an amplifier that can work with different smartphone products? - How can we use passive design principles to solve complex working problems?
<p>The Key Skills/ Techniques</p>	<p>The sophistication and application of skills will become more advanced as students' progress through the essential, core and ambitious knowledge</p>		
	<p>Skill/Technique</p>	<p>How will this skill be developed?</p>	
	<p>Product Analysis</p>	<p>Students will analyse existing passive amplifier designs</p>	
	<p>Sketching/Designing skills</p>	<p>Students will develop design ideas in response to a brief and their understanding of sound amplification</p>	
	<p>Production aids & templates</p>	<p>Students will use production aids and templates to build a working passive amplifier from softwood.</p>	
	<p>Using Hand-tools</p>	<p>Student will develop further competency in using hand-tools covered in a previous unit.</p>	
	<p>Health & Safety</p>	<p>Students will enhance their understanding of safe working practice and the correct PPE to wear alongside identifying and mitigating risk in the workshop.</p>	

