

## Curriculum Map: Design & Technology Year 7

*Please note that each project lasts one term and students rotate through all three projects across throughout the year.*

	<b>User Centred Design</b>	<b>Electronic Organ</b>	<b>Passive Amp</b>
<b>Content</b> Declarative knowledge 'I Know'	Understand the term User Centred Design.  Recognise isometric drawing techniques.  Understand how drawings can be enhanced by using different drawing techniques.  Understand the needs and wants of your target user.	Understand basic electronic components used in circuit.  Understand how colour codes are used to calculate the value of a resistor.  Understand the hazards and control measures associated with soldering.  Understand and recall a range of different tools and processes (Electronics).	Understand the characteristics of Art Deco design and apply them to your own designs.  Understand and recall a range of different tools and processes (Timbers).  Understand how to safely set up and use a pillar drill.  Understand the hazards and control measures associated with a range of different tools and equipment (Timbers).
<b>Skills</b> Procedural Knowledge 'I know how to'	Demonstrate skill using isometric drawing techniques.  Analyse existing products.  Evaluate existing products.  Demonstrate isometric drawing techniques with skill and accuracy.  Demonstrate different shading techniques.  Evaluate how successful your design is in meeting the needs of the target user.  Suggest improvements and developments to improve your design.  Extension - Demonstrate 3D modelling techniques (i.e card, blue foam, salt dough).	Demonstrate skilful soldering technique.  Manufacture a high-quality product with skill and accuracy.  Identify and calculate 4 band resistors using the colour code table.  Identify and calculate 5 band resistors using the colour code table.  Create designs to enhance the case and make the product more appealing.  Demonstrate creativity to design a case with a musical theme.  Effectively use block colours and shapes to produce vinyl stickers.  Demonstrate safe and skilful use of a range of basic tools (Electronics).  Manufacture a high-quality functioning product.	Evaluate products with an Art Deco design style.  Communicate a range of design ideas quickly and effectively using sketches.  Create bold and visually appealing ideas based on Art Deco design.  Communicate a developed design effectively using sketches and notes.  Demonstrate safe and skilful use of a range of tools.  Manufacture a high-quality functioning passive amp.  Demonstrate safe and appropriate use of a pillar drill.

<p><b>Strategies</b> Conditional Knowledge 'I know when to'</p>	<p>Apply user centred design strategies and isometric drawing techniques.</p> <p>Create original designs using user centred design strategies.</p> <p>Apply the needs and wants of you target user to your design ideas.</p>	<p>Apply a basic understanding of inputs and outputs.</p>	<p>Successfully apply an Art Deco design style to your design.</p> <p>Apply a comprehensive understanding of tools and equipment to select the appropriate tool for the task (Timbers).</p>
<p>Key Questions</p>	<p>What is user centred design? How can we apply user centred design strategies to everyday products? How can you effectively communicate design ideas using isometric drawing techniques?</p>	<p>How can basic electronic components be used to create a simple, functioning electronic product?  How can Ohm's law be used to calculate resistance?</p>	<p>What are the characteristics of Art Deco design? How can past Art Deco design influence present day designs? How can timbers be used effectively in a functioning product (Passive Amp)?</p>
<p>Assessment topics</p>	<p>AO1 Investigate, AO2 Design &amp; Prototype, AO3 Analyse and Evaluate, AO4 Core Technical Skills – Isometric drawing technique and applying user centred design strategies.</p>	<p>AO1 Investigate, AO2 Design &amp; Prototype, AO3 Analyse and Evaluate, AO4 Core Technical Skills – Independence, skills and understanding.</p>	<p>AO1 Investigate, AO2 Design &amp; Prototype, AO3 Analyse and Evaluate, AO4 Core Technical Skills – Independence, skills and understanding.</p>
<p>Cross curricular links/Character Education</p>	<p>Developing an awareness of user needs and capabilities.</p> <p>Understand that successful design must meet the needs of the end user.</p> <p>Maths - Terminology associated with isometric drawing and 3D shapes.</p> <p>Art - Sketching techniques/graphical communication.</p>	<p>Science - Understand Ohm's law and the relationship between voltage, resistance and current.</p> <p>Maths – Calculations <math>V=IR</math></p> <p>Health and Safety – Developing a working knowledge of safety.</p>	<p>Art – Art deco design movement.</p> <p>Understand how past design can influence present day design.</p> <p>Develop an understanding of the sustainability of timers (sourcing, reducing waste, recycling)</p> <p>Health and Safety – Developing a working knowledge of safety.</p>