

# Key Stage 4 Curriculum Map - Design & Technology and Resistant Materials

	Autumn Half Term 1	Autumn Half Term 2	Spring Half Term 1	Spring Half Term 2	Summer Half Term 1	Summer Half Term 2
Year 9	<p><b>Themes that will be covered :</b> A range of focus practical tasks to learn about designing, CAD and CAM, manufacture processes and design techniques.</p> <ul style="list-style-type: none"> <li>Techsoft 2D: how to produce and prepare drawings for a laser cutter.</li> <li>Methods for fabricating wood</li> </ul>	<p><b>Themes that will be covered :</b> A design and make task where students go through the whole process of designing and making product that can be made from pewter.</p> <ul style="list-style-type: none"> <li>Techsoft 2D: how to design and produce moulds that will work correctly.</li> <li>Produce a quality finished product based on their own designs.</li> </ul>	<p><b>Themes that will be covered :</b> A range of focussed practical tasks to learn about plastics and metals</p> <ul style="list-style-type: none"> <li>Design drawing and presentation : how to draw 2D and 3D and render</li> <li>Methods for bending and joining acrylic</li> <li>Laminating plywood</li> <li>Rivets, nuts and bolts</li> <li>Vacuum forming</li> </ul>	<p><b>Themes that will be covered :</b> A design and make task where students go through the whole process of designing and making a product that can be made from mild steel.</p> <p>Theory for materials and processes for making products in metals.</p>	<p><b>Themes that will be covered :</b> A range of lessons regarding Sustainability, recycling and looking after the environment.</p> <p>Theory for materials and processes for making products in woods.</p>	<p><b>Themes that will be covered :</b> A design and make task where students go through the whole process of designing and making a product that can be made from acrylic.</p> <p>Theory for materials and processes for making products in plastic.</p>
	<p><b>Key Assessments taking place :</b> Design and make a softwood storage container Design and make a laser cutter storage unit made from cardboard.</p>	<p><b>Key Assessments taking place :</b> Design and make a pewter cast product using the principles explained in the scheme.</p>	<p><b>Key Assessments taking place :</b> Make design drawings using 2 point perspective, isometric and orthographic techniques.</p>	<p><b>Key Assessments taking place :</b> Joining steel sheet and steel bar with rivets. Finishes for metal – Dip coating</p>	<p><b>Key Assessments taking place :</b> Theory content towards final GCSE exam in Year 11, but also if Year 9 do Mock exams towards the end of Year 9. Design and make a product from recycled materials.</p>	<p><b>Key Assessments taking place :</b> Design and make an acrylic phone holder. Processing plastics – line bender and dye sublimation.</p>
Year 10	<p><b>Themes that will be covered :</b> A design and make task where students go through the whole process of designing and making product that can be made from electronics.</p> <p>Theory for electronics and processes for making products using electronics.</p>	<p><b>Themes that will be covered :</b> Focussed practical task(s) to learn about the working properties and characteristics of wood.</p> <p>Theory for materials and processes for making products in wood.</p>	<p><b>Themes that will be covered :</b> Focussed practical task(s) to learn about the working properties and characteristics of metals.</p> <p>Theory for materials and processes for making products in metal.</p>	<p><b>Themes that will be covered :</b> Focussed practical task(s) to learn about the working properties and characteristics of plastics.</p> <p>Theory for materials and processes for making products in plastics.</p>	<p><b>Themes that will be covered :</b> Focussed practical task(s) to learn about smart materials.</p> <p>Theory for materials and processes for making products using smart materials.</p>	<p><b>Themes that will be covered :</b> Coursework (NEA) Design and Make Project</p> <ul style="list-style-type: none"> <li>Analysing existing products in terms of aesthetics, function and manufacture.</li> <li>Researching possible projects and the needs and wants of target markets.</li> <li>Researching trends</li> <li>Learning about design specifications</li> </ul>
	<p><b>Key Assessments taking place :</b> Design and make a game for a child that uses electronics.</p>	<p><b>Key Assessments taking place :</b> Design and make a product that uses a variety of pieces of wood to create a scaled version of a flat pack product.</p>	<p><b>Key Assessments taking place :</b> Design and make a product that can be used by a person of your choice that includes one or more of the processes demonstrated in these lessons.</p>	<p><b>Key Assessments taking place :</b> Design and make a product that can be used by a person of your choice that includes one or more of the processes demonstrated in these lessons.</p>	<p><b>Key Assessments taking place :</b> Design and make a product that uses smart material(s) to enable the product to function. Year 10 Mock exam.</p>	<p><b>Key Assessments taking place :</b> Coursework (NEA) – Research section.</p>

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Year 11	<p><b>Themes that will be covered :</b> Coursework (NEA) Design and Make Project</p> <ul style="list-style-type: none"> <li>• Designing products for specified criteria</li> <li>• Evaluating and developing designs</li> <li>• Modelling and testing designs</li> </ul> <p>Theory for materials and processes for making in woods.</p>	<p><b>Themes that will be covered :</b> Coursework (NEA) Design and Make Project</p> <ul style="list-style-type: none"> <li>• Producing final design details</li> <li>• Product manufacture</li> </ul> <p>Theory for materials and processes for making in metals.</p>	<p><b>Themes that will be covered :</b> Coursework (NEA) Design and Make Project</p> <ul style="list-style-type: none"> <li>• Product manufacture</li> <li>• Product testing, evaluation and modifications</li> </ul> <p>Theory for materials and processes for making in plastics.</p>	<p><b>Themes that will be covered :</b> Coursework (NEA) Design and Make Project</p> <ul style="list-style-type: none"> <li>• Completion of final stages / improvements / additions as needed</li> </ul> <p>Theory for environmental design and health and safety.</p>	<p><b>Themes that will be covered :</b> Revision for materials, processes, environmental design and health and safety.</p>	<p><b>Themes that will be covered :</b></p>
	<p><b>Key Assessments taking place :</b> Coursework (NEA) - Designing section</p>	<p><b>Key Assessments taking place :</b> Coursework (NEA) - Making section GCSE Mock exam 1</p>	<p><b>Key Assessments taking place :</b> Coursework (NEA) - Making section</p>	<p><b>Key Assessments taking place :</b> Coursework (NEA) - Evaluating section GCSE Mock exam 2</p>	<p><b>Key Assessments taking place :</b> GCSE examination</p>	<p><b>Key Assessments taking place :</b></p>