

## Curriculum Map

Design Curriculum - Overview						
Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
<p>In Year 7 Students will take part in a wide of creative and practical activities. They will build on previous knowledge of the Design and Technology curriculum at Key Stage 2.</p> <p>Students will familiarise themselves within how to work safely in the workshop and food classroom.</p> <p>They will rotate each term through Design and Technology, Food Technology and Graphic/Textile/Product Design.</p> <p>Students will be taught Technology twice per week.</p>	<p>In Year 8 Students will build on the knowledge gained in Year 7 by developing their knowledge and precision of working with tools, equipment and machinery.</p> <p>They will gain in confidence and be able to use a variety of pieces of equipment. This will include the laser cutter, pillar drill and an increased variety of hand tools.</p> <p>Students will develop their knowledge of joints, build on designing and making techniques and use CAD/CAM within projects.</p>	<p>In Year 9 students Building of previous learning in Y7/8 students will have the opportunity to improve their creative designing skills and practical abilities.</p> <p>Through project working they build on their understanding of the key concepts of D&amp;T: Brief, Research, Design, Develop, Make and Evaluate. This is a solid foundation for GCSE D&amp;T and A Level Product Design</p>	<p><b><u>AQA GCSE Design and Technology</u></b></p> <p>Within the GCSE Design and Technology course students will progressively learn content through exam style material and coursework-based units.</p> <p>In year 10, students will work on skills-based projects before starting their coursework in June of year 10</p> <p>Coursework will be continued throughout year 11 to include the production of a practical piece to fit the brief</p>	<p><b><u>AQA GCSE Design and Technology</u></b></p> <p>Students continue coursework from June of year 10</p> <p>Coursework will be continued throughout year 11 to include the production of a practical piece to fit the brief</p> <p><i>Examined content is taught from the beginning of year 10 into Year 11</i></p>	<p><b><u>A-Level AQA Design Technology</u></b></p> <p>A Level Design Technology students will build on previously learnt GCSE content by being introduced to more complex creative and technical aspects of the subject and design theory. Students will prepare for 2 examination papers as outlined below:</p> <p><b>PAPER 1:</b> Technical principles</p> <p><b>PAPER 2:</b> Designing and Making Principles</p>	<p><b><u>A-Level AQA Design Technology</u></b></p> <p>Students will focus on completing their coursework and preparing for the examination</p> <p><b><u>Unit 3.1 Technical Principles</u></b></p> <p><b><u>Unit 3.2.1 Designing and making principles</u></b></p>

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### Curriculum – Topic Sequencing

Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13
<p>Students will research: product analysis, client profiling, understanding user needs, solve their own design problems and understand how to reformulate problems given to them develop specs to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations. Use a variety of approaches: biomimicry and user-centred design, to generate creative ideas and avoid stereotypical responses. Develop</p>	<p><b><u>R1 Sustainable Architecture</u></b></p> <p><b>Sustainability</b> Types of sustainable architecture</p> <p>Biomimicry Researching design context How buildings impact on the environment Architecture Design</p> <p>Analysis Specification Sketching ideas Prototyping their design ideas. CAD/CAM, students will draw their ideas on CAD and then cut out on the laser cutter</p> <p>Modelling</p>	<p><b><u>Rotation 1 NEA independent study</u></b></p> <p>Practical tests 2D and 3D drawing</p> <p>CNC the use of incorporating laser cut work into aspects of project</p> <p>Card modelling and development of initial concepts</p> <p>The shading processes using rendering and fine line add texture and surface finish to drawings</p>	<p><b>Design and Technology Year 10</b></p> <p>Gardeners Trowel Project (core technical and specialist technical and designing and making principles)</p> <p>Substantial design and make mock project (core, specialist and design and making principles) Theory work will be covered weekly from Autumn term 2 and will cover the following topics: new and emerging technologies energy generation and storage developments in new materials</p>	<p><b>Design and Technology Year 11</b></p> <p>Non Examination Assessment (NEA)</p> <ul style="list-style-type: none"> <li>• Substantial design and make task</li> </ul> <p>Assessment criteria:</p> <ul style="list-style-type: none"> <li>• Identifying and investigating design possibilities</li> <li>• Producing a design brief and specification</li> <li>• Generating design ideas</li> <li>• Developing design ideas</li> <li>• Realising design ideas</li> <li>• Analysing &amp; evaluating Exam revision</li> </ul> <p>Covering the core technical, specialist technical</p>	<p><b>Term 1</b> Students to undertake laminated chair project</p> <p><b>Term 2, 3</b> Students begin the NEA and complete the following sections of the NEA:</p> <p>SECTION A: Research SECTION B: Design brief and specification</p> <p><b>Term 4,5 6</b> SECTION C: Design ideas SECTION D: Design development and manufacture SECTION E: Evaluation and testing</p>	<p><b><u>Unit 3.1 Technical Principles</u></b></p> <p>3.1.1. Materials and their applications 3.1.2. Performance and characteristics of materials 3.1.3. Enhancement of materials 3.1.4. Forming redistribution and addition processes 3.1.5. The use of finishes 3.1.6. Modern industrial and commercial practice 3.1.7. Digital design and manufacture</p>

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and communicate design ideas using annotated sketches, detailed plans, 2D and 3D modelling.	Evaluating		systems approach to designing mechanical devices materials and their working properties	and designing and making principles.		
<p><b><u>Rotation - Maze</u></b></p> <p>Research and analysis of existing products using ACCESS FM.</p> <p>Bauhaus design movement.</p> <p>Introduction to computer aided design and computer aided manufacture.</p> <p>Card modelling.</p> <p>Introduction to properties of wood and sustainability.</p> <p>Health and safety in the workshop.</p>	<p><b><u>Rotation – Biomimicry lamp</u></b></p> <p>Biomimicry – what is it and how has it influenced design.</p> <p>Research and analysis of existing products using ACCESS FM.</p> <p>Mood boards . 2D sketching.</p> <p>Card modelling.</p> <p>Properties of metal.</p> <p>Sustainability and the 3R's.</p> <p>Manufacture of lamp – cutting and folding.</p>	<p>3D Computer Aided Design is used as a creative tool</p> <p>Google sketch up is an example of 3D CAD that is used to make scratch products.</p> <p>Google sketch up can be used to add perspective, proportion scales, colour to 3D CAD models.</p> <p>Properties of wood</p> <p>Health and safety of tools and machines</p> <p>Processes of cutting, shaping, wasting and finishing wood</p>		<p><b><u>Exam Theory</u></b></p> <p>Unit 1 covers industry and enterprise, sustainability, industry, customers and design decisions</p> <p>Unit 2 covers energy, smart, modern and composite materials, systems and mechanisms</p> <p>Unit 3 covers materials and their properties. The main categories are papers and boards, timbers, polymers, metals and textiles</p> <p>Unit 4 covers forces, functionality, environmental issues and scales of production</p>		<p>3.1.8. The requirements for product design and manufacture</p> <p>3.1.9. Health and safety</p> <p>3.1.10. Protecting designs and intellectual property</p> <p>3.1.11. Design for manufacturing, repair and disposal</p> <p>3.1.12. Feasibility studies</p> <p>3.1.13. Enterprise and marketing in the development of product</p> <p>3.1.14. Design communication</p>

## Curriculum Map

<p>Hand tools – bench hook, tenon saw, pillar drill, screwdriver</p> <p><i>Maze Packaging</i></p> <p>Typography</p> <p>Colour theory</p> <p>Nets</p> <p>Evaluation</p>	<p>Introduction to electronics – circuits, soldering.</p> <p>Modelling, testing and evaluation.</p>			<p>Unit 5 covers one material in depth</p> <p>Unit 6 covers design strategy, communication techniques and the work of others</p>		
		<p>Measuring and precision are important when constructing products.</p> <p>Hand tools, including tenon saw, coping saw, ruler, tri-square, bench-hook</p>				<p><b><u>Unit 3.2.1 Designing and making principles</u></b></p> <p>3.2.1 Design methods and processes</p> <p>3.2.2 Design theory</p> <p>3.2.3 How Technology and cultural changes can impact on the work of designers</p>

## Curriculum Map

		<p>Surface finish techniques including file, sander, glass paper, paint, stain/ink and vinyl.</p> <p>Importance of prototyping</p> <p>Importance of evaluation to refine design</p>				<p>3.2.4 Design processes</p> <p>3.2.5 Critical analysis and evaluation</p> <p>3.2.6 Selecting appropriate tools equipment and processes</p> <p>3.2.7 Accuracy in design and manufacture</p> <p>3.2.8 Responsible design</p> <p>3.2.9 Design for manufacture and project management</p> <p>3.2.10 National and international standards in product design</p>
		<p><b>Rotation 2</b></p> <p><b>Wooden jewellery box</b></p> <p>Materials – properties, environmental issues and design choices</p>				

## Curriculum Map

		<p>Using tools and equipment with skill :</p> <p>Tenon and coping saw, marking gauge, tri- square, bench hook, mallet, hammer, nails, wood glue, rasp, sanding paper, bradawl, steel rule, screwdriver, dovetail template, screws, chisel</p> <p>Quality control</p> <p>Installing hinges and fasteners</p> <p>Using templates for accuracy</p> <p>Accuracy in making</p>				
		<p>Surface finish techniques</p> <p>Laser cutter for etching designs</p> <p>Manufacturing plans</p>				

# Curriculum Map



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