



### Learning Aims and Curriculum Intent:

Design and Technology offers a broad and inclusive curriculum that has been meticulously designed for our GCSE course. This course is split into two; the technical principles, worth 50%, which is covered as part of a set of designated theoretical lessons, and the design and making principles, worth 50%, which is a compilation of mini projects. Pupils are expected to undergo a design process and ultimately design and manufacture high-quality product solutions for a specific client of their choice. The practical outcome is complemented with an electronic design portfolio, showcasing an array of skills from analysis to research iterative design to prototype modelling and conducting a vast number of tests with a detailed evaluation.

Term	Technical Principles	Design and Making Principles	Skills	Assessment
Michaelmas	<p><b>Core Technical Principles 3.1:</b></p> <ul style="list-style-type: none"> <li>New and emerging technologies               <ul style="list-style-type: none"> <li>Industry and enterprise</li> <li>Sustainability and the environment</li> <li>People, culture and society</li> <li>Production Techniques and systems</li> <li>Informing Design Decisions</li> </ul> </li> <li>Energy generation and storage</li> <li>Developments in new materials               <ul style="list-style-type: none"> <li>Modern materials</li> <li>Smart materials</li> <li>Composite and Technical Textiles</li> </ul> </li> <li>Systems approach to designing</li> <li>Electronic systems Processing</li> </ul>	<p>1) <b>How can products be designed with an increased efficiency in materials and manufacturing techniques?</b></p> <ul style="list-style-type: none"> <li>Dual Function Lighting</li> </ul>	<ul style="list-style-type: none"> <li>Drawn design, development, and presentation.</li> <li>Primary research pages; market research, product analysis</li> <li>Prototype modelling using different materials, using workshop tools / equipment.</li> <li>Manufacturing a high-quality product solution.</li> <li>Specialist Technical processes and techniques, manipulation of materials.</li> </ul>	<ul style="list-style-type: none"> <li>Portfolio Pages including;               <ul style="list-style-type: none"> <li>Initial sketches</li> <li>Design development and iteration</li> <li>Market Research</li> <li>Manufacturing a high-quality product solution</li> <li>Personal and client Evaluation</li> </ul> </li> <li>Retrieval quizzes to build knowledge acquisition, understanding and retention.</li> <li>Ongoing holistic assessment via live marking, questioning, feedback and active oracy.</li> </ul>
Lent	<p><b>Core Technical Principles:</b></p> <ul style="list-style-type: none"> <li>Mechanical devices</li> <li>Materials and their working properties               <ul style="list-style-type: none"> <li>Papers and boards</li> <li>Natural and manufactured timbers</li> <li>Metals and alloys</li> <li>Polymers</li> <li>Textiles</li> </ul> </li> </ul> <p><b>Specialist Technical Principles 3.2: Timber Based Materials</b></p> <ul style="list-style-type: none"> <li>Selection of materials or components</li> <li>Forces and stresses</li> <li>Ecological and Social footprint</li> <li>Using and working materials</li> <li>Specialist Techniques and processes</li> <li>Surface treatments and finishes.</li> </ul>	<p>2) <b>How can memories be captured using both traditional and modern manufacturing techniques?</b></p> <ul style="list-style-type: none"> <li>3D photo Frame</li> </ul>	<ul style="list-style-type: none"> <li>Primary research pages; market research, product disassembly</li> <li>Presentation, layout and visual communication of ideas from initial thoughts through to final designs.</li> <li>Prototype modelling using different materials, using workshop tools / equipment.</li> <li>Technical drawing, 2-point perspective, Oblique, Isometric, Orthographic, Working Drawings</li> <li>Manufacturing a high-quality product solution. Using modern and traditional joinery skills</li> </ul>	<ul style="list-style-type: none"> <li>Portfolio Pages including;               <ul style="list-style-type: none"> <li>Initial sketches</li> <li>Design development and iteration</li> <li>Market Research</li> <li>Manufacturing a high-quality product solution</li> <li>Personal and client Evaluation</li> </ul> </li> <li>Retrieval quizzes to build knowledge acquisition, understanding and retention.</li> <li>Ongoing holistic assessment via live marking, questioning, feedback and active oracy.</li> </ul>

<b>Trinity</b>	<b>End of Year Exam and Feedback</b>	<p><b>1) How effective is communication when speech / language is removed?</b></p> <ul style="list-style-type: none"> <li>CAD / CAM</li> <li>Drawing Communication</li> <li>NEA Launch June 1<sup>st</sup> 2023</li> </ul>	<ul style="list-style-type: none"> <li>Drawing parts, assembling and rendering designs in CAD.</li> <li>Producing technical, third-angle projections of designs.</li> <li>Creating designs in orthographic, isometric, and perspective drawings.</li> <li>Understanding the assessment criteria for live NEA.</li> </ul>	<ul style="list-style-type: none"> <li>Portfolio Pages including; <ul style="list-style-type: none"> <li>CAD Part drawings</li> <li>CAD Assembly</li> <li>CAD Final Render</li> <li>CAD Working Drawing</li> <li>Hand drawn designs in isometric and perspective drawings.</li> </ul> </li> </ul>
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<b>Examples of Homework</b>	Task Analysis – investigating design briefs and visual communication Primary Product Analysis – analysing real world products, evaluation function, aesthetics, etc, disassembly for understanding	
<b>Key terminology</b>	Dual-Function, Materials, Manufacturing, Industry Standard, Quality Assurance, Quality Control, Laser Cutting, 3D Printing, Bespoke, One-Off, Iterative, Scales of Production, Finish, Aesthetics, Ergonomics, Anthropometrics, Client, Safety Features, Evaluation, Analysis.	
<b>Super-curricular enrichment and scholarly extension</b>	<p><b>Read:</b> Guardian Design Long Reads, How Design Makes the World (Berkun, S. 2020),</p> <p><b>Watch:</b> How its Made, Design in a Nutshell (<a href="#">The Open University</a>)</p> <p><b>Listen:</b> Design Better (The Curiosity Department), 99% Invisible, Monocle on Design</p> <p><b>Visit:</b> Design Museum; V&amp;A South Kensington; V&amp;A Bethnal Green; Design Shops – Conran Shop, Monocle, twentytwentyone, etc. London Design Festival</p>	
<b>Useful websites</b>	<a href="#">GCSE Design and Technology - AQA - BBC Bitesize</a> <a href="#">Dezeen   architecture and design magazine</a>	
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