

Year 8 Technology Sequence



	Content Taught	National Curriculum	Essential Knowledge	Assessment	Rationale
Year 8					
HT1 - HT6	<ul style="list-style-type: none"> Depending on student rotation Students design more complex products considering other users (Ergonomic Design and Anthropometric Data). Students to engineer products with greater accuracy. 				
HT1 - HT6	<p>Students study a 12-week programme focusing on Prototypes. This is delivered through the following project:</p> <p>Designing and Modelling Prototypes - Mobile Phone Project</p>	<p>Design</p> <p>identify and solve their own design problems and understand how to reformulate problems given to them (All Projects)</p> <p>use a variety of approaches [for example, biomimicry and user-centred design] to generate creative ideas and avoid stereotypical responses</p>	<p>Learning Opportunities:</p> <p>Materials and Making Selection of Materials (Card and Paper) 2D and 3D Graphics, Joining Materials Marking out Tools, Equipment 2D & 3D Model Making</p> <p>Students investigate the essential knowledge behind successful prototypes, e.g. incorporating and considering ergonomics and functionality etc...</p>	<p>Formative assessment is used throughout the project both practically and in terms of theoretical knowledge, to assist student development.</p> <p>Summative Assessment of Theory work (End of topic Test), Design work and Practical Work takes place at the end of the unit.</p>	<p>The essential drawing skills and modelling skills in year 7 are significantly built upon in this project focusing on prototypes. More creative and complex designs that meet the needs of consumers both build on previous knowledge and introduce new elements of inclusive design. Elements such as ergonomics and anthropometrics are investigated in detail. This will allow students to bring this key essential knowledge forward into successful and carefully considered future designing manufacturing</p>

		<p>Make</p> <p>Select from and use a wider, more complex range of materials, components, and ingredients, taking into account their properties</p> <p>Evaluate</p> <p>Test, evaluate and refine their ideas</p> <p>Analyse the work of past and present professionals and others to develop and broaden their understanding</p>	<p>Designing for 3rd party and inclusive design with a range of criteria is also covered, developing students understanding of client needs.</p> <p>Product investigation and implementation of research to develop models and prototypes is also developed.</p> <p>Accurate modelling and disciplinary skills are also delivered helping students to deliver accurate creative prototypes.</p> <p>Within this half term students will develop essential knowledge in lessons and 'bring it all together', by implementing it into a challenging and motivational design and make task.</p> <p>Essential knowledge reading for depth Ergonomics</p>	<p>Testing is cumulative as Knowledge Organiser tests incorporate questions from previous years + questions from previous topics</p>	<p>Projects in year 8 increase complexity and develop ideas in the design process also students are expected to work more independently. Tasks require students to use more technical equipment and materials.</p> <p>The essential knowledge developed in year 7 electronics is significantly deepened with</p>
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			<u>Anthropometrics</u>		<p>increasingly complex functionality for components and circuit design in the year 8 Night Light project. Students develop their ability to apply their new electronics understanding into a contemporary design that meets the needs of both brand ethos (IKEA) and also fulfils consumer requirements (Target Market). This allows students to take the essential knowledge learnt into future projects that incorporate, electronics, branding and consumer needs in Year 9 and beyond.</p> <p>Projects in year 8 increase complexity and develop ideas in the design process also students are expected to work more independently. Tasks require students to use more technical equipment and materials.</p>
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					<p>The essential knowledge developed in year 7 Materials is significantly deepened with the introduction of Metals in the wind turbine project. This projects introduces students to designing and manufacturing with metal the essential knowledge of origins, working properties etc.. are applied when designing and manufacturing. Working practically with metal, is new to students and develops key techniques and fundamental understanding that can be implemented into materials projects in year 9 and beyond, including environmental considerations.</p>
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					Knowledge and understanding of year 7 structures is also significantly deepened with students applying prior knowledge to a new material and the design/making challenges that this brings. Once understood this will allow students to take concepts forward confidently into future design challenges.
HT1 - HT6	<p>Students study a 12-week programme focusing on Electronics. This is delivered through the following project:</p> <p>IKEA - Night light project</p>	<p>Design Identify and solve their own design problems and understand how to reformulate problems given to them</p> <p>Make Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture</p> <p>Evaluate Analyse the work of past and present professionals and others to develop</p>	<p><u>Materials and Making</u> Selection of Materials (Electronic components and HIPS or Plywood) Net Diagrams, Joining Materials Marking out Tools, Equipment Use of CAD</p> <p><u>Electronics</u> Types of Electronic Components Types of Sensors & Sensor Circuits. Where are Sensors used? Calculation of Resistance in a simple circuit</p> <p>The essential skills of designing for a major client, understanding brand ethos, producing contemporary designs</p>		

		<p>and broaden their understanding</p> <p>Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists</p>	<p>in keeping with that ethos, are all covered in the delivery of this project</p> <p>Essential electronics knowledge is developed with more in depth concepts covered, so that students can apply more technical understanding into the project.</p> <p>Within this half term students will develop essential knowledge in lessons and 'bring it all together', by implementing it into a challenging and motivational design and make task.</p> <p>Essential knowledge reading for depth PCB's</p>		
HT1 - HT6	<p>Students study a 12-week programme focusing on Metals. This is delivered through the following project:</p> <p>Wind Turbine Project</p>	<p>Design</p> <p>Use research and exploration, such as the study of different cultures, to identify and</p>	<p><u>MAKING PRINCIPALS</u></p> <p>Selection of Materials Tolerances and Allowances Marking out Specialist Tools and Techniques</p>		

		<p>understand user needs. Identify and solve their own design problems and understand how to reformulate problems given to them</p> <p>Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations (KS3 Materials Projects)</p> <p>Make Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture</p> <p>Evaluate</p>	<p>Surface treatment and Finishes <u>Metal Based Materials</u> Sources Origins and Properties Working with Metals Commercial Manufacturing and Quality Control</p> <p>Students investigate where our Metal comes from, we look at original sources and the environmental impact of producing new metal rather than recycling.</p> <p>Different applications and suitability of a range of metals is covered ensuring essential knowledge is applied during the designing and making stages.</p> <p>Creativity when designing and the challenge of successful designing for a 3rd party is also covered ensuring the target market is considered.</p>		
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		<p>Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists</p>	<p>Accurate manufacturing tolerance and quality control are developed by students, helping to maintain a high standard of outcome</p> <p>Within this half term students will develop essential knowledge in lessons and 'bring it all together', by implementing it into a challenging and motivational design and make task.</p> <p>Essential knowledge reading for breadth Metals</p>		
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