

Year 9 Technology Sequence



	Content Taught	National Curriculum	Essential Knowledge	Assessment	Rationale
HT1 - HT6	Depending on student rotation Students to work with more complex designs, Engineering systems and materials.				
HT1 - HT6	<p>Students study a 12-week programme focusing on Design influences. This is delivered through the following project:</p> <p>Influential Designers & Design Movements - Point of sales display project</p>	<p>Design Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations</p> <p>identify and solve their own design problems and understand how to reformulate problems given to them</p> <p>Make</p>	<p><u>Materials and Making</u> Selection of Materials (Card and Paper) Net Diagrams, Joining Materials Marking out Tools, Equipment Use of CAD <u>Point of Sales Display</u> <u>Design a point if sales display for the New I Phone</u></p> <p>Students investigate essential knowledge in how designers and design movements have influenced and developed different aspects of society, from designers such as De Stijl or the</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>This project significantly deepens the essential knowledge of isometric, oblique and orthographic designing from year 8. It Introduces designers and design movements adding breadth to student understanding. Using papers and boards the learners will develop their approach to generate creative ideas using annotated sketches and modelling techniques to produce products that have been inspired by pioneering designers and design movements, developing their essential</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>Analyse the work of past and present professionals and others to develop and broaden their understanding</p>	<p>Memphis Design Movement to more modern influences such as Dyson and Apple.</p> <p>Students will take inspiration from influential design movements and be inspired by the key features within those designs when producing their ideas for a phone case and point of sale display</p> <p>Essential designing and drawing techniques are covered so students can produce high quality designs in a variety of styles and media.</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>Testing is cumulative as Knowledge Organiser tests incorporate questions from previous years + questions from previous topics</p>	<p>knowledge of culture capital. This will allow student to take this fundamental understanding forward into Design Technology projects involving creative inspirational designing in future years.</p>
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			Essential knowledge reading for breadth Design Movements		
HT1 – HT6	Students study a 12-week programme focusing on Engineering. This is delivered through the following project: Designer Jewelry Project	<p>Design Use research and exploration, such as the study of different cultures, to identify and understand user needs. 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</p>	<p>MAKING PRINCIPALS Selection of Materials Reading Engineering Drawings Tolerances and Allowances Marking out Specialist Tools and Techniques Surface Treatment and Finishes <u>Engineering</u> The Engineered World Sectors and Products Communication Manufacturing Methods Sustainable Futures</p> <p>Casting and mass production techniques are delivered in this introduction to engineering project, giving students an opportunity to discover mould/pattern manufacturing and industrial techniques in the workshop.</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>Testing is cumulative as Knowledge Organiser tests incorporate questions from previous years + questions from previous topics</p>	<p>The introduction of an engineering project in year 9 combines elements learnt in other topics previously taught such as designing for a client but introduces new elements of Engineering principals not previously covered. Students will discover how to use their knowledge to solve engineering problems and interpret engineering drawings to produce a successful product. They will also work practically creating moulds for casting and the casting process itself, incorporating all of the technical understanding and Health & Safety requirements. This will allow a significant level of understanding to be taken forward into future engineering projects concerning designing patterns & moulds for casting in future Engineering topics.</p>

		others to develop and broaden their understanding	<p>Clients' needs are investigated in detail and brand identity is incorporated into student designing and manufacturing.</p> <p>Essential materials knowledge is further developed with the introduction of pewter for the casting process.</p> <p>CAD CAM is also introduced to students developing real world opportunities and understanding, in terms of computer aided design and computer aided manufacture for mould/pattern production.</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</p>		
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			<p>motivational design and make task.</p> <p>Essential knowledge reading for depth Casting</p>		
HT1 – HT6	<p>Students study a 12-week programme focusing on Polymers. This is delivered through the following project:</p> <p>Mechanical Toy Project</p>	<p>Design Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations</p> <p>Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations</p> <p>Make select from and use specialist tools, techniques, processes, equipment and machinery precisely,</p>	<p><u>MAKING PRINCIPALS</u> Selection of Materials Tolerances and Allowances Marking out Specialist Tools and Techniques Surface treatment and Finishes <u>POLYMERS</u> Sources Origins and Properties Working with Polymers Commercial Manufacturing and Quality Control</p> <p>Polymers, where they come from, how do we use them, the environmental impact and how we can manage this, are all covered in this project, ensuring students can apply this understanding into designing and making but also their daily life.</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>Testing is cumulative as Knowledge Organiser tests incorporate questions from previous years +</p>	<p>The essential knowledge developed in year 8 Materials is significantly deepened with the introduction of Polymers in the Mechanical Toy project. This project introduces students to designing and manufacturing with Plastics, the essential knowledge of origins, working properties and the responsibility we have when making products from this material, helping to understanding wider environmental connotations. Working practically with Plastic, is new to students and develops key techniques and fundamental understanding that can be implemented into materials projects in year KS4 and beyond, including environmental considerations.</p> <p>New content of Mechanisms is introduced</p>

		<p>including computer-aided manufacture</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>e.g. single use plastics and biodegradable polymers.</p> <p>Mechanical principals and mechanisms essential knowledge are delivered so students can apply technical understanding into their design and manufacturing processes.</p> <p>Creativity when designing and the challenge of successful designing for a 3rd party is further developed ensuring the target market is considered and designs meet the needs of the consumer</p> <p>Accurate manufacturing tolerance and quality control are further developed by students, helping to maintain a high standard of outcome in both designing and making.</p>	<p>questions from previous topics</p>	<p>at this stage, as the project gives students an opportunity to see how they can incorporate mechanical movement into their design. This gives students a platform to turn theoretical knowledge into practical applications in a creative way. It also allows this knowledge to be taken forward into future projects in both Design Technology & Engineering</p>
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