


<p>Year: 11 Subject: Design & Technology</p>	<p>Curriculum Intent: Students will build upon the skills and activities that they learned in Years 9 and 10, reinforcing their practical and theoretical knowledge. This is achieved through their NEA, theory based lessons and homework. Students will explain and discuss their understanding of what they have read, observed, and practiced justifying the methods and techniques used through their NEA coursework. Their knowledge will be tested through 'POP' tests and their PPE examinations.</p>					
	<p>Term 1</p>		<p>Term 2</p>		<p>Term 3</p>	
<p>Topic Titles (in order of delivery)</p>	<p>1. NEA</p> <p>NEA - Reviewing Section A and B</p> <p>NEA – Writing a design specification using research.</p> <p>Theory – drawing techniques – isometric, orthographic.</p> <p>Strategies for coming up with ideas – using existing products, merging ideas, natural forms etc.</p> <p>NEA – initial ideas</p> <p>NEA – importance of annotation and linking initial ideas to design specification</p> <p>NEA – development of ideas</p> <p>NEA – modelling techniques –</p>	<p>1. NEA</p> <p>2. Preparation for the PPE's</p> <p>NEA – final developed design – refer annotation back to the specification highlighting innovation and creativity in the ideas. Make links back to the research completed.</p> <p>NEA – Final isometric design using CAD for presentation. Annotation to include links back to specification.</p> <p>NEA – Final orthographic design. Measurements must be accurate and realistic – informed from modelling.</p> <p>NEA - Manufacturing specification - step</p>	<p>1. Review of PPE's</p> <p>2. NEA</p> <p>NEA – ordering of materials – marking out and double checking before cutting. Anything that involves CAM – 2D design/Fusion 360.</p> <p>NEA – manufacturing the product, taking photos at regular intervals. Ensure quality control checks are taking place.</p> <p>NEA – carry out at least one test of the product and complete write up. Can it be compared to an existing product? How is the success measured?</p> <p>NEA – testing the product and write</p>	<p>1. Completion of NEA</p> <p>2. Exam Preparation</p> <p>NEA – further modifications – high quality drawings and links to commercial manufacture. Detailed and informative annotation.</p> <p>NEA – changes/ tweaks to project based on feedback. Signing of candidate forms etc.</p> <p>Theory – sources of polymers. From oil to workable material. Categories of plastic and examples in each. Manufacturing techniques for plastic e.g., injection moulding.</p>	<p>1. Exam Preparation</p> <p>RAG of exam content.</p> <p>General exam technique e.g., command words, highlighting key words.</p> <p>Selected weak area revision – exam questions and exam technique</p> <p>Walking/talking paper – core technical principles</p> <p>Walking/talking paper – specialist technical principles</p> <p>Walking/talking – designing and making principles</p>	<p>1. Course Finished</p>

	<p>card/straws/play dough etc.</p> <p>NEA – modelling of developed idea. High quality photos and clear outline of why modelling is important. Key changes based on models – think mechanisms, aesthetics etc.</p>	<p>by step for making the product.</p> <p>PPE Theory – sources of polymers. From oil to workable material. Categories of plastic and examples in each. Manufacturing techniques for plastic e.g., injection moulding.</p> <p>PPE Theory – sources of metal. From ore to a workable material. Categories of metal and manufacturing techniques e.g., casting.</p> <p>PPE Theory – scales of production. Link to plastics, wood and metal product. E.g., would you use injection moulding for a one-off product.</p> <p>PPE Theory - Human Factors & Environmental Issues.</p>	<p>up. E.g., stress tests, drop tests, waterproof etc.</p> <p>NEA – write up of third-party evaluation with photos. Comparison to existing products.</p> <p>NEA – evaluation of product against specification. Table format with a numerical value to make it comparable to an existing product.</p> <p>NEA – evaluation of product against specification. Table format with a numerical value to make it comparable to an existing product.</p> <p>NEA – evaluation of product against specification. Table format with a numerical value to make it comparable to an existing product.</p>	<p>Theory – exam question based on sourcing and manufacturing wood and plastic. Use notes and sketches – exam technique for higher end of marks. Use of key words e.g., labelling of injection moulding process.</p> <p>Theory – sources of metal. From ore to a workable material. Categories of metal and manufacturing techniques e.g., casting.</p> <p>Theory – scales of production. Link to plastics, wood and metal product. E.g., would you use injection moulding for a one-off product.</p> <p>Theory – assessment of specialist technical principles questions. Add to answers. How can your answer be improved? Show</p>		
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			NEA – further modifications – high quality drawings and links to commercial manufacture.	good answers to group.		
Key knowledge / Retrieval topics	<p>Delivered Through NEA:</p> <p>Core Technical Principles</p> <ul style="list-style-type: none"> • new and emerging technologies • developments in new materials • systems approach to designing <p>Specialist Technical Principles</p> <ul style="list-style-type: none"> • selection of materials or components • ecological and social footprint • using and working with materials • surface treatments and finishes. <p>Designing & Making Principles</p> <ul style="list-style-type: none"> • investigation, primary and secondary data • design strategies 	<p>Delivered Through NEA:</p> <p>Core Technical Principles</p> <ul style="list-style-type: none"> • systems approach to designing • materials and their working properties <p>Specialist Technical Principles</p> <ul style="list-style-type: none"> • selection of materials or components • using and working with materials • stock forms, types and sizes • scales of production • specialist techniques and processes • surface treatments and finishes. <p>Designing & Making Principles</p> <ul style="list-style-type: none"> • prototype development 	<p>Delivered Through NEA:</p> <p>Core Technical Principles</p> <ul style="list-style-type: none"> • new and emerging technologies • energy generation and storage • developments in new materials • systems approach to designing • mechanical devices • materials and their working properties <p>Specialist Technical Principles</p> <ul style="list-style-type: none"> • selection of materials or components • using and working with materials • stock forms, types and sizes • scales of production • specialist techniques and processes 	<p>Reviewing Through Question Analysis and Exam Practice:</p> <p>Core Technical Principles</p> <ul style="list-style-type: none"> • new and emerging technologies • energy generation and storage • developments in new materials <p>Specialist Technical Principles</p> <ul style="list-style-type: none"> • forces and stresses • ecological and social footprint • sources and origins • scales of production • specialist techniques and processes <p>Designing & Making Principles</p> <ul style="list-style-type: none"> • environmental, social and economic challenge 	<p>Reviewing Through Question Analysis and Exam Practice:</p> <p>Core Technical Principles</p> <p>Specialist Technical Principles</p> <p>Designing & Making Principles</p>	

	<ul style="list-style-type: none"> • communication of design ideas • prototype development • selection of materials and components 	<ul style="list-style-type: none"> • selection of materials and components • tolerances 	<ul style="list-style-type: none"> • surface treatments and finishes. <p>Designing & Making Principles</p> <ul style="list-style-type: none"> • selection of materials and components • tolerances • material management • specialist tools and equipment • specialist techniques and processes. 	<ul style="list-style-type: none"> • the work of others • specialist tools and equipment • specialist techniques and processes. 		
Understanding / Sequence of delivery	<p>Continuation of NEA from chosen topic in Year 10.</p> <p>AO1: Identify, investigate and outline design possibilities to address needs and wants.</p>	<p>AO2: Design and make prototypes that are fit for purpose.</p> <p>AO3: Analyse and evaluate:</p> <ul style="list-style-type: none"> • design decisions and outcomes, including for prototypes made by themselves and others • wider issues in design and technology. 	<p>AO2: Design and make prototypes that are fit for purpose.</p> <p>AO3: Analyse and evaluate:</p> <ul style="list-style-type: none"> • wider issues in design and technology. 	<p>AO4: Demonstrate and apply knowledge and understanding of:</p> <ul style="list-style-type: none"> • technical principles • designing and making principles. 	<p>Summarise and review content in preparation for exams.</p>	
Assessment	Grade: NEA RAG Feedback for individuals.	Grade: NEA RAG Feedback for individuals.	Grade: NEA RAG Feedback for individuals.	Grade: NEA RAG Feedback for individuals.	Walking / Talking Mock	

	Generic Feedback	Generic Feedback	Generic Feedback	Generic Feedback	GCSE questions, marked using mark scheme.	
	All in line with Exam Board	All in line with Exam Board	All in line with Exam Board	All in line with Exam Board		
	POP test using past GCSE questions, marked using mark scheme. Grades predicted using 2020 grade boundaries.	PPE Nov/Dec 2020 paper marked, and grades awarded using Exam Board mark scheme and 2020 grade boundaries.	POP test using past GCSE questions, marked using mark scheme. Grades predicted using 2020 grade boundaries.	POP test using past GCSE questions, marked using mark scheme. Grades predicted using 2020 grade boundaries.		