



**KEY STAGE 4 – YEAR 11 – DT
CURRICULUM MAP**

Autumn Term		Spring Term		Summer Term	
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Themes	Key Themes	Key Themes	Key Themes	Key Themes	Key Themes
NEA 1.1 Investigation of needs and research. 1.2 Product specification. 2.1 Design ideas.	2.2 Review of initial ideas. 2.3 Development of design ideas into a chosen design. 2.5 Review of chosen Design.	3.1 Manufacture. 3.2 Quality and Accuracy.	4.1 – Testing & evaluation.	Exam preparation.	Exam preparation.
Assessment / Composite Tasks	Assessment / Composite Tasks	Assessment / Composite Tasks	Assessment / Composite Tasks	Assessment / Composite Tasks	Assessment / Composite Tasks
NEA assessment. Interim grading.	Trial exam 1. NEA assessment. Interim grading.	NEA assessment. Interim grading.	Trial exam 2. NEA assessment. Interim grading.	Final NEA assessment. Interim grading.	Terminal exam.



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SCHEME OF WORK

Autumn Half Term One: Key Theme –				
Intent	Implementation (T and L Pedagogy/components used)	Impact	Powerful Knowledge (terminology)	Personal Development
<p>NEA</p> <p>1.1 Investigation of needs and research</p> <p>1.2 Product specification</p> <p>2.1 Design ideas</p>	<p>1.1a Identify the needs of the end user.</p> <p>1.1b Outline a design problem from the context provided and identify a need for a product.</p> <p>1.1c Investigate existing products to inform the product specification for the prototype, from past and present designers.</p> <p>1.1d Carry out a range of research strategies to gather relevant information, including:</p> <ol style="list-style-type: none"> market research research into the context in which the prototype will be used research into other possible materials any sustainability issues that will be considered relevant. <p>1.2b Production of a product specification that includes statements that are technical, measurable and justified, and include consideration of:</p> <ol style="list-style-type: none"> form function user requirements performance requirements material and component requirements scale of production cost sustainability <p>1.2c Identification of criteria, which will be used to evaluate the success of the prototype.</p> <p>2.1a Production of a range of design ideas</p>		<p>Form - Why is the product shaped or styled as it is?</p> <p>Function - What does it do?</p> <p>Client and user - How does it meet the needs?</p> <p>Performance - How does it work? How does it do the job it was designed to do?</p> <p>Materials and Components - What materials/components / parts have they used and why</p> <p>Scale of Production and Cost - What scale of production has been used? How does this affect the overall cost?</p> <p>Sustainability - Has sustainability been taken into consideration?</p> <p>Aesthetics - How is it made to be aesthetically pleasing?</p> <p>Marketability - What makes this product different from anything else on the market?</p> <p>Consideration of Innovation - What elements of the product are innovative or move the product forward compared to the market?</p> <p>Statements that are technical and measurable and points should be fully justified wherever possible.</p> <p>When proposing and considering design ideas, consider the following issues:</p> <ul style="list-style-type: none"> Budget Aesthetics Cultural issues and Sustainability issues <p>They also need to explore different materials, components, processes and techniques. All of the above can be displayed through the use of detailed annotation to communicate knowledge and understanding relevant to the proposed design ideas.</p> <p>Reference the product specification in relation to how the proposed ideas address the individual points.</p> <p>Design strategies could include the use of images and simple blue foam 3D block modelling. Some digital manipulation of images in</p>	<p>We develop transferable skills to enable D&T students to face the demands of further and higher education, as well as the demands of the workplace.</p> <p>Cognitive skills</p> <ul style="list-style-type: none"> Non-routine problem solving – expert thinking, metacognition, creativity. Systems thinking – decision making and reasoning. Critical thinking – such as analysing, synthesising and reasoning skills. ICT literacy – access, manage, integrate, evaluate, construct and communicate.[3] <p>Interpersonal skills</p> <ul style="list-style-type: none"> Communication – active listening, oral communication, written communication, assertive communication and non-verbal communication. Relationship-building skills – teamwork, trust, intercultural sensitivity, service orientation, self-presentation, social influence, conflict resolution and negotiation. Collaborative problem solving – establishing and maintaining shared understanding, taking appropriate action, establishing and maintaining team organisation.



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	<p>that address the criteria in the design brief and product specification.</p> <p>2.1b Consideration of a range of issues when producing the design ideas, including:</p> <ol style="list-style-type: none"> budget aesthetics cultural issues sustainability issues. <p>2.1c Exploration of different design approaches, including:</p> <ol style="list-style-type: none"> materials components processes techniques. 		<p>photoshop could be carried out. A range of communication techniques could include dimensions, nets and developments and simple use of colour and thick and thin lines.</p> <p>Communication techniques and media to present the design ideas, including:</p> <ol style="list-style-type: none"> freehand sketching (2D and/or 3D) annotated sketches cut and paste techniques digital photography/media 3D models isometric and oblique projection perspective drawing orthographic and exploded views & assembly drawings system and schematic diagrams computer-aided design (2D and/or 3D) 	<p>Intrapersonal skills</p> <ul style="list-style-type: none"> Adaptability – ability and willingness to cope with the uncertain, handling work stress, adapting to different personalities, communication styles and cultures, and physical adaptability to various indoor and outdoor work environments. Self-management and self-development – ability to work remotely on NEA, work autonomously, be self-motivating and self-monitoring, willing and able to acquire new information and skills related to work.
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Autumn Half Term Two: Key Theme –

Intent	Implementation (T and L Pedagogy/components used)	Impact	Powerful Knowledge (terminology)	Personal Development
<p>2.2 Review of initial ideas</p> <p>2.3 Development of design ideas into a chosen design</p>	<p>2.2a Analysis and evaluation of how each design idea meets the design brief and product specification.</p> <p>2.2b Determine which designs follow the design brief and product specification and should be taken forward for development.</p> <p>2.2c Modification of design ideas to fit the design brief and product specification.</p> <p>2.3a Consideration of user group needs and preferences, of design ideas, conducting further research where necessary.</p> <p>2.3b Consideration of the design as a whole, rather than focusing on component parts in isolation.</p> <p>2.3c Modelling/simulation used to test the features of the design ideas.</p> <p>2.3d Analysis and evaluation of the design ideas, to inform choice as to the chosen design to take forward.</p> <p>2.3e Modification of design ideas to produce the</p>		<p>Undertake an analysis and evaluation of how each of their proposed design ideas meets or fails to meet the design brief and product specification. This should be an objective assessment taking in to account potential user views and feedback. When evaluating each idea, explain how and why each idea addressed the specification.</p> <p>Summarise the overall review before deciding which idea or combination of ideas should be carried forward for development. It is essential that the initial specification and design brief is used to lead the review process.</p> <p>Move the proposal forward through a process of iteration, continuing to consider the needs of the users, with additional research if necessary, to present a chosen design which meets the design brief and specification. Consider and develop the whole concept rather than focusing on component parts in isolation purely from a manufacturing perspective. Excellent opportunities for modelling and simulating ideas to test features of the developing solution. Iterative design should model and test ideas until they reach a final design proposal meeting the specification. Modelling can take many forms, but it should have a specific purpose related to the task. Modelling could be carried out using CAD, blue foam, papers and boards, resistant and compliant materials.</p>	<p>Calculation of quantities, measurement of materials and selection of components</p> <p>Classification of the types and properties of a range of materials</p> <p>Selection of materials and components based on ethical factors, taking into consideration the ecological</p>



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Spring Half Term Two: Key Theme –				
Intent	Implementation (T & L pedagogy used)	Impact	Powerful Knowledge (terminology)	Personal Development
4.1 – Testing & evaluation	<p>4.1a Analyse the prototype against the product specification by conducting a variety of tests under realistic conditions, to ensure fitness for purpose.</p> <p>4.1b Analyse the results of the prototype testing.</p> <p>4.1c Evaluate whether the prototype meets the product specification.</p> <p>4.1d Evaluate the sustainability of the final prototype by carrying out a life cycle assessment (LCA), in order to assess its impact on the environment.</p>		<p>Test and evaluate the prototype against the specification by conducting a variety of tests under realistic conditions showing how the prototype meets or fails to meet the intended use and whether it is fit for purpose. Testing technical and measurable specification points especially needs to be objective to draw appropriate conclusions such as the overall effectiveness of the prototype.</p> <p>Evaluate the sustainability of the prototype by carrying out a life cycle assessment (LCA). This will consider.</p> <p>Raw materials - What affect does the use of raw materials have on the environment?</p> <p>Material processing - What affect does materials processing have on the environment?</p> <p>Manufacture - What affect does the manufacturing of the prototype have on the environment?</p> <p>Distribution - What affect does the distribution of the prototype have on the environment?</p> <p>Product in use - What affect does the prototype have on the environment when inuse?</p> <p>Repair and maintenance - What affect does the repair and maintenance have on the environment once it has been manufactured?</p> <p>Disposal - What affect does the prototype have on the environment once it has been disposed of?</p> <p>Much of the testing should be evidenced through photographs, trials and user feedback.</p>	
Summer Half Term One: Key Theme –				
Intent	Implementation (T and L Pedagogy/components used)	Impact	Powerful Knowledge (terminology)	Personal Development
Exam preparation	Revisit syllabus plan from Yr 10 and complete any topics identified via review of trial exam data that require additional T&L.		<p>Use of past papers and examiners reports and mark schemes.</p> <p>Use of Seneca. Use of Focuselearning resources.</p> <p>Exploration of textbook topics from a range of published sources.</p>	
Summer Half Term Two: Key Theme –				
Intent	Implementation (T and L Pedagogy/components used)	Impact	Powerful Knowledge (terminology)	Personal Development
Summer exam	Study leave. Attend revision sessions and exam preparation events.			