


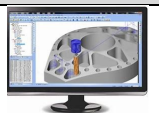











Key Stage 4 Curriculum Journey: (Subject)

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.

YEAR 10 CURRICULUM JOURNEY						
	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Topic						
	Mock NEA – Research	Mock NEA – Design Development	Mock NEA – Design Development & Manufacturing Planning	Mock NEA – Manufacture	Mock NEA Manufacture, Test & Evaluate	NEA Research
Key Knowledge, Skills & Understanding	<p>Knowledge <u>Designing Principles</u></p> <ul style="list-style-type: none"> Investigate sources of primary and secondary data and look at the work of others to examine influential designers and design companies. Recap design strategies to reinforce how to efficiently generate a range of designs. Communication of design ideas, covering a range of drawing styles. <p>Skills</p> <ul style="list-style-type: none"> Drawing techniques – 1-point, 2-point perspective, isometric, rendering skills 	<p>Knowledge <u>Emerging Technologies</u></p> <ul style="list-style-type: none"> Learn about the impact of new and emerging technologies on industry and enterprise and the effect that industry can have on the environment. <p>Skills</p> <ul style="list-style-type: none"> Design development Modelling techniques CAD – 3D design 	<p>Knowledge <u>Energy, materials, systems and devices</u></p> <ul style="list-style-type: none"> Learn about energy storage and developments in modern and smart materials. Learn about metals and alloys, their uses and properties. <p>Skills</p> <ul style="list-style-type: none"> Marking out, cutting, and sawing Finishing of timbers and plastics CAD – 2D Design 	<p>Knowledge</p> <ul style="list-style-type: none"> Learn about energy generation from finite and non-finite sources. Learn about modern & smart materials. Learn about electronic systems and mechanical devices. <p>Skills</p> <ul style="list-style-type: none"> Computer Aided Design Advanced drawing techniques – exploded views, orthographic drawing 	<p>Knowledge <u>Making Principles</u></p> <ul style="list-style-type: none"> Learn to analyse the functional need, cost and availability of materials required for prototype development using appropriate tolerances when working. Material management skills Specialist tools and equipment Surface treatments and finishes. <p>Skills</p> <ul style="list-style-type: none"> Independently manufacture prototypes using a range of materials and manufacturing techniques including CAM. 	<p>Knowledge <u>Exam</u></p> <ul style="list-style-type: none"> Apply their theoretical understanding of the range of theory covered to the written exam. <p>Skills</p> <ul style="list-style-type: none"> Students will be able to apply effective exam strategies to prepare for written exams and assessments. Conduct independently primary and secondary research using a range of sources. Analyse and disassemble products.
GCSE Assessment Objectives	<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>AO1: Identify, investigate and outline design possibilities to address needs and wants.</p> <p>AO4: Demonstrate and apply knowledge and understanding of:</p> <ul style="list-style-type: none"> technical principles designing and making principles. 	<p>AO2: Design and make prototypes that are fit for purpose.</p> <p>AO4: Demonstrate and apply knowledge and understanding of:</p> <ul style="list-style-type: none"> technical principles designing and making principles. 	<p>AO3: Analyse and evaluate: Design decisions and outcomes, including for prototypes made by themselves and others.</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>AO2: Design and make prototypes that are fit for purpose.</p> <p>AO4: Demonstrate and apply knowledge and understanding of:</p> <ul style="list-style-type: none"> technical principles designing and making principles. 	<p>AO1: Identify, investigate and outline design possibilities to address needs and wants.</p> <p>AO4: Demonstrate and apply knowledge and understanding of:</p> <ul style="list-style-type: none"> technical principles designing and making principles.
MAPs	Designing Principles MAP	Emerging Technologies Map	Industry & Enterprise MAP	Materials Map	Energy, materials, systems & devices MAP Mini quizzes and exam practice questions on a range of topics.	Mini quizzes and exam practice questions on a range of topics. Year 10 mock exam – 2 Hours





YEAR 11 CURRICULUM JOURNEY						
	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Topic						
	NEA – Research & Generating Ideas	NEA – Specification & Design Development	NEA – Design Development & Manufacture	NEA –Manufacture, Testing & Evaluation	GCSE Exam Preparation	
Key Knowledge, Skills & Understanding	<p>Knowledge</p> <ul style="list-style-type: none"> Revision of primary and secondary data, design strategies and the work of others. Selection of Materials, tools equipment and finishes. <p>Skills</p> <ul style="list-style-type: none"> Analyse and disassemble products. Use a variety of approaches, for example biomimicry and user-centred design, to generate creative ideas and avoid stereotypical responses. 	<p>Knowledge</p> <p>Revision of:</p> <ul style="list-style-type: none"> Specialist Timber Theory Materials Theory Emerging Technologies Energy, materials, systems and devices Designing Principles Making Principles <p>Skills</p> <ul style="list-style-type: none"> Write and justify a design specification. Develop and model their designs using a range of 3D prototyping methods. 	<p>Knowledge</p> <ul style="list-style-type: none"> Designing Principles Making Principles <p>Skills</p> <ul style="list-style-type: none"> Independently manufacture prototypes using a range of materials and manufacturing techniques. Use CAD/CAM to develop ideas. 	<p>Knowledge</p> <ul style="list-style-type: none"> Designing Principles Making Principles <p>Skills</p> <ul style="list-style-type: none"> Independently manufacture prototypes using a range of materials and manufacturing techniques. Evaluate and test their designs. 	<p>Knowledge</p> <p>Revision of:</p> <ul style="list-style-type: none"> Specialist Timber Theory Materials Theory Emerging Technologies Energy, materials, systems and devices Designing Principles Making Principles <p>Skills</p> <ul style="list-style-type: none"> Students will be able to apply effective exam strategies to prepare for written exams and assessments. 	
GCSE Assessment Objectives	<p>AO1: Identify, investigate, and outline design possibilities to address needs and wants.</p> <p>AO4: Demonstrate and apply knowledge and understanding of:</p> <ul style="list-style-type: none"> technical principles designing and making principles. 	<p>AO2: Design and make prototypes that are fit for purpose.</p> <p>AO4: Demonstrate and apply knowledge and understanding of:</p> <ul style="list-style-type: none"> technical principles designing and making principles. 	<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>AO4: Demonstrate and apply knowledge and understanding of:</p> <ul style="list-style-type: none"> technical principles designing and making principles. 	<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>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. 	
MAPs	Designing and Making Principles	Specialist Technical Principles Year 11 MOCK Exam – 2 Hours	Drawing Techniques MAP Core technical principles	Mini quizzes and exam practise questions on a range of topics. Year 11 GCSE Exam – 2 Hours	Mini quizzes and exam practise questions on a range of topics. Year 11 GCSE Exam – 2 Hours	

