

Curriculum Overview: Year 11 GCSE Design and Technology Resistant Materials

Rationale: NEA: Students are to continue working on their NEA from year 10. This includes: designing, testing, prototyping, making their final product and evaluating. These areas covered also link to the exam content.
Theory: Students will develop their understanding of the key areas of designing, including material areas, industrial processes, the wider impact products have in the world, the factors to be considered when designing new products and evaluating a range of products.
 This will then prepare students for their exam in late summer.

Term / Length of Unit	Outline	Assessment	Home Learning	Resources	Reading	Knowledge/Skills End Points
Autumn term 1 8 weeks	NEA: Section C & D: Developing design ideas. Work to include: initial design ideas, initial samples. Feedback from TMG, develop design ideas, developed sample, final design idea. Theory: design decisions and Maths in D&T.	Class feedback of progress. FAR assessment of HL tasks.	HL 1 – Differenced task based on materials. HL 1 Wk 2 – orthographic drawings HL 2 – Theory and exam style questions on planned obsolescence. HL 2 wk 2- Forces HL 3 – Product analysis linking to anthropometrics and ergonomics. HL 3 wk 2 – Production method definitions. HL 4 – Section A recap tasks (Half term HL)	Student Support sheets for NEA: Shared area: D&T: RM: NEA Specialist machinery needed for making samples and product. Computer rooms needed to type up NEA. Student resources: Worksheets and support sheets to be provided by teacher.	Knowledge Orgainser Revision booklet Sequence of practical tasks Research and write tasks. Power point information Key words	<ul style="list-style-type: none"> Developed designing skills Communication of design ideas Ability to evaluate and reflect on progress made Develop practical skills through sampling different techniques such as using specialist machinery and decorative techniques. Develop knowledge of construction and decorative techniques through testing ideas Analyse data from TMG to influence design ideas Developed understanding of how the environment is effected by the products we design, produce and dispose of. Gained understanding of how Maths is used in designing and manufacturing products. <p>End point: Completion of Section C & D</p>
Autumn term 2 8 weeks	NEA: Section E: Realising design ideas. Work to include: making of final product, photographs of making, diary of making and manufacturing specification. Theory: Material areas (Textiles, metals, polymers, timbers, paper and board), preparation for PPE 1	Class feedback of progress. PPE 1	HL 5 – Maths recap HL 5 wk 2 – Smart materials HL 6 – Revision clock for PPE 1		Knowledge Orgainser Revision booklet Sequence of practical tasks Research and write tasks. Power point information Key words	<ul style="list-style-type: none"> Understanding the key areas of a manufacturing specification Develop practical skills through sampling different techniques such as using specialist machinery and decorative techniques. Independent working Problem solving Securing knowledge of how the environment is effected by the products we design, produce and dispose of. How to decode the exam questions. <p>End point: Completion of Section E</p>
Spring term 1 6 weeks	NEA: Section F: Evaluation. Work to include: Evaluation against their design specification, evaluation and feedback from TMG (in situ) and Modifications made for mass production (including redesign). Theory: Feedback from PPE 1, Sustainable sources, fabric finishes, production aids, preparation for PPE 2	Class feedback of progress. Assessment of NEA folder.	HL 1: Section A exam style questions. – Mechanisms and motion focused. HL 2: Section B exam style questions. Printing methods. HL 3: Revision for PPE 2	Student Support sheets for NEA: Shared area: D&T: NEA Computer rooms needed to type up NEA. Teacher resources: Staff share: Design and Technology: RM: Year 11: PPE 2 Student resources: Worksheets and support sheets to be provided by teacher.	Knowledge Orgainser Revision booklet Sequence of practical tasks Research and write tasks. Power point information Key words	<ul style="list-style-type: none"> Evaluate the product made. Evaluate the design process they have gone through, focusing on their strengths and weaknesses. Securing knowledge of sustainable sources Securing knowledge of key production methods Developing understanding of the types finishes used in industry. How those finishes are applied and the properties they contain. <p>End point: Completion of Section F</p>
Spring term 2 6 weeks	PPE 2 Theory: Section A & B of exam content. Work to include: Recapping all material areas (Textiles, Timbers, electronics, paper and board and polymers). Including the industrial processes used, uses for each material and finishes applied.	PPE 2 FAR of HL tasks. Sample paper 1 and 2 (PPE 3 & 4)	HL 1: Revision list for sample paper 1. <i>PPE 3</i> HL 2: Self assess sample paper 1 (green pen) <i>PPE 3</i> HL 3: Material areas worksheets	Teacher resources: Staff share: Design and Technology: RM: Year 11: Revision program 2020 Student resources: Worksheets and support sheets to be provided by teacher. Including PPE papers and mark schemes.	Knowledge Orgainser Revision booklet Sequence of practical tasks Research and write tasks. Power point information Key words	<ul style="list-style-type: none"> Securing knowledge of all materials area for Section A. Securing knowledge of RM specific theory for Section B. Ability to apply knowledge from materials theory to a range of products. Apply knowledge of how products are designed and manufactured to evaluate their impact on Society and the environment.

	<p>Key processes in designing such as ergonomics, anthropometrics, inclusive design and planned obsolescence.</p> <p>Focus on RM specific for section B of the exam, focusing on the properties of materials. Key designers. Sustainable sources from the perspective of energy, the environment and 6R's.</p> <p>Maths – areas, percentages, drawing to scale and orthographically.</p> <p>Sample papers 1 and 2 - <i>PPE 3 & PPE 4</i>.</p>		<p>HL 4: Revision list for Sample paper 2. <i>PPE 4</i></p> <p>HL 5: Sample paper 2 <i>PPE 4</i></p> <p>HL 6: Self assess sample paper 2 (green pen) <i>PPE 4</i></p>			<ul style="list-style-type: none"> Evaluate a range of sources (materials and energy) considering their availability and sustainability. Linking sources to products and evaluating how those products could be improved. Cross curricular links – Maths, Geography, Science, History, English Effective time management in the exam Reflective learners
Summer term 1	<p>Theory: Section C of exam</p> <p>Work to include:</p> <p>Product analysis of different products (from each material area), applying knowledge to products i.e. how the product has been designed using ergonomics.</p> <p>Maths – how to analyse data and interpreted into charts/graphs, concluding with the influence the data would have on designing/manufacturing.</p> <p>PPE 5 – 2019 paper</p>	<p>HL tasks</p> <p>PPE 5 – 2019 paper</p>	<p>HL 1: Product analysis questions.</p> <p>HL 2: Maths practice questions</p> <p>HL 3: Revision cards – recapping key areas.</p>	<p>Teacher resources: Staff share: Design and Technology: Textiles: Year 11: Revision program 2020</p> <p>Student resources: Worksheets and support sheets to be provided by teacher. Including PPE papers and mark schemes.</p>	<p>Knowledge Orgainser</p> <p>Revision booklet</p> <p>Sequence of practical tasks</p> <p>Research and write tasks.</p> <p>Power point information</p> <p>Key words</p>	<ul style="list-style-type: none"> Securing knowledge of how products are designed, manufactured and disposed of for Section C. Ability to analyse different products considering the key factors they have been designed against (design specification) Evaluate products by applying key factors to their use and TMG. Cross curricular links – Maths, Geography, Science, History, English