

Year 10

Students have two DT lessons a week, in one they will study theory, in the other they will work on practical projects.

Timing	Unit Title	Overview	Knowledge	Assessing Understanding
Theory - Autumn term 1	Specialist material Area	<p>Students are introduced to their specialist material including the main categories and types.</p> <p>Graphics: Papers and boards/Textiles</p> <p>RM: Timber based materials</p>	<p>Section A</p> <p>1.6 Physical and working properties 1.6 - Papers & boards/Textiles/Timbers</p> <p>Section B Processes</p> <p>2.5 How to shape and form using cutting, abrasion and addition</p> <p>2.8 Tools, equipment and processes A range of tools, equipment and processes that can be used to shape, fabricate, construct and assemble high quality prototypes, as appropriate to the materials and/or components being used.</p> <p>3.10 Specialist tools and equipment 3.11 Specialist techniques and processes</p> <p>Stock forms and origins</p> <p>2.4 Sources and origins Primary sources of materials and the main processes involved in converting into workable forms for at least one material area.</p> <p>2.6 Stock forms, types and sizes In relation to at least one material category or system, students should know and understand the different stock forms types and sizes in order to</p>	End of unit test - Section B based questions

			<p>calculate and determine the quantity of materials or components required.</p> <p>Treatments and finishes 2.9 & 3.3.11 Students should have knowledge and understanding of surface treatments and finishes as well as how to prepare a material for and apply appropriate surface treatment.</p>	
Theory - Autumn term 2	Specialist material Area	<p>Students are introduced to their specialist material including the main categories and types.</p> <p>Graphics: Papers and boards/Textiles</p> <p>RM: Timber based materials</p>	<p>Section B:</p> <p>2.8/3.11 Material management/Quality control/tolerances/waste/jigs</p> <p>2.5 Modifications of properties/properties of materials</p> <p>2.2 Forces and Stresses</p> <p>Section C: 3.7/2.1 Selection of materials or components / product analysis</p>	Exam style questions
Theory – Spring term 1	Industry	<p>Students must know and understand the impact of new and emerging technologies on contemporary and potential future scenarios. in relation to the following areas:</p> <p>Alongside this, students will link examples to the company Apple</p>	<p>Section A: 1.1</p> <p>Industry</p> <p>Enterprise</p> <p>People</p> <p>Culture</p> <p>Society</p> <p>Production techniques and systems</p>	End of unit test: Industry

			<p>Design decisions</p> <p>Section B</p> <p>2.7 - Scales of production</p> <p>Section C</p> <p>3.3 the work of others: Apple</p>	
Theory - Spring 2	The Environment	Students will be focused on all environment based content for the course. This includes all 3 sections of the paper. Alongside this, students will learn about Primark and how their company's impact on the environment.	<p>Section A</p> <p>1.1 Sustainability</p> <p>1.2 Energy sources including arguments for and against:</p> <p>Fossil fuels</p> <p>Nuclear power</p> <p>Renewable energy</p> <p>1.2 Energy storage systems including batteries</p> <p>Kinetic pumped storage systems. Alkaline and rechargeable batteries.</p> <p>Section B</p> <p>2.3/3.2 Ecological and social footprint</p> <p>Section C</p> <p>3.3 the work of others: Primark</p>	Exam style questions
Theory Summer 1	As Above			EOY Exam

<p>Theory Summer 2</p>	<p>Section A 1.6 Materials and their working properties</p>	<p>Students should know and understand the categorisation of the types and properties of the following materials.</p> <p>Students should have an understanding of the working and physical properties of the materials in Material categories</p>	<p>Section A 1.6 Material categories Students should be able to identify materials and understand their main properties and uses.</p> <p>Papers and boards Students should have an overview of the main categories and types of papers and boards</p> <p>Natural and manufactured timbers Students should have an overview of the main categories and types of natural (hardwoods and softwoods) and manufactured timbers</p> <p>Metals and alloys Students should have an overview of the main categories and types of metals and alloys including ferrous, non-ferrous and alloys.</p> <p>Polymers Students should have an overview of the main categories and types of polymers (thermoforming, thermosetting)</p> <p>Textiles Students should have an overview of the main categories (natural and synthetic) and an understanding of fabric construction</p> <p>In relation to the main materials as outlined, students should be able to explain and design the physical and working properties</p>	<p>Practise Section B (Specialist technical principles) questions, in preparation for the end of unit test in the Autumn term of year 11.</p>
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Project- Autumn– Summer term 2	Specialist Project RM: Lighting project - In style of GCSE designer Graphics: Souvenir for an Exhibition	A design and make project, consisting of a working prototype and a concise portfolio.	Students' work should consist of an investigation into a given context. A design brief and specification should be drawn up resulting from research findings Students should generate design ideas with flair and creativity and develop these to create a final design solution (including modelling). A manufacturing specification should be produced to conclude design findings, leading into the realisation of a final prototype that is fit for purpose and a final evaluation. Students should investigate, analyse and evaluate throughout the portfolio and evidence all decisions made.	Formative and summative feedback on the following areas: Research Design ideas Design brief and specification Design development (modelling & testing a trialling) Final practical outcome
Summer term 2	4.4 Non-exam assessment	The Non-exam assessment will contribute towards 50% of the students overall mark. The NEA project in its entirety should take between 30-35 hours to complete and consist of a working prototype and a concise portfolio of approximately 20 pages of A3 paper, equivalent A4 paper or the digital equivalent.	Section A: Identifying & investigating design possibilities By analysing the contextual challenge students will identify design possibilities, investigate client needs and wants and factors including economic and social challenges. Students should also use the work of others (past and/or present) to help them form ideas. Research should be concise and relate to their contextual challenge. Students are also advised to use a range of research techniques (primary/secondary) in order to draw accurate conclusions. Students should be encouraged to investigate throughout their project to help inform decisions. Section B: Producing a design brief & Specification	Formative and summative feedback using AQA marking criteria

			Based on conclusions from their investigations students will outline design possibilities by producing a design brief and design specification. Students should review both throughout the project.	
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