

## Year 10

Theory lessons: 1 hour per week

Timing	Unit Title	Overview	Knowledge	Assessing Understanding
Autumn 1	Workshop familiarisation (RM Only)	To manufacture a wood-based product to an engineering drawing	How to use the following tools and equipment safely: <ul style="list-style-type: none"> <li>• Drilling machine, drill bits and Forstner bits</li> <li>• Belt sander</li> <li>• Mallet and chisel</li> <li>• Tenon saw</li> <li>• Coping saw</li> </ul>	Exam style questions
	Graphics student familiarisation (Graphics only)	To manufacture a range of graphic sample pieces.	How to carry out the following processes: <ul style="list-style-type: none"> <li>• Cutting and scoring</li> <li>• Printing on card</li> <li>• Effective joining techniques</li> <li>• Embossing</li> <li>• Foil blocking</li> </ul>	
	Specialist materials 1	Introduction to specialist materials <ul style="list-style-type: none"> <li>• Graphics: Papers and boards</li> <li>• RM: Timber based materials</li> </ul>	<b>Section B</b> For the specialist material: <ul style="list-style-type: none"> <li>• Types and their physical and working properties.</li> <li>• How to shape and form using cutting, abrasion and addition.</li> <li>• How to use tools, equipment and processes to shape, fabricate, construct and assemble high quality prototypes safely and with skill.</li> <li>• Commercial processes.</li> <li>• The main source and the processes involved in converting it into a workable form.</li> <li>• Stock forms and bought in components.</li> </ul>	

			<ul style="list-style-type: none"> <li>• Surface treatments and finishes as well including preparation and application.</li> </ul>	
Autumn 2	Specialist materials 2	Continue to develop knowledge of specialist materials: <ul style="list-style-type: none"> <li>• Graphics: Papers and boards</li> <li>• RM: Timber based materials</li> </ul>	<b>Section B:</b> <ul style="list-style-type: none"> <li>• Material management</li> <li>• Quality control</li> <li>• Tolerances</li> <li>• Waste</li> <li>• Jigs</li> <li>• Modifications of properties</li> <li>• Forces and stresses</li> </ul> <b>Section C:</b> <ul style="list-style-type: none"> <li>• Selection of materials or components / product analysis</li> </ul>	<b>End of unit test</b> Section B: Specialist materials
Spring 1	New and emerging technologies.	Develop knowledge and understanding of the impact of new and emerging technologies on commercial practice and society.	<b>Section A</b> <ul style="list-style-type: none"> <li>• Industry</li> <li>• Enterprise</li> <li>• People</li> <li>• Culture</li> <li>• Society</li> <li>• Production techniques and systems</li> <li>• Design decisions</li> </ul> <b>Section B</b> <ul style="list-style-type: none"> <li>• Scales of production</li> </ul> <b>Section C</b> <ul style="list-style-type: none"> <li>• The work of others: Apple</li> </ul>	Exam style questions

Spring 2	The environment	Develop knowledge and understanding of a range of environmental issues.	<b>Section A</b> <ul style="list-style-type: none"> <li>• Sustainability</li> <li>• Fossil fuels</li> <li>• Renewable energy</li> <li>• Energy storage systems including: <ul style="list-style-type: none"> <li>○ Kinetic pumped storage systems</li> </ul> </li> </ul> <b>Section B</b> <ul style="list-style-type: none"> <li>• Ecological and social footprint</li> </ul> <b>Section C</b> <ul style="list-style-type: none"> <li>• The work of others: Primark and the environment</li> </ul>	<b>End of unit test</b> New and emerging technologies & specialist materials.
Summer 1	The environment	-Revision for EoY exam -Continue to develop knowledge and understanding of a range of environmental issues.	<b>Section A</b> <ul style="list-style-type: none"> <li>• Nuclear power</li> <li>• Energy storage systems including: <ul style="list-style-type: none"> <li>○ Alkaline and rechargeable batteries</li> </ul> </li> </ul>	<b>EoY exam</b>

Summer 2	Materials: Core	Develop a basic knowledge of materials beyond the area of specialism	<b>Section A</b> Classification, properties and uses of materials within the following groups: <ul style="list-style-type: none"> <li>Metals and alloys</li> <li>Polymers</li> <li>Textiles</li> <li>Timber based materials (Graphics only)</li> <li>Papers and boards (RM only)</li> </ul>	Exam style questions
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**Year 10**

Practice NEA (Design and make project) / NEA Lesson: 1 hour per week

Timing	Unit Title	Overview	Knowledge & Skills	Assessing Understanding
Autumn 1 to Summer 1	Design and make project  RM context: Lighting- In style of a one of the following designers: <ul style="list-style-type: none"> <li>Aljoud Lootah</li> <li>Ettore Sottsass</li> <li>Kusheda Mensah</li> <li>Karim Rashid</li> </ul> Graphics context: Mini boxes of chocolates are used as gifts for celebrations and special occasions.	A design and make project to develop: <ul style="list-style-type: none"> <li>Designing skills</li> <li>Manufacturing skills</li> <li>Familiarity with the NEA criteria.</li> </ul>	To develop the following skills: <ul style="list-style-type: none"> <li>Context Analysis</li> <li>Research into and analysis of the work of others</li> <li>Writing a design brief and a well justified specification</li> <li>Generation of design ideas</li> <li>Communication of design ideas</li> <li>Development through modelling</li> <li>Development through testing and trialling</li> <li>Generating final drawings</li> <li>Manufacturing in the specialist material</li> <li>Analysis and evaluation</li> </ul>	Practice NEA against GCSE assessment criteria

Summer 2	Non-exam assessment (NEA) 50% of GCSE	NEA Sections A & B	<b>Context analysis</b> <ul style="list-style-type: none"><li>• Research into client wants and needs</li><li>• Research into the work of others</li><li>• Analysis and evaluation of research</li><li>• Concluding research findings</li><li>• Using research findings to inform a concise design brief and well justified design specification.</li></ul>	NEA
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