

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: • Drilling machine, drill bits and Forstner bits • Belt sander • Mallet and chisel • Tenon saw • Coping saw	Exam style questions
	Graphics student familiarisation (Graphics only)	To manufacture a range of graphic sample pieces.	How to carry out the following processes: • Cutting and scoring • Printing on card • Effective joining techniques • Embossing • Foil blocking	
	Specialist materials 1	Introduction to specialist materials • Graphics: Papers and boards • RM: Timber based materials	Section B For the specialist material: • Types and their physical and working properties. • How to shape and form using cutting, abrasion and addition. • How to use tools, equipment and processes to shape, fabricate, construct and assemble high quality prototypes safely and with skill. • Commercial processes. • The main source and the processes involved in converting it into a workable form. • Stock forms and bought in components.	

			• Surface treatments and finishes as well including preparation and application.	
Autumn 2	Specialist materials 2	Continue to develop knowledge of specialist materials: • Graphics: Papers and boards • RM: Timber based materials	Section B: • Material management • Quality control • Tolerances • Waste • Jigs • Modifications of properties • Forces and stresses Section C: • Selection of materials or components / product analysis	End of unit test 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.	Section A • Industry • Enterprise • People • Culture • Society • Production techniques and systems • Design decisions Section B • Scales of production Section C • The work of others: Apple	Exam style questions

Spring 2	Energy generation and storage. Ecological and social footprint.	Develop knowledge and understanding of a range of environmental issues.	Section A • Sustainability • Fossil fuels • Renewable energy • Energy storage systems including: ◦ Kinetic pumped storage systems Section B • Ecological and social footprint Section C • The work of others: Primark and the environment	End of unit test New and emerging technologies & specialist materials.
Summer 1	Energy generation and storage.	-Revision for EoY exam -Continue to develop knowledge and understanding of a range of environmental issues.	Section A • Nuclear power • Energy storage systems including: ◦ Alkaline and rechargeable batteries	EoY exam
Summer 2	Materials: Core	Develop a basic knowledge of materials beyond the area of specialism	Section A Classification, properties and uses of materials within the following groups: • Metals and alloys • Polymers • Textiles • Timber based materials (Graphics only) • Papers and boards (RM only)	Exam style questions

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: - Aljoud Lootah - Ettore Sottsass - Kusheda Mensah - Karim Rashid Graphics context: Mini boxes of chocolates are used as gifts for celebrations and special occasions.	A design and make project to develop: - Designing skills - Manufacturing skills - Familiarity with the NEA criteria.	To develop the following skills: - Context Analysis - Research into and analysis of the work of others - Writing a design brief and a well justified specification - Generation of design ideas - Communication of design ideas - Development through modelling - Development through testing and trialling - Generating final drawings - Manufacturing in the specialist material - Analysis and evaluation	Practice NEA against GCSE assessment criteria
Summer 2	Non-exam assessment (NEA) 50% of GCSE	NEA Sections A & B	Context analysis - Research into client wants and needs - Research into the work of others - Analysis and evaluation of research - Concluding research findings - Using research findings to inform a concise design brief and well justified design specification.	NEA