

Design & Technology

Key Stage 5

Year 12	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Design and Technology: Product Design	Polymers Metals Woods	Metals Woods Papers & Boards	Composite, Smart and Modern Materials Design Methods	Modern, Industrial and Commercial Practice Design Methods Design Processes	Product Design Considerations Design Processes Responsible Design	Product Design Development Responsible Design
	Short focussed practical tasks					NEA

Year 13	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	
Design and Technology: Product Design	NEA				Exam Prep	

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Key Stage 5

In Year 12 you will learn about

Term	Topic	Knowledge, Skills and Understanding
Autumn 1	Polymers Metals Woods	Performance characteristics of polymers including – characteristics of polymers and additives; applications of polymers; stock forms and types of polymers; elastomers; and biodegradable polymers. Processes and working with polymers including – working with polymers; forming polymers; and finishing polymers. Performance characteristics of metals including – stock forms and types of metals; performance characteristics of metals; and testing and treatment of metals. Processes and working with metals including – forming metals; joining metals; wasting metals; and finishing metals. Performance characteristics of woods including – stock forms and types of woods; performance characteristics; and testing and finishing of woods. Processes and working with woods including – working with woods; forming woods; and finishing woods.
Autumn 2	Metals Woods Papers and boards	Performance characteristics of metals including – stock forms and types of metals; performance characteristics of metals; and testing and treatment of metals. Processes and working with metals including – forming metals; joining metals; wasting metals; and finishing metals. Performance characteristics of woods including – stock forms and types of woods; performance characteristics; and testing and finishing of woods. Processes and working with woods including – working with woods; forming woods; and finishing woods. Performance characteristics of papers and boards including – performance characteristics; applications of papers and boards; and recycling of papers and boards. Processes and working with papers and boards including – forming processes; bonding, jigs and fixtures; and finishing papers and boards.
Spring 1	Composite, smart and modern materials Design Methods	Performance characteristics of composite materials, performance characteristics of smart materials and performance characteristics of modern materials. Design methods including – design methods and processes; design influences, styles and movements; designers and their work; socio-economic influences; developments in technology; social, moral and ethical considerations; and product life cycle.
Spring 2	Modern, industrial and commercial practice Design methods Design Processes	Modern, industrial and commercial practice including – scales of production; efficient use of materials and resources; computer systems in manufacturing; digital design and manufacturing; and modelling, testing, marketing and scheduling. Design methods including – design methods and processes; design influences, styles and movements; designers and their work; socio-economic influences; developments in technology; social, moral and ethical considerations; and product life cycle. Design processes including – the use of a design process; prototype development; industrial and commercial contexts; critical analysis, testing and evaluation; third party testing and evaluation; tools, equipment and processes; and accuracy in design and manufacture.
Summer 1	Product design considerations Design Processes Responsible design	Product design considerations including – product development and improvement; inclusive design; safe working practice; protecting designs and intellectual property; manufacture, repair, maintenance and disposal; efficient manufacturing techniques; and design for disassembly. Design processes including – the use of a design process; prototype development; industrial and commercial contexts; critical analysis, testing and evaluation; third party testing and evaluation; tools, equipment and processes; and accuracy in design and manufacture. Responsible design including – environmental issues; circular economy; conservation of energy; planning for accuracy; quality assurance and quality control; and standards.
Summer 2	Product design development Responsible design	Product design development including – feasibility studies; enterprise and marketing; communicating data; and design communication. Responsible design including – environmental issues; circular economy; conservation of energy; planning for accuracy; quality assurance and quality control; and standards.