

Yr10 DT Learning Intentions – Term 1

	Lesson 1	Lesson 2	Lesson 3
Week 1	<p>Core technical principles To be able to identify common timbers such as pine, mahogany, teak, ash and beech used in the manufacture of products.</p> <ul style="list-style-type: none"> • to be able to identify common manufactured boards i.e., MDF, plywood, chipboard, blockboard and hardboard. 	<p>Core technical principles To be able to understand the different properties and uses of MMB's within commercial products.</p> <ul style="list-style-type: none"> • to be able to understand that many timber-based materials are manufactured therefore the composition can be adjusted to create different properties for specific purposes. 	<p>Practical realisation Focus - Design Ideas</p> <ul style="list-style-type: none"> • Be able to generate design ideas • Be able to relate ideas to a brief • Be able to relate ideas to a target market
Important events	<p>Academic reading - Voll Arkitekter's Mjøstårne in Norway becomes world's tallest timber building (dezeen.com) HW – Describe the work of the FSC and the importance of choosing FSC products.</p>		
Week 2	<p>Core technical principles To be able to understand the stock forms for timber-based materials i.e., rough sawn, PSE, sheet sizes and mouldings.</p> <ul style="list-style-type: none"> • to have a basic understanding of the source of timber and the primary processes involved in conversion to workable materials. 	<p>Core technical principles To be able to identify common metals i.e. silver, stainless steel, mild steel, cast iron, brass, copper, zinc, aluminium, pewter;</p> <ul style="list-style-type: none"> • to understand the different properties and uses of such materials within engineering and domestic products. • to understand that many metals are alloys or have coated finishes therefore the composition can be adjusted. 	<p>Practical realisation Focus – Sketching</p> <ul style="list-style-type: none"> • Be able to present design ideas in 3D. • Be able to use appropriate sketching techniques. • Be able to annotate ideas using “ACCESSFM”.

Important events	HW – Timbers - Timber-based materials - AQA - GCSE Design and Technology Revision - AQA - BBC Bitesize	Formal assessment – Environmental issues	
Week 3	<p>Core technical principles</p> <p>To understand that the properties of metal can be changed by heat treatment.</p> <ul style="list-style-type: none"> • to understand the stock forms for metals i.e., sheet, rod, bar, tube. • to have a basic understanding of the source of metals and the primary processes involved in conversion to workable materials. 	<p>Core technical principles</p> <p>To be able to identify common thermoplastics i.e., high impact polystyrene, expanded polystyrene, acrylic, acetate, HDPE, PVC, PET.</p> <ul style="list-style-type: none"> • to be able to identify common thermosetting plastics i.e., GRP, Epoxy resin and MF. 	<p>Practical realisation</p> <p>Focus – Modelling</p> <ul style="list-style-type: none"> • Be able to use appropriate modelling materials. • Be able to work to scale. • Be able to make modifications during the construction process.
Important events	HW - Metal-based materials - Metal-based materials - AQA - GCSE Design and Technology Revision - AQA - BBC Bitesize		

Week 4	<p>Core technical principles To understand the ways in which plastics can be formed, especially about consumer products, i.e., vacuum forming, injection moulding, blow moulding, line bending, compression moulding and extrusion.</p>	<p>Core technical principles To understand that most plastics are synthetic, and that the composition can be adjusted to create different properties for specific purposes e.g., increase rigidity, reduce weight and increase insulation.</p>	<p>Practical realisation Focus - Measuring and marking</p> <ul style="list-style-type: none"> • Be able to recognise and choose measuring and marking tools. • Be able to measure accurately using the metric system. • Be able to use appropriate marking techniques
Important events	HW – Polymers - Polymers - AQA - GCSE Design and Technology Revision - AQA - BBC Bitesize		
Week 5	<p>Core technical principles To understand the stock forms for plastic materials i.e., sheet, rod, powder, granule and foam;</p> <ul style="list-style-type: none"> • to have a basic understanding of the source of plastics and the primary processes involved in conversion to workable materials. 	<p>Core technical principles To have a knowledge and understanding that the development of new and smart materials is allowing designers to meet a variety of user needs in new and exciting ways e.g. – Precious Metal Clays (PMC) used in jewellery manufacture</p>	<p>Practical realisation Focus - Health and safety</p> <ul style="list-style-type: none"> • Be able to select appropriate PPE. • Be able to use machinery in a safe manner. • Be able to show appropriate behaviour and attitudes in the workshop
Important events	Academic Reading - Ten different and everyday uses for bioplastics (dezeen.com)	Formal assessment – Manufacturing in quantity	

	HW – Identify ways to promote recycling and waste disposal in school environments		
Week 6	<p>Core technical principles</p> <p>To have a knowledge and understanding that the development of new and smart materials is allowing designers to meet a variety of user needs in new and exciting ways e.g. – Photochromic inks and lenses and SMAs</p>	<p>Core technical principles</p> <p>To have an awareness of the importance of the development of nanomaterials and integrated electronics in Design and Technology</p>	<p>Practical realisation</p> <p>Focus - Basic tools for cutting</p> <ul style="list-style-type: none"> • Be able to recognise and select basic cutting tools. • Be able to demonstrate correct techniques when using cutting tools. • Be aware of common errors when using cutting tools.
Important events	HW – Smart, modern and composite materials - Developments in new materials - AQA - GCSE Design and Technology Revision - AQA - BBC Bitesize		
Week 7	<p>Core technical principles</p> <p>To understand how materials can be combined and processed to create more useful or desirable properties.</p>	<p>Core technical principles</p> <p>To understand how a range of materials are prepared for manufacture, allowing for waste and fine finishing.</p> <ul style="list-style-type: none"> • Be aware of a variety of self-finishing and applied finishing processes and appreciate their importance for aesthetic and functional reasons. 	<p>Practical realisation</p> <p>Focus - Basic tools for Abrading</p> <ul style="list-style-type: none"> • Be able to recognise and select basic abrading tools. • Be able to demonstrate correct techniques when using abrading tools. • Be aware of common errors when using abrading tools.

Important events	HW – 100% Real Carbon Fibre (Fiber) KTM Brake Pump Cover - YouTube – Composite materials		