Sheldon School

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Curriculum Plan

KS4 – DT (Textiles)

Year 10

Golden Threads	Enrichment	Review and Evaluation

	Topics & Substantive Knowledge	Disciplinary Knowledge	Assessment	Misconceptions	Key Vocabulary	Knowledge Tracking
Term 1	**Theory** Production of materials. Paper and boards. Timbers. Metals and Alloys. Polymers. 3.1.6 Materials and their working properties - 3.1.6.1 Material categories: Paper and boards. Natural and manufactured timbers. Metals and Alloys. Polymers. Textiles.		End of unit/term test. Teacher Folder assessment and feedback. Practice exam questions – pupil marking. Weekly MCQ HWK	Understanding the different material areas and how to answer them on an AQA exam paper e.g. the difference between a softwood and a hardwood.	bleed proof cartridge paper Grid layout paper tracing paper corrugated card duplex board foil lined board foam core board ink jet card solid white board. Hardwood Ash Beech Mahogany oak balsa Softwoods Larch Pine Spruce manufactured board. medium density fibreboard (MDF) plywood chipboard. Ferrous low carbon steel cast Iron high carbon/tool steel Aluminum Copper Tin Zinc Alloys Brass stainless steel high speed steel. Thermoforming acrylic (PMMA) high impact polystyrene (HIPS) high density polythene (HDPE) polypropylene (PP) polyvinyl chloride (PVC) polyethylene terephthalate (PET) Thermosetting epoxy resin (ER) melamine-formaldehyde (MF) phenol formaldehyde (PF) polyester resin (PR) urea-formaldehyde (UF) natural fibres Cotton Wool Silk synthetic fibres Polyester polyamide (nylon) elastane (lycra) plain weave bonded fabrics felted fabrics	Prior knowledge: Theory lessons from KS3 Design and Technology. Links to Science, Art, PSHRE, Resistant materials and Graphics.

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Curriculum Plan

KS4 – DT (Textiles)

Year 10

	Topics & Substantive Knowledge	Disciplinary Knowledge	Assessment	Misconceptions	Key Vocabulary	Knowledge Tracking
Term 1 (cont)	**Practical** Project 1: Creative Textiles. Week 1: Embroidery – machine & hand embroidery. Week 2/3: Applique & sewing machine practice. Week 4: Block Printing. Week 5: Fibres and fabric. Week 6: Fabric Construction. 3.2 Specialist technical principles 3.2.8 Specialist techniques and processes		Self-assessment – WWW, EBI. Peer assessment of practical piece.	Understanding the different ways to create texture, surface decoration and design on fabric and showing that knowledge through their samples and written notes.		Prior knowledge: Research on existing products and mood board in KS3. Completing specifications in KS3 modules. Design and make projects in KS3 to understand how to be creative.

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Curriculum Plan

KS4 – DT (Textiles)

Year 10

	Topics & Substantive Knowledge	Disciplinary Knowledge	Assessment	Misconceptions	Key Vocabulary	Knowledge Tracking
Term 2	**Theory** Renewable/non-renewable – energy, materials and resources. Batteries. Fabric blends – Natural, synthetic, manmade. 3.1.1 New and emerging technologies 3.1.2 Energy generation and storage 3.2.4 Sources and origins		End of unit/term test. Practice exam questions – pupil marking. Weekly MCQ HWK	Understanding the use of renewable and non-renewable materials, energies and resources and how to answer them on an AQA exam paper.	Wind Solar Tidal hydro-electrical Biomass. Kinetic pumped storage systems. Alkaline and re-chargeable batteries. conductive fabrics fire resistant fabrics Kevlar Microfibre micro encapsulation Coal Gas Oil Pollution global warming Finite non-finite disposal of waste	Prior knowledge: Theory lessons from KS3 Design and Technology. Links to Science, Resistant materials and Graphics.
	Practical Week 7: Fabric construction. Week 8: Existing products. Week 9: Design ideas. Week 10: Final ideas & Testing. Week 11 – 14: Practical work – making creative cushion cover. 3.2.5 Using and working with materials. Different fabrics from natural, manmade and snythetic.		Self-assessment – WWW, EBI. Peer assessment of practical piece. End of module practical mark with detailed teacher feedback and photographic evidence.			Prior knowledge: Design and make projects in KS3 to understand how to be creative, how to use the sewing machine.

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Term 3	**Theory** Forces and stresses. Smart materials. Drawing techniques. Product Analysis. 3.1.3 Developments in new materials. Includes smart and modern materials. 3.2.2 Forces and stresses. How a material preforms in different conditions. Drawing techniques including One, Two point perspective, isometric, orthographic, exploded drawings. Using the ACCESSFM criteria to analysis a product.		End of unit/term test. Practice exam questions – pupil marking. Weekly MCQ HWK	Understanding a range of new and modern materials and how they are used in everyday job roles across the world. Understanding the different drawing techniques and how to successful answer an aqa exam question.	Absorbency Density fusibility Electrical Thermal conductivity. Strength Hardness Toughness Malleability Ductility Elasticity. Tension Compression Bending Torsion Shear Reinforced Stiffened Lamination Bending Folding Webbing fabric interfacing.	Prior knowledge: Theory lessons from KS3 Design and Technology. Links to Science, Resistant materials and Graphics.
	Practical Week 15: Flat felled Seam, French Seam, plain Seam. Week 16: Seam finishes. Week 17: Adding Shape. Week 18: Pockets. Week 19: Quilting and piping. Week 20: Design ideas for childrenswear. Commercial patterns – reading and interpreting. 3.1.5 Mechanical devices CAD and CAM machines and programs. 3.3.2 Environmental, social and economic challenge 3.3.3 The work of others Looking at other designers that have influenced the art and design movements.		End of unit/term test. Practice exam questions – pupil marking. Weekly MCQ HWK	Understanding the different ways designers have influenced society and created art movements that are studied worldwide. Understanding how products are made in different quantities		

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Term 4	**Theory** Designers and their work. Scales of production. Sustainability & environmental issues. CAD & CAM. Mechanical Systems. 3.1.5 Mechanical devices CAD and CAM machines and programs. 3.3.2 Environmental, social and economic challenge 3.3.3 The work of others Looking at other designers that have influenced the art and design movements.		End of unit/term test. Practice exam questions – pupil marking. Weekly MCQ HWK	Understanding the different ways designers have influenced society and created art movements that are studied worldwide. Understanding how products are made in different quantities	Reduce Refuse re-use Repair Recycle Rethink. bell cranks push/pull. Rotary systems CAMs and followers simple gear trains pulleys and belts. Laser Vinyl flexible manufacturing systems (FMS) just in time (JIT) lean manufacturing.	Prior knowledge: Theory lessons from KS3 Design and Technology. Links to Science, Art, PSHRE, Resistant materials and Graphics.
	Practical Commercial patterns – reading and interpreting. Garment construction – production of childrenswear.		Self-assessment – WWW, EBI. Peer assessment of practical piece. End of module practical mark with detailed teacher feedback and photographic evidence.	Understanding the construction of garments and how to interpret a commercial pattern. Show knowledge through their Design drawings and annotation.	Gathers. Dart Grain line Seam Allowance	

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Curriculum Plan

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Term 5	**Theory** Products in society. Mechanical systems. Quality control. User's needs. Working safety.		End of unit/term test. Practice exam questions – pupil marking. Weekly MCQ HWK			Prior knowledge: Theory lessons from KS3 Design and Technlogy. Links to Science, Art, PSHRE, Resistant materials and Graphics.
	Practical Studying and interpreting the work of others. Recycling module. Students look at converting old clothes into new garments.		Self-assessment – WWW, EBI. Peer assessment of practical piece. End of module practical mark with detailed teacher feedback and photographic evidence.			

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Term 6	**Theory** Non-Examined Assessment – 50% of GCSE final grade. AO1 (A) coursework catch up on NEA (Identifying and investigate and outline design possibilities) NEA Folder layouts and presentation preparation. AQA briefs analysis - context analysis. Researching the problem.		Individual and generic Verbal feedback. Peer assessment and self assessment using the marking criteria and exemplar folders for reference.			
	Practical Non-Examined Assessment – 50% of GCSE final grade. Research, Design Brief and Specification. AO1 (A) coursework catch up on NEA (Identifying and investigate and outline design possibilities) (B) Producing a Design Brief and Specification.		Individual and generic Verbal feedback. Peer assessment and self assessment using the marking criteria and exemplar folders for reference.		Analyse Development Investigate Identify Specification Evaluation Design Brief Construction	