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Curriculum Plan

KS4 – DT (Resistant Materials)

Year 10

Golden Threads	Enrichment	Review and Evaluation

	Topics & Substantive Knowledge	Disciplinary Knowledge	Assessment	Misconceptions	Key Vocabulary	Knowledge Tracking
Term 1	**THEORY** Material properties Material categories Developments in new materials 3.1.6.1 Material categories • Papers and boards • Timbers • Metals • Polymers • Textiles • Material properties 3.1.3 new materials • Modern • Smart • Composite • Technical textiles	Material categories Papers / boards Hardwood / softwood / manufactured boards Ferrous / non-ferrous / alloys Thermoforming / thermosetting Natural / synthetic / blended and mixed / woven and non-woven / knitted textiles	End of unit test Weekly MCQ HWK	Confusing the different material properties.	Isometric Drawing Lap Joint Plywood Router Biscuit Joint Tenon Saw Dowel Evaluation Compartments Try Square	Building on prior knowledge of year 7 storage stand and year 8 embellishment project using traditional carpentry skills. Leading to sufficient knowledge to apply to their NEA and written exam.
	PRACTICAL Wooden Storage Box 3.2.5 Using and working with materials 3.2.6 Stock forms, types and sizes 3.2.7 Scales of production 3.2.8 Specialist techniques and processes 3.3.3 The work of others	Marking out and cutting processed timber. Able to identify stock forms of timbers. (Board, Sheet, Plank ect). Identify and explain the 4 scales of production. To be able to cut a biscuit, finger, mitre, and half lapped Joint using a variety if traditional woodworking methods and modern machining methods. • Biscuiter • Table router • Disc sander • Tennon Saw • Coping saw • Chisel • Mallet To use the inspiration and work of others to influence their storage solution CAD lid design.	Self-assessment Peer assessment of practical piece Continual Verbal feedback. QA measurements of storage solution. End of module practical mark	Incorrect measuring and marking. Tolerances – fitment Accuracy and competency on Techsoft Design CAD design.	Isometric Drawing Lap Joint Plywood Router Biscuit Joint Tenon Saw Dowel Evaluation Compartments Try Square	Building on prior knowledge of year 7 storage stand and year 8 embellishment project using traditional carpentry skills. Building on prior knowledge of year 7 plaque project, year 8 embellishment project and year 9 USB Torch project to complete a complex CAD design and CAM manufacture.

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	Topics & Substantive Knowledge	Disciplinary Knowledge	Assessment	Misconceptions	Key Vocabulary	Knowledge Tracking
Term 2	**THEORY** Specialist technical principles Timber / metal based materials 3.2.4 Sources and origins 3.2.5 Using and working with materials (properties / medification of properties / how to shape and form) 3.2.6 Stock forms, types and sizes 3.2.8 Specialist techniques and processes (tools / tolerance / commercial processes / quality control)	Timber conversion / metal extraction Physical and mechanical properties of timber and metal based products The modification of properties for specific purposes Stock forms of metal and timber	End of unit test Weekly MCQ HWK	The names of stock forms and being able to describe commercial processes.	Seasoning Extraction planks / boards KD fitting sheet / rod Turning brazing casting	Building on prior knowledge of year 7 storage stand and year 8 embellishment project using traditional carpentry skills. Leading to sufficient knowledge to apply to their NEA and written exam.
	PRACTICAL Wooden Storage Box 3.2.9 Surface treatments and finishes	Wood filler and product prep. Selecting and apply a suitable finish. (Wax/ Polyurethane varnish)	Self assessment Peer assessment of practical piece End of module practical mark	Incorrect application of wood finish.		Building on prior knowledge of year 7 storage project, year 8 embellishment project. Selecting and apply a suitable finish. (Wax/ Polyurethane varnish)

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	Topics & Substantive Knowledge	Disciplinary Knowledge	Assessment	Misconceptions	Key Vocabulary	Knowledge Tracking
Term 3	**THEORY** Specialist technical principles Timber / metal based materials 3.2.4 Sources and origins 3.2.5 Using and working with materials (properties / medification of properties / how to shape and form) 3.2.6 Stock forms, types and sizes 3.2.8 Specialist techniques and processes (tools / tolerance / commercial processes / quality control)	Timber conversion / metal extraction Physical and mechanical properties of timber and metal based products The modification of properties for specific purposes Stock forms of metal and timber	End of unit test Weekly MCQ HWK	The names of stock forms and being able to describe commercial processes.	Seasoning Extraction planks / boards KD fitting sheet / rod Turning brazing casting	Building on prior knowledge of year 7 storage stand and year 8 embellishment project using traditional carpentry skills. Leading to sufficient knowledge to apply to their NEA and written exam.
	PRACTICAL Wooden Storage Box 3.2.9 Surface treatments and finishes	Wood filler and product prep. Selecting and apply a suitable finish. (Wax/ Polyurethane varnish)	Self assessment Peer assessment of practical piece End of module practical mark	Incorrect application of wood finish.		Building on prior knowledge of year 7 storage project, year 8 embellishment project. Selecting and apply a suitable finish. (Wax/ Polyurethane varnish)

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	Topics & Substantive Knowledge	Disciplinary Knowledge	Assessment	Misconceptions	Key Vocabulary	Knowledge Tracking
Term 4	**THEORY** Energy generation and storage Systems approach to designing Mechanical devices 3.1.2 energy generation and storage Fossil fuels Nuclear power Renewable 3.1.4 Systems Inputs Processes Outputs 3.1.5 Mechanical Types of movement Changing magnitude and direction of force	The uses of different components (inputs & outputs) Programmable components Levers, linkages and rotary systems	End of unit test Weekly MCQ HWK	Misunderstanding the different types of movement.	Hydro-electrical biomass sensors microcontrollers linear rotary reciprocating oscillating	Leading to sufficient knowledge to apply to their NEA and written exam.
	PRACTICAL Metal Weather Vane 3.1.2 energy generation and storage Fossil fuels Nuclear power Renewable 3.1.4 Systems Inputs Processes Outputs 3.1.5 Mechanical Types of movement Changing magnitude and direction of force	The uses of different components (inputs & outputs) Programmable components Levers, linkages and rotary systems	End of unit test Weekly MCQ HWK	Misunderstanding the different types of movement.	Hydro-electrical biomass sensors microcontrollers linear rotary reciprocating oscillating	Leading to sufficient knowledge to apply to their NEA and written exam.

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	Topics & Substantive Knowledge	Disciplinary Knowledge	Assessment	Misconceptions	Key Vocabulary	Knowledge Tracking
Term 5	**THEORY** Designing principles Making principles 3.3.2 Environmental, social and economic challenge 3.3.3 The work of others 3.3.5 Communication of design ideas	The environment, social and economic challenges that influence design and making. Investigate, analyse and evaluate the work of past and present designers and companies to inform their own designing. The list of designers and companies are listed on the AQA specification.	End of unit test Weekly MCQ HWK			
	PRACTICAL MP3 Player 4.4.4.1 Section A Identifying and investigating design possibilities	N/A	Self-assessment Peer assessment of practical piece Continual Verbal feedback. QA measurements of storage solution. End of module practical mark	Ensure that all of the research has been concluded and summarised.	N/A	Building on learning throughout year 10.

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	Topics & Substantive Knowledge	Disciplinary Knowledge	Assessment	Misconceptions	Key Vocabulary	Knowledge Tracking
Term 6	**THEORY** NEA Non exam assessment 4.4.4.1 Section A Identifying and investigating design possibilities	N/A	Verbal feedback will be conducted in all lessons when supporting the progress of practical work. During the NEA in line with exam board and JCQ regulations, individual feedback is not permitted.	Ensure that all of the research has been concluded and summarised.	N/A	Building on learning throughout year 10.