



Golden Threads	Enrichment	Review and Evaluation
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	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.		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 Logo design <ul style="list-style-type: none"> What is Graphic Design Key principles of logo design CAD 	<ul style="list-style-type: none"> How to generate a range of creative initial ideas How to develop an idea How to convert a drawn idea into a final computer-generated design 	Final end of project mark and feedback	Transferring a drawn design onto the computer		Building on prior design skills learnt throughout KS3. Leading to sufficient knowledge to apply to their NEA and written exam



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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 / modification 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.		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 Trainer packaging <ul style="list-style-type: none"> Idea generation How to develop an idea Prototyping How to produce a complex net design How to make a piece complex card board packaging 	<ul style="list-style-type: none"> How to generate a range of creative initial ideas How to develop an idea How to produce a complex net and then evaluate it order to improve the functionality and quality How to produce a high-quality piece of packaging showing complexity and a good quality finish. 	Final end of project mark and feedback	Producing a 2d net and understanding how it will work as a 3d product.		Building on prior design skills learnt throughout KS3 with clear links to the year 9 happy Meal project. Leading to sufficient knowledge to apply to their NEA and written exam



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Term 3	Theory New and emerging technologies 3.1.1 new and emerging technologies Industry Enterprise Sustainability People Culture Society Environment Production techniques and systems	The impact of new and emerging technologies on industry. Enterprise based on effective business innovation. The impact of resources consumption on the planet. Fashion and trends. Respecting people of different faiths and beliefs. Positive and negative impacts of new products.	End of unit test Weekly MCQ HWK	The meaning of fair trade and co-operatives.	Crowd funding Fair trade Co-operatives Finite Non-finite Pollution Global warming	
	Practical Architectural toy The work of others focusing on the architects listing on the DT GCSE specification. CAD / CAM	<ul style="list-style-type: none"> Understand the work and style of existing architects and how to use this to create your own concept. Using 3d models to generate a wide range of innovative ideas How to convert a card concept into a working CAD design. How to use the laser cutter to cut out and then assemble a final product. 	Final end of project mark and feedback	The correct sizing and scale of the model parts to enable them to fit together.		Building on prior CAD / CAM skills learnt throughout KS3. Leading to sufficient knowledge to apply to their NEA and written exam



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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 Mock NEA 3.3.2 Environmental, social and economic challenge 3.3.3 The work of others 3.3.5 Communication of design ideas	<ul style="list-style-type: none"> 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	Linking the design brief and specification to the research.		Building on prior design skills learnt throughout KS3. Leading to sufficient knowledge to apply to their NEA and written exam



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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 Mock NEA <ul style="list-style-type: none"> How to research a given context What a design brief and specification is idea generation Prototype Final product Evaluation 	How to complete a context analysis and a client profile. How to write a design brief and specification which is clearly linked to the initial research. How to produce a range of innovative initial ideas and analyse them against the specification. How to develop an idea How to create a functioning prototype and analyse it against the specification Create a final product.	Final end of project mark and feedback			



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Term 6	Practical 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.