



Year 12 Design Technology – Product Design Curriculum Map

Overview	<p>A Level AQA Design and Technology - Product Design</p> <p>This creative and thought-provoking qualification gives students the practical skills, theoretical knowledge and confidence to succeed in a number of careers. Especially those in the creative industries. They will investigate historical, social, cultural, environmental and economic influences on design and technology, whilst enjoying opportunities to put their learning into practice by producing prototypes of their choice.</p> <p>Students will gain a real understanding of what it means to be a designer, alongside the knowledge and skills sought by higher education and employers. You can find out about all our Design and Technology: Product Design qualifications at aqa.org.uk/designandtechnology</p> <p>Theory resources endorsed through PGOnline</p>					
Year 12	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	Unit 1 Performance of Papers Unit 2 Performance of Polymers Unit 3 Performance of wood Unit 13 Design Methods	Unit 4 Performance of Metals Unit 5 Composite materials Unit 6 Processing with Papers and Boards Unit 14 Design Processes	Unit 7 Processing Polymers Unit 8 Processing Woods Unit 9 Processing Metals Unit 14 Design Processes cont;	Unit 10 Industrial practice Unit 11 Product design considerations Unit 15 Responsible Design	Unit 12 Product Design	Mock Exams Revision Topic catch up NEA exam board brief issued
Knowledge	Performance of Papers: <ul style="list-style-type: none"> ▪ Performance ▪ Applications ▪ Recycling Performance of Polymers: <ul style="list-style-type: none"> ▪ Characteristics ▪ Application ▪ Stock forms and types ▪ Elastomer 	Performance of Metals: <ul style="list-style-type: none"> ▪ Stock forms ▪ Performance ▪ Testing Composite materials: <ul style="list-style-type: none"> ▪ Composite materials ▪ Smart materials ▪ Modern materials 	Processing Polymers: <ul style="list-style-type: none"> ▪ Working with polymers ▪ Forming polymers ▪ Finishing polymers Processing Woods: <ul style="list-style-type: none"> ▪ Working with woods ▪ Forming woods ▪ Finishing woods 	Industrial Practice: <ul style="list-style-type: none"> ▪ Scales of production ▪ Efficient use of materials ▪ Computer systems ▪ Digital design ▪ Modelling Product Design Considerations: <ul style="list-style-type: none"> ▪ Product development ▪ Inclusive design ▪ Safe working practices 	Product Design: <ul style="list-style-type: none"> ▪ Feasibility studies ▪ Enterprise ▪ Communicating data ▪ Design communication 	Mock exams Topic catch up NEA brief issued

	<ul style="list-style-type: none"> Biodegradable <p>Performance of Wood:</p> <ul style="list-style-type: none"> Stock forms Performance Testing and finishing <p>Design Methods:</p> <ul style="list-style-type: none"> Design methods and process Design influences Designers and their works Social and economic influences Developments in technologies Social considerations Product life cycle 	<p>Design Processes:</p> <ul style="list-style-type: none"> Use of a design process Prototype development Industrial contexts Critical analysis Third party testing 	<p>Processing Metals:</p> <ul style="list-style-type: none"> Forming metals Joining metals Wasting metals Finishing metals <p>Design Processes cont;:</p> <ul style="list-style-type: none"> Tools Accuracy in design 	<ul style="list-style-type: none"> Protecting designs Manufacture Efficient manufacturing Design for disassembly <p>Responsible Design:</p> <ul style="list-style-type: none"> Environmental issues Circular economy Conservation of energy Planning for accuracy Quality assurance and quality control Standards 		
<p>Skills</p>	<p>Theory skills::</p> <p>Performance of Papers Performance of Polymers Performance of Wood Design methods</p> <p>Practical Skills: Practical living in a modern day house environment - mini</p>	<p>Theory skills:</p> <p>Performance of Metals: Composite materials: Design Processes:</p> <p>Practical Skills: Practical living in a modern day house environment - mini</p>	<p>Theory skills:</p> <p>Processing Polymers: Processing Woods: Processing Metals: Design Processes cont;:</p> <p>Practical Skills: Practical living in a modern day house environment - mini NEA</p>	<p>Theory skills:</p> <p>Industrial Practice: Product Design Considerations: Responsible Design:</p> <p>Practical Skills: Practical living in a modern day house environment - mini NEA</p>	<p>Theory skills:</p> <p>Product Design</p> <p>Practical Skills: Practical living in a modern day house environment - mini NEA</p>	<p>Theory skills</p> <p>Review units as required</p> <p>Practical Skills Exam Board NEA Brief</p> <p><u>Identification and investigation of a design possibility:</u></p>

	<p>NEA:</p> <p><u>Identification and investigation of a design possibility:</u></p> <p>Situation/Problem</p> <p>Context & Research Plan.</p> <p><u>Investigation of needs and research:</u></p> <p>Client Interview and Fly-on-the-wall Observation</p> <p>Existing Products Detailed product analysis Life cycle analysis Sustainability</p> <p>Location</p> <p>Further Research</p> <p><u>Specification:</u></p> <p>Specification</p>	<p>NEA</p> <p><u>Design ideas:</u></p> <p>Initial ideas Review of chosen ideas</p> <p><u>Development of ideas:</u></p> <p>Scale Model planning to include sourcing of material 1:1 Model Testing Ergonomics and Anthropometrics Improved Chosen Idea Experimenting with materials, processes and applied finish Planning Development and experimentation CAD & evaluation of Materials Development and experimentation alternative components and Materials Development and experimentation manufacturing processes in product Development and experimentation alternative methods of manufacture, Jigs, Formers, and CAD</p>	<p><u>Development of Prototype:</u></p> <p>Manufacturing Specification Production plan</p> <p><u>Review of development and final idea:</u></p> <p>All development pages - evaluation of the refinements made to designs with reference to user needs and specification</p> <p>All development pages – evaluation and analysis of the designs and prototypes made by others which make connection of elements and inform own design decisions</p> <p><u>Communication of design ideas:</u></p> <p>All developments pages use of traditional/manual graphical techniques, accomplished use of written techniques and</p>	<p><u>Making:</u></p> <p>Quality Control, Quality Assurance, and standards Diary of making Product</p>	<p><u>Testing and evaluation:</u></p> <p>Evaluation against the Design Specification Client Evaluation In Location Evaluation against the Manufacturing Specification Summary of Improvements and recommendations</p>	<p>Situation/Problem</p> <p>Context & Research Plan.</p>
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