

# A Level Design Technology Specification Content Audit

Name _____	DT A'Level Knowledge Tracker	Y	?	N
3.1.1 Materials and their applications	Classification of materials			
	Methods for investigating and testing materials			
3.1.2 Performance characteristics of materials	Performance characteristics of papers and boards			
	Performance characteristics of polymer based sheet and film			
	Performance characteristics of woods			
	Performance characteristics of metals			
	Performance characteristics of polymers			
	Elastomers			
	Biodegradable polymers			
	Composites			
	Smart materials			
	Modern materials			
3.1.3 Enhancement of materials	Polymer enhancement			
	Wood enhancement			
	Metal enhancement			
3.1.4 Forming, redistribution and addition processes	Paper and board forming processes			
	Polymer processes			
	Metal processes			
	Wood processes			
3.1.4.6	The use of adhesives and fixings			
	Jigs and fixtures			
3.1.5 The use of finishes	Paper and board finishing			
	Paper and board printing processes			
	Polymer finishing			
	Metal finishing			
3.1.6	Wood finishing			
	Scales of production			
3.1.6.2	Efficient use of materials			
	The use of computer systems			
	Sub-assembly			

This learning program will outline the designing and practical task that student will complete. These form part of the designing and making principles (DMP) that will support students with the Non-examined Assessment (NEA).

*For details of the theory content please see the official AQA recommended scheme of work. All student will receive independent learning tasks based on both the theory content and the designing and making skills.*

3.1.7 Digital design and manufacture	Computer aided design (CAD)			
	Computer aided manufacture (CAM)			
	Virtual modelling			
	Rapid prototyping processes			
	Electronic data interchange			
	Production, planning and control (PPC) networking			
3.1.8	Product development and improvement			
	Inclusive design			
3.1.9	Safe working practices			
	Safety in products and services to the customer			
3.1.10	Protecting designs and intellectual property			
3.1.11	Manufacture, repair, maintenance and disposal			
	Ease of manufacture			
	Disassembly			
3.1.12	Feasibility studies			
3.1.13	Enterprise and marketing in the development of products			
3.1.14	Design communication			
3.1.15	Modern manufacturing systems			

## A Level Design Technology

# NEA TRACKER

Students should use this tracker as a guide in order to complete the NEA.

*Student should also use the NEA guidance PowerPoint provided to them alongside example folders and the moderators commentaries. All of these resources can be found on the shared area and on OneNote.*

<b>Section A:</b> (10 pages) Identifying & investigating design possibilities (20 marks)	Design Context & Task Analysis
	Client Profile and interview with details of an expert
	investigation into the work of others
	Product Analysis
	Practical experimentation
	Product Disassembly
	Primary research (Sizes, function, materials)
	First concept sketches
	Analysis of Research
	Ongoing Research
<b>Section B</b> Design Brief and Specification (2 pages) 10 marks	Design Brief linked to client's Needs and Wants
	Design Specification
<b>Section C:</b> Development of design proposals (12 Pages) (25 Marks)	Design ideas related to the brief and specification with constant reference to end user
	Modelling of initial concepts
	Investigating materials to support design decisions
	Ongoing investigations into design ideas
	Working drawings
	Chosen Design Idea to develop annotated against Spec
	Manufacturing Specification
<b>Section D:</b> (12 pages) Developing Prototypes (25 Marks)	2D and 3D drawings of the final design
	CAD Development work of the final design
	3D model
	Prototype models
	Materials and components including cutting lists
	Manufacturing Specification for the final design
<b>Section E:</b> (10 pages) Analysing & evaluating (20 marks)	Final Test Against the Specification
	Client/user and expert testing and final interview
	Ongoing Evaluations
	Improvements and modifications for commercial production
	Final Evaluation

Hours	Wk	Topic/ Content	Objectives/Skills	Independent Study (5hours per week)	Assessment	Success Criteria	Stretch & Challenge (Thirst for Learning)
8 hours approx	1	Graphic Communication	<ul style="list-style-type: none"> <li>Enhance communication of design ideas</li> <li>Pencils, crayons, markers and fine liners</li> </ul>	Theory topic & a task related to this weeks DMP focus.	Ongoing teacher student feedback regarding practical skills and portfolio evidence	<b>Designing and Making Assessments:</b> <ul style="list-style-type: none"> <li>AQA grading criteria for the NEA using the top three bands only.</li> </ul>	<b>Designing:</b> Continuous development of:  Drawing skills CAD skills  <b>Theory:</b> Using the Specification to plan and structure revision.
	2		<ul style="list-style-type: none"> <li>Enhance communication of design ideas</li> <li>Communicating specific elements of a drawing to focus on the details</li> </ul>	Theory topic	Work will be grade using A Level grades <b>A* - E.</b>		
	3		<ul style="list-style-type: none"> <li>Enhance communication of design ideas</li> <li>Sectional drawings</li> </ul>	Theory topic	A holistic mark and feedback will be given based on all the evidence of work completed.		
8 hours approx	4	Reclaimed timber project	Iterative design introduction from the NEA perspective. Students need to record, evaluate and develop products using photographic evidence of skills.	Completing design ideas for a small product to be made from 3ft of scaffolding board.	Ongoing teacher student feedback regarding practical skills and portfolio evidence	<b>Designing and Making Assessments:</b> <ul style="list-style-type: none"> <li>AQA grading criteria for the NEA using the top three bands only.</li> </ul>	<b>Designing:</b> Continuous development of:  Drawing skills CAD skills  <b>Theory:</b> Using the Specification to plan and structure revision.
			Planning the manufacture of the idea. SOME: may begin to model the idea.				
	5		Manufacturing using tools, equipment and processes. Prototypes	Record of progress with evaluations.	Holistic mark A* to E for the practical project.		
			Manufacturing using tools, equipment and processes.				
	6		Manufacturing using tools, equipment and processes.	Revision for the end of unit theory test.	End of half term test on the theory topics covered this half term. <b>See AQA scheme of work.</b>		
			Photographic evidence with evaluations of techniques and processes used. WWW and EBI.				

Hours	Wk	Topic/ Content	Objectives/Skills	Independent Study (5hours per week)	Assessment	Success Criteria	Stretch & Challenge (Thirst for Learning)
20 Hours approx	1	Manufacturing and testing fabrication methods and material working characteristics.	<ul style="list-style-type: none"> <li>Exploded drawing of the joints that will be made and tested.</li> </ul>	Complete the drawings using graphic techniques	Ongoing teacher student feedback regarding practical skills and portfolio evidence.	<b>Designing and Making Assessments:</b> <ul style="list-style-type: none"> <li>AQA grading criteria for the NEA using the top three bands only.</li> </ul>	<b>Designing:</b> Continuous development of:  Drawing skills CAD skills  <b>Theory:</b> Using the Specification to plan and structure revision.
	2		Making templates and jigs	Theory topic  Notes and sketches and photographic evidence of DMP activity	Work will be grade using A Level grades <b>A* - E.</b>		
	3		Dowel joints using 3'1 pine	Theory topic Notes and sketches and photographic evidence of DMP activity	A holistic mark and feedback will be given based on all the evidence of work completed.		
	4		Finger joint using a marking gauge	Theory topic Notes and sketches and photographic evidence of DMP activity	End of half term test on the theory topics covered this half term. <b>See AQA scheme of work.</b>		
	5		Dovetail using a template	Theory topic Notes and sketches and photographic evidence of DMP activity			
	6		KD fitting (barrel nut and bolt) Using a drilling jig	Theory topic Notes and sketches and photographic evidence of DMP activity			
	7		KD fitting (CAM lock) using a drilling jig.	Theory topic Notes and sketches and photographic evidence of DMP activity			
	8		Testing joints and recording results	Theory topic Notes and sketches and photographic evidence of DMP activity			

Hours	Wk	Topic/ Content	Objectives/Skills	Independent Study (5hours per week)	Assessment	Success Criteria	Stretch & Challenge (Thirst for Learning)
20 Hours approx	1	Focused Practical Tasks	<ul style="list-style-type: none"> <li>Pewter casting designing and making</li> </ul>	Complete the drawings using graphic techniques	Ongoing teacher student feedback regarding practical skills and portfolio evidence.	<b>Designing and Making Assessments:</b> <ul style="list-style-type: none"> <li>AQA grading criteria for the NEA using the top three bands only.</li> </ul>	<b>Designing:</b> Continuous development of:  Drawing skills CAD skills  <b>Theory:</b> Using the Specification to plan and structure revision.
	2		Metal bottle opener <ul style="list-style-type: none"> <li>Making and maths link to working out volume</li> </ul>	Theory topic  Notes and sketches and photographic evidence of DMP activity	Work will be grade using A Level grades <b>A* - E.</b>		
	3		CNC router <ul style="list-style-type: none"> <li>Designing in Techsoft</li> <li>Set up of machine</li> </ul>	Theory topic Notes and sketches and photographic evidence of DMP activity	A holistic mark and feedback will be given based on all the evidence of work completed.		
	4		Wood lathe <ul style="list-style-type: none"> <li>Set up and making</li> </ul>	Theory topic Notes and sketches and photographic evidence of DMP activity	End of half term test on the theory topics covered this half term. <b>See AQA scheme of work.</b>		
	5		Plastic processes (set up and diagrams) <ul style="list-style-type: none"> <li>Vacuum forming</li> <li>Strip heater</li> </ul>	Theory topic Notes and sketches and photographic evidence of DMP activity			
	6		Model making <ul style="list-style-type: none"> <li>Techniques using foam core board, blue foam, cardboard</li> </ul>	Theory topic Notes and sketches and photographic evidence of DMP activity			