Croxley Danes School : Design & Technology Key Stage 4 Curriculum Map

Subject: Design & Technology Textiles **Exam Board (KS4 AQA)**

Key Stage 4 **Year Group: 10 GCSE AQA DT Textiles**

In the first year of GCSE Product Design students will develop a working knowledge and understanding of a range of materials and their working properties- This will allow students to expand their making skills and vocabulary for them to answer the terminal exam paper and the NEA task. Through specific theory lessons and Homework tasks students will practise exam technique in answering a range of questions on the materials topics to prepare them fully for the terminal examination. Students will be assessed at the end of theory topics.

Areas of Content:

Technical principles • Designing and making principles • Analysing and evaluating designs • Social and ethical issues in design technology
Identifying and investigating design possibilities • Designing and making prototypes

YR 10 Tx	**Autumn Term**	
Key Concept	**Design & Making Skills**	**Knowledge**
Content: **(Know what…)**	Students learn about the work of others and use this as inspiration for their own products, samples and collaborative pieces.. Students learn how to use a number of techniques that can be used in future products. Students are encouraged to be creative and embrace a range of materials in their work, embracing the demanding nature of the D&T GCSE course using a variety of materials and processes.	**<u>Section A – Core Principles</u>** The core principles of the AQA Design Technology GCSE form the foundation upon which students build their understanding of design and technology. These principles encompass a wide range of topics that are crucial for students to grasp in order to develop their skills and knowledge in designing and creating products. As Textiles specialists they are Introduced to the D&T course and how it fits into the GCSE. Students understand fibres and their origins, to yarn and fabric construction and then to forming the textile product..

Skills:
(Know how…)
	• Embellishment
	• Independent use of the sewing machine
	• Free motion embroidery
	• CAD/CAM embroidery
	• Fabric manipulation
	• Fabric forming
	  ◦ Seams
	• Felt construction in focussed practical tasks. Students understand a range of techniques
	• Screen printing
	• Addition techniques
	  ◦ Quilting
	  ◦ Piping
		<u>Section A – Core Principles</u>
		• New and emerging technologies
		• Energy generation and storage
		• Developments in new materials
		• Sustainability
		• Systems approach to designing
		• Mechanical devices
		• Materials working properties
		  ◦ Papers & Board
		  ◦ Timber
		  ◦ Metal
		  ◦ Polymers
		  ◦ Textiles

Key vocabulary (5- 10 words)	Textiles, fibres, fabric, construction, seams, culture, sub- culture, inspiration, woven, non- woven, knit	Screen printing, roller printing, piping, quilting, wadding, calico, plain weave, twill weave, felt, denim	Innovation ● Automation ● Renewable energy ● Non-renewable energy ● Smart Materials ● Linear motion ● Rotary motion ● Elasticity	● Levers ● Cams ● Gears ● Metals ● Textiles ● Polymers ● Textiles ● Thermal conductivity ● Reciprocating motion
End of term assessment			Section A topic tests.	
Planned trips / Clubs / links	https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552/specification https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552/specification/subject-content/core-technical-principles https://www.bbc.co.uk/bitesize/examspecs/zby2bdm https://www.technologystudent.com/			

Key Stage 4	**Year Group: 10 GCSE AQA DT Textiles**	
YR 10 Tx	**Spring Term**	
Key Concept	**Design & Making Skills**	**Knowledge**
Content: **(Know what…)**	Students create a mini NEA project, utilising data and research to create their own design brief looking at children's wear and the stereotypes found within this market. Students learn about the tasks within the NEA and learn about what the process entails when they are ready to start their assessed NEA from the 1st June.	**Section B – Specialist Technical Principles** Specialist technical principles, provides the students with a deeper understanding of the specific techniques, processes, and skills required in various design and technology disciplines. This knowledge builds upon the foundational knowledge from Section A and focuses on more detailed aspects of materials, their properties, and their applications in design projects.

<table>
<tr><td>Skills:
(Know how…)</td><td colspan="2">Use data to make conclusions
Write a design brief and specification
Use inspiration to create your own designs, avoiding design fixation
Create a range of samples to test techniques and processes
Learn about a range of fabric forming techniques
Seams
Hems
Pleats
Learn how to sew with a range of components and fastenings
Learn how to adapt and draft basic patterns
Make a prototype
Test the prototype against the design specification
Gain and use feedback on the product to inform improvements</td><td colspan="2"><u>Section B – Specialist Technical Principles Specialist</u>
Textiles
Selection of Materials and Components
Forces and Stresses
Ecological and Social Footprint
Sources and Origins
Using and Working with Materials
Stock Forms, Types, and Sizes
Scales of Production
Specialist Techniques and Processes
Surface Treatments and Finishes</td></tr>
<tr><td>Key vocabulary
(5- 10 words)</td><td>Computer Aided Design (CAD), Computer Aided Manufacture (CAM), design fixation, inspiration, Pattern, Design, Function</td><td>Anthropometrics, Ergonomics, Research, Questionnaire, Design brief, Design specification, Evaluation, prototype</td><td>● Material Properties ● Component Selection ● Forces ● Stresses ● Sustainability ● Life Cycle Analysis ● Raw Material Extraction ● Renewable Resources ● Non - renewable Resources</td><td>● Shaping Techniques ● Forming Techniques ● Stock Forms ● Scales of Production ● One - off Production ● Batch Production ● Mass Production ● Joining Methods ● Finishing Techniques ● Surface Treatments ● Ecological Footprint</td></tr>
<tr><td>End of term assessment</td><td colspan="2">Final product assessment</td><td colspan="2">Section B topic tests</td></tr>
<tr><td>Planned trips / Clubs / links</td><td colspan="4">Trip to fabric shop
https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552/specification
https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552/specification/subject-content/specialist-technical-principles
https://www.bbc.co.uk/bitesize/examspecs/zby2bdm
https://www.technologystudent.com/</td></tr>
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Key Stage 4	**Year Group: 10 GCSE AQA DT Textiles**			
YR 10 Tx	**Summer Term**			
Key Concept	**GCSE NEA COURSEWORK NEA 50% GCSE**		**Knowledge**	
Content: **(Know what…)**	**<u>Design & Make a product</u>** The NEA (Non - Exam Assessment) coursework component of the AQA Design Technology GCSE provides students with the opportunity to apply their theoretical knowledge and practical skills in a project - based context. This coursework is worth 50% of the students GCSE assessment, allowing students to demonstrate their ability to research, design, develop, and manufacture a product that meets a specific need or solves a particular problem. The NEA encourages creativity, critical thinking, and project management skill s		**<u>Section C – Designing & Making Principles</u>** Design & Making Principles focuses on the practical aspects of design and manufacturing, providing students with the skills and knowledge necessary to take a concept from initial idea to finished product. This section emphasises creativity, problem - solving, and the application of theoretical knowledge in real - world contexts. By mastering these principles, students will be equipped to create innovative and functional designs that meet specific needs and constraints.	
Skills: **(Know how…)**	Section A - Identifying & investigating design possibilities Section B - Producing a Design Brief and Specification Section C - Generating Design Ideas Section D - Developing Design Ideas Section E - Realising Design Ideas Section F - Analysing and Evaluating		● Investigation, Primary and Secondary Data ● Environmental, Social, and Economic Challenge ● The Work of Others ● Design Strategies ● Communication of Design Ideas ● Prototype Development ● Selection of Materials and Components ● Tolerances ● Material Management ● Tools and Equipment	
Key vocabulary **(5- 10 words)**	● Design Brief ● Design Specification ● Primary Research ● Secondary Research ● Idea Generation ● Sketching ● Prototyping ● Computer - Aided Design ● Iterative Development	● Manufacturing ● Materials Selection ● Tools and Equipment ● Safety ● User Needs ● Market Analysis ● Evaluation ● Testing	● Investigation ● Primary Data ● Secondary Data ● Sustainability ● Social Responsibility ● Economic Viability ● Design Trends ● Design Movements ● User - Centred Design ● Iterative Design ● Brainstorming	● Sketching ● Prototyping ● Technical Drawing ● CAD (Computer - Aided Design) ● Visual Presentation ● Design Brief ● Design Specification ● Material Selection ● Tolerance
assessment	Ongoing assessment. Each section marked and whole class feedback given for improvements to be mad		Section C Topic Tests Year 10 Assessment - Mock Exam	

Planned trips / Clubs / links	Afterschool Catchup sessions https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552/specification https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552/specification/subject-content/designing-and-making-principles https://www.bbc.co.uk/bitesize/examspecs/zby2bdm https://www.technologystudent.com/

Key Stage 4 **Year Group: 11 GCSE AQA DT Textiles**

Students will complete their NEA coursework which amounts to 50% of their final grade before external moderation. Students will develop an understanding and gain confidence in exam techniques and practise exams skills required for the terminal paper based on their theory and practical knowledge from the last 2 years.

YR 11 Tx	**Autumn Term**	
Key Concept	**GCSE NEA COURSEWORK NEA 50% GCSE**	**Knowledge**
Content: **(Know what…)**	**NEA Section A: Identifying and investigating design possibilities** ● understanding user needs and exploring the context. **NEA Section B: Producing a design brief and specification** ● setting out clear aims and success criteria. **NEA Section C: Generating design ideas** ● using creative strategies and sketching a range of possible solutions. **NEA Section D: Developing design ideas** ● refining ideas through modelling and feedback	● Completing the NEA (Non-Exam Assessment) project: ● research, ● design development, ● modelling, and ● starting the final prototype. ● Focus on user needs, environmental impact, and iterative design. ● How to justify and present design decisions effectively
Skills: **(Know how…)**	● Research and analysis of problems, users, and existing products. ● Writing a focused design brief and specification. ● Creative thinking and iterative design development. ● Using CAD, modelling techniques, and drawing skills to communicate design ideas.	● Researching and analysing existing products. ● Generating and developing creative design ideas. ● Communicating ideas clearly using sketches, CAD, and models. ● Planning and managing time effectively during a long-term project.
Key vocabulary (5- 10 words)	Contextual Challenge, Design Brief, Specification, User Needs, Primary/Secondary Research, Ergonomics, Sustainability, Iterative Design, Annotated Sketches, CAD/CAM, Accuracy, Joining Techniques, Finishing, Quality Control, User Feedback, Performance Testing, Justification, Innovation, Refinement, Functionality, Aesthetics	

End of Half term assessment	NEA Assessments Sections A - D	Year 11 Mock Exam
Planned trips / Clubs / links	https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552/specification https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552/specification/scheme-of-assessment https://www.bbc.co.uk/bitesize/examspecs/zby2bdm https://www.technologystudent.com/	

YR 11 Tx	**Spring Term**	
Key Concept	**Design & Making Skills**	**Knowledge**
Content: **(Know what…)**	**NEA Section E: Realising design ideas** ● selecting materials and making a final prototype with accuracy. **NEA Section F: Analysing and evaluating** ● testing the product and reflecting on how well it meets the brief and specification.	● Completing the NEA: final making and evaluation. ● Evaluating their prototype against the specification. ● Finalising and presenting design ideas and project work for submission.
Skills: **(Know how…)**	● Safe and accurate use of tools, machinery, and processes. ● Time planning and quality control. ● Critical reflection and evaluation against specification points. ● Documenting their process and decisions clearly.	● Accurate measuring, marking out, and using tools safely and independently. ● Quality control and testing products. ● Reflecting on work and making improvements. ● Writing a detailed and balanced evaluation.
Key vocabulary (5- 10 words)	Tolerance, accuracy, finish, evaluation, specification, quality assurance, testing, feedback, functionality, aesthetics. Accuracy, tolerance, finish, manufacturing, testing, evaluation, specification, client feedback, quality assurance.	
End of Half term assessment	NEA Assessments Sections E - F	
Planned trips / Clubs / links	https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552/specification https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552/specification/scheme-of-assessment https://www.bbc.co.uk/bitesize/examspecs/zby2bdm https://www.technologystudent.com/	

YR 11 Tx	Summer Term
Key Concept	**Exam Knowledge**
Content: **(Know what…)**	Revision and recap of key theory from the AQA specification in preparation for the written exam. ● Technical Principles ● Specialist Technical Principles ● Designing and Making principles Applying knowledge to practice exam questions and scenarios.
Skills: **(Know how…)**	● Applying technical knowledge in unfamiliar design contexts. ● Reading questions carefully and using command words correctly. (e.g. “justify”, “evaluate”). ● Structuring extended written responses for the exam. ● Time management in exam conditions.
Key vocabulary **(5- 10 words)**	Composite, alloy, renewable, lifecycle, inclusive design, obsolescence, just-in-time (JIT), market pull, design for manufacture (DFM), specification. sustainability, life cycle assessment, inclusive design, commercial manufacture, CAD/CAM, client needs
Planned trips / Clubs / links	https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552/specification https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552/specification/scheme-of-assessment https://www.bbc.co.uk/bitesize/examspecs/zby2bdm https://www.technologystudent.com/