

CoDA Curriculum – Design + Innovation

Design & Technology (AQA GCSE)

Timber Based Products



Improving the life chances of all students

Students will be taught to...	
<ul style="list-style-type: none"> demonstrate their understanding that all design and technological activity takes place within contexts that influence the outcomes of design practice develop realistic design proposals as a result of the exploration of design opportunities and users’ needs, wants and values use imagination, experimentation and combine ideas when designing develop the skills to critique and refine their own ideas whilst designing and making communicate their design ideas and decisions using different media and techniques, as appropriate for different audiences at key points in their designing develop decision making skills, including the planning and organisation of time and resources when managing their own project work develop a broad knowledge of materials, components and technologies and practical skills to develop high quality, imaginative and functional prototypes be ambitious and open to explore and take design risks in order to stretch the development of design proposals, avoiding clichéd or stereotypical responses consider the costs, commercial viability and marketing of products demonstrate safe working practices in design and technology use key design and technology terminology including those related to: designing, innovation and communication; materials and technologies; making, manufacture and production; critiquing, values and ethics. 	

Students will be taught and assessed on their ability to...					
AO1	Identify, investigate and outline design possibilities	Identifying & investigating design possibilities		Producing a design brief & specification	
AO2	Design and make prototypes that are fit for purpose	Generating design ideas	Developing design ideas		Realising design ideas
AO3	Analyse and evaluate	Analysis		Evaluation	

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Y10	Unit 1 New Technologies: <ul style="list-style-type: none"> Industry and enterprise Sustainability and the environment People, culture and society Production techniques and systems Informing design decisions Practical – New and emerging technology research project. Investigate recent technologies and where they are used and how successful they are.	Unit 3 Materials Define, categorise and describe the primary sources of materials for producing: Papers & Boards <ul style="list-style-type: none"> Timbers Metals and alloys Polymers Textiles Practical - Box Project. Marking out, cutting and making a simple box using different types of joints. Unit 4 Common Specialist Tech Principles including: <ul style="list-style-type: none"> Forces & Stresses Improving functionality Ecological & social footprint The 6 R’s Scales of production 	Unit 2 Energy, Materials, Systems and Devices: <ul style="list-style-type: none"> Energy generation Energy storage Modern materials Smart materials Composite materials and technical textiles Systems approach to designing Electronic systems processing Mechanical devices Practical – Mechanical and electrical systems research project. Investigate an internal combustion engine making links to its electrical and mechanical systems.	Unit 5B Timber: <ul style="list-style-type: none"> Sources and origins Working with timbers Commercial manufacturing None Exam Assessment (NEA) mock practice to familiarise pupils with NEA process Practical – Phone holder project to consider lamination and surface finishing techniques.	Unit 6 Designing Principles: <ul style="list-style-type: none"> Investigation of primary & secondary data The work of others Design strategies Communication of design ideas Practical – Drawing and designing skills are examined. Isometric, perspective and orthographic projection with some styrofoam modelling.	Unit 7 Making Principles including: <ul style="list-style-type: none"> Selection of materials and components Tolerances Material management Tools, equipment, techniques and finishes Surface treatments and finishes None Exam Assessment (NEA) mock practice to familiarise pupils with NEA process Around June 1st: Pupils are given the NEA contextual challenges and work on section A.
Y11	NEA based on relevant contextual challenge: <ul style="list-style-type: none"> Power point folder work (20 – 30 sheets) Computer aided design solutions Hand drawn design ideas Practical modelling Practical prototype solution to contextual challenge 			Exam Preparation <ul style="list-style-type: none"> Discussions of previous units to complete any missing knowledge (driven by pupils RAG rating of each delivered unit) Practice of exam style questions Mock exam practice using previous exam papers 		