Design & Technology

Intent

GCSE Design and Technology will prepare students to participate confidently and successfully in an increasingly technological world. Students will gain awareness and learn from wider influences on Design and Technology including historical, social, cultural, environmental, and economic factors. Students will get the opportunity to work creatively when designing and making and apply technical and practical expertise. This GCSE allows students to study core technical and designing and making principles, including a broad range of design processes, materials, techniques, and equipment. They will also have the opportunity to study their specialist technical principles in greater depth. Through Non-Examination style skills-based projects, students will get the opportunity to build and apply a repertoire of knowledge, understanding and skills to design and make high-quality prototypes and products for a wide range of users.

Year 11

	Unit 1: Non- Examination Assessment (September-April)	Unit 2: Paper 1 Revision (September-November)	Unit 3 Paper 1 Revision (January-February)	Unit 4: Paper 1 Examination Preparation (April-June)
Knowledge (facts, information, concepts and key terminology)	• Use primary and secondary research data to identify a design problem, an intended user/ client to ascertain needs & requirements. • Summarise findings to write a design brief specification for the problem identified. • Generate design ideas using a range of different design strategies to avoid fixation. • Manufacturing processes including CAD/CAM to shape, join and finish materials using subject specialist manufacturing processes. • Test, communicate, record, and justify design and manufacturing decisions and evaluate the outcome.	Revisit the Specialist Technical principles & Design & Making Principles • Selection of materials or components • Sources and origins • Using and working with materials • Specialist tools, equipment, techniques, and processes • Surface treatments and finishes • Investigation, primary and secondary data • The work of others designers & design companies • Design strategies and communication of design ideas	Theory content will be revisited with a greater focus on weaker topics areas identified from Mock 1: • Section A: Core Technical principles • Section B: Specialist Technical principles • Section C: Designing and making principles	All theory content revisited with a greater focus on weaker topics from Mock 2: • Section A: Core Technical principles • Section B: Specialist Technical principles • Section C: Designing and making principles
Understanding (ability to connect and synthesise knowledge within a context)	• How to respond to a design context through focused analysis. • Summarise findings of primary & secondary investigation sources to write a design brief and specification. • Develop design proposals for an identified user using a range of appropriate techniques. • Use specialist product design tools and equipment to accurately manufacture prototype products safely by applying knowledge to shape, join and finish materials. • Test, evaluate and refine ideas and practical work as it develops and review success & areas for improvement for the intended product use and its user to ensure their product meets the requirements of the context/user.	• Identify and describe materials and their properties including suitability for form, function, performance, and aesthetics. • Know how specialist tools are used to cut, shape, join and finish materials to manufacture products. • How to analyse mathematical data from sources. • Recognise the work of other designers and design companies and its influences. • How to produce 3D drawings & schematic diagrams to present work.	• Section A: Core Technical principles • Section B: Specialist Technical principles • Section C: Designing and making principles	• Section A: Core Technical principles • Section B: Specialist Technical principles • Section C: Designing and making principles
Skills (successful application of knowledge and understanding to a specific task)	• Analyse the design context and primary & secondary existing research to identify a need and potential user to formulate ideas that are fit for purpose. • Create a design Brief & Specification • Apply knowledge of different design strategies and material properties to develop design proposals that fulfil the requirements of the design context and identified user. Through formal and informal 2D/3D drawing including CAD, systems and schematic diagrams and models and schedules. • Identify the correct tool/ machine/ process for a material apply knowledge to cut, shape, join, finish and materials to manufacture a prototype product. • Test, evaluate and refine ideas as it develops and review success & areas for improvement.	• Retrieval practice • Exam practice and technique using past papers • Revision skills	• Retrieval practice • Exam practice and technique using past papers • Revision skills	• Retrieval practice • Exam practice and technique using past papers • Revision skills
Formal Assessments (those done by all/vast majority of the cohort)	Teacher assessment will take place following the completion of each assessment objective and work will be marked and internally moderated prior to AQA submission. **A01:** Identify, investigate, and outline design possibilities to address needs and wants **A02:** Design & make prototypes that are fit for purpose **A03:** Analyse & evaluate design decisions.	Mock 1 Examination **AO4:** Demonstrate and apply knowledge and understanding of all the Design & Technology principles.	Mock 2 Examination **AO4:** Demonstrate and apply knowledge and understanding of all the Design & Technology principles.	Public examination

By the end of the year students on course for at least a grade 5 in Design & Technology will…

- Demonstrate and apply mostly accurate and appropriate knowledge and understanding of the principles of design and technology in familiar and unfamiliar situations.
- Develop functioning intentions of prototypes; demonstrate safe and effective technical skills that are appropriate for the prototype/s.
- Apply appropriate technical language and methods of communication, such as formal drawings and annotated sketches including CAD and modelling.
- Analyse and evaluate design decisions and outcomes to draw plausible conclusions supported by some evidence.
- Use some mathematical skills and scientific knowledge to make accurate calculations and inform choices.