GCSE Design & Technology

Year 10

Curriculum 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 specialist technical principles in greater depth. Through a range of pilot projects, students will get the opportunity to build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users.

MOSELEY PARK

Designing and Making Skills, acquiring knowledge and developing understanding – Core Technical principles/Specialist Technical principles

	Term 1 & 2 Introduction / Communication of Design Ideas – Minor Project		Term 3 & 4 Design Strategies and Contexts		Term 5 Technological Perspective	Term 6 NEA Exploring the Contexts
Interleaving	Designing and communication skills, specialist technical principles and safe working practices					
Practical Skills	Revision of established workshop skills and safety/risk assessment; Using and working with materials; 2D & 3D Technical drawing.	Investigating primary and secondary data; CAD Drawing & Laser-cutting; Forming Polymers; CAD Software; CAM Manufacturing.	Prototype modelling; Dimensional accuracy and working to a tolerance; Measuring and marking out; Cutting and shaping of material to minimise waste-fabrication.	Investigating primary and secondary data; The use of production aids and specialist tools/processes; Application of surface finishes/treatments.	Material manipulation and testing; Risk assessment and safe practice.	Investigating primary and secondary data; Market research.
Knowledge	Health and Safety; Materials and their working properties; Classification & Categorisation of types.	Anthropometrics and Ergonomics; Material management; Specialist tools and equipment; Design Strategies.	The work of others; Sustainability and the environmental challenge; Material sources & stock forms; Specialist processes.	New and emerging technologies; Developments in new materials; Materials and their working properties.	Energy and storage; Ecological and social footprint; Mechanical devices; Systems approach to designing; Forces and stresses.	Designing and making principles; Design Strategies.
Understanding	An overview of materials and their properties; How materials are cut, shaped and formed; Graphic communication.	How to develop prototypes in response to a client wants/needs; How to shape and form using technical expertise; Accuracy working to a tolerance.	Aesthetics; Critical reflection & feedback; Modifications; Fabrication of timbers; Material management.	Iterative design; Industry and enterprise; Scales of Production.	Fossil fuels and energy; Different types of movement; Changing magnitude and direction of force.	Specialist Technical principles; Designing and making principles.
Skills	Investigate/Identify; Communication; Analyse; Generate Ideas	Investigate/Identify; Communication; Analyse; Generate Ideas; Realisation	Analyse; Generate Ideas; Realisation; Evaluate	Investigate/Identify; Generate Ideas; Realisation; Evaluate	Investigate/Identify; Analyse; Evaluate	Investigate/Identify; Communication; Analyse; Evaluate
Assessment	Verbal and Written feedback from teacher. Self and peer assessment. Group evaluation.	Verbal and Written feedback from teacher. Self and peer assessment. Group evaluation.	Verbal and Written feedback from teacher. Self and peer assessment Group evaluation.	Verbal and Written feedback from teacher on Task Tracker sheet. Self and peer assessment.	Verbal and Written feedback from teacher on Task Tracker sheet. Self and peer assessment.	Verbal feedback from teacher. Self and peer assessment. Group evaluation