Subject Overview D&T year 10

Year										
	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6				
Topic	Core Technical Principals	Core Technical Principals	Core Technical Principals	Specialist Technical Principals	Specialist Technical Principals	Specialist Technical Principals				
Key Concepts	New and emerging technologies. Design Strategies. Communication of design ideas. Energy generation and storage	Systems approach to designing. Mechanical devices. Developments in new materials. Developments in new materials	Communication of ideas. Ecological and social footprint. Communication of idea. Sources and origins. Stock forms types and sizes	Manufacturing specification/working drawings. Tools, equipment and processes Quality control.	Generating imaginative and creative designs. How to write a design specification Communication of design ideas. Prototype development	Tolerances. Material management. Selection of materials and components. Specialist techniques and processes				
Learning Objectives	Robotics, automation and production in industry. Production techniques and systems — automation. Market pull and technology push. The environment, Ethics	Systems, Types of motion. Modern materials Smart materials. Composite materials. Technical Textiles. Material properties. Functionality. Aesthetics.	Designing. The six Rs, Properties of materials. Modifying properties for a purpose. Commercially available types and sizes of materials.	Specialist techniques and processes. Material management. Tolerances. Surface treatments and finishes	Isometric and perspective designs Exploded diagrams Working drawings Computer-based tools Audio and visual recordings Modelling	Working accurately Cutting, shaping and forming materials to tolerance Planning the cutting of materials to minimize waste. Selection of the correct hand tools and machinery				

		Environmental factors. Availability. Cost. Social factors. Ethical factors.			Satisfy the requirements of the brief Functionality Aesthetics Potentially marketable	Safe use of tools Selection and use of specialist techniques (used to shape, fabricate,
Key Vocabulary	Glossary	Glossary	Glossary	Glossary	Glossary	Glossary
Formative Assessment Summative Assessment	Loo stakes quiz and comprehension tasks End of unit tests	Loo stakes quiz and comprehension tasks End of unit tests	Loo stakes quiz and comprehension tasks End of unit tests	Loo stakes quiz and comprehension tasks End of unit tests	Loo stakes quiz and comprehension tasks End of unit tests	Loo stakes quiz and comprehension tasks End of unit tests
Scaffolding for SEND	Glossaries, Disciplinary reading, Knowledge organiser test.	Glossaries, Disciplinary reading, Knowledge organiser test.	Glossaries, Disciplinary reading, Knowledge organiser test.	Glossaries, Disciplinary reading, Knowledge organiser test.	Glossaries, Disciplinary reading, Knowledge organiser test.	Glossaries, Disciplinary reading, Knowledge organiser test.
Careers	Engineering, Construction, design.	Engineering, Construction, design.	Engineering, Construction, design.	Engineering, Construction, design.	Engineering, Construction, design.	Engineering, Construction, design.
Links (prior knowledge, future knowledge)	Building from ks3 and preparing for NEA	Building from ks3 and preparing for NEA	Building from ks3 and preparing for NEA	Building from ks3 and preparing for NEA	Building from ks3 and preparing for NEA	Building from ks3 and preparing for NEA