Curriculum Plan & Knowledge Mapping

SUBJECT: ___DT_____ **YEAR GROUP**: _11___

Curriculum Intent:
Students to look at the design problems they can solve. Students will learn how to be able to define design problems for themselves and address the solutions to them. The designing activities undertaken will enable our students to consider the needs of individuals and society within both our own community and the wider world.

Key Knowledge and End Points for Academic Year: (What are the fundamental concepts and ideas that students must have grasped by the end of the Academic Year)

- To demonstrate the necessary knowledge, understanding and skills required to undertake iterative design processes of exploring, creating and evaluating.
- To demonstrate the mathematical and scientific knowledge, understanding and skill and apply in design and technology.
- Technical principles - the impact of new and emerging technologies on industry, enterprise, sustainability, people, culture, society and the environment, production techniques and systems
- Designing and making principles - understand that all design and technological practice takes place within contexts which inform outcomes, demonstrate an ability to write a design brief and specifications from their own and others' considerations of human needs, wants and interests

Term	**Termly Focus** (Summary eg texts/ overview))	**Core Knowledge & Threshold Concepts** *The minimum all students should know in order to access later concepts*	**No excuse vocabulary**	**Revisiting Opportunities** *(e.g. when past topics can be revisited)*	**Depth and Breadth:** Links to wider curriculum & SMSC *(e.g. different subjects or key stages)*
Autumn 1	NEA Contextual Challenge Investigate Specification Design	Continuation of NEA Investigate This includes investigation of needs and research, and a product specification	Carbon footprint Collaboration Linkages Input – process – output Simple machines Levers Cam and follower Gears Belts and pulleys Life cycle analysis	Design Process	**ICT –** portfolios completed using ppt **SMSC-** sources relate to cultural, social, historical, contemporary, environmental and creative contexts.
Autumn 2	NEA Contextual Challenge Design Review Develop	Design This includes producing different design ideas, review of initial ideas, development of design ideas into a chosen design, communication of design ideas and review of the chosen design	Social change Economic changes Design fixation Generation Product Evolution Iterative design Collaboration User-centred	Revisiting all topics from year 10 mini-NEA project	**Social and moral issues** – exploring the ethical decisions made by companies to be more sustainable

			Assembly drawings		
Spring 1	NEA Manufacture	Make This includes manufacture, and quality and accuracy	Quality assurance Quality control Life cycle assessment Evaluate	Workshop rules Health and safety Revisiting all topics from year 9 and 10	
Spring 2	NEA Manufacture Testing Evaluation	Evaluate This includes testing and evaluation.	Metals Deforestation Modern material Smart material Planned obsolescence Prototype	Workshop rules Health and safety Revisiting all topics from year 9 and 10	**Science** – tolerance **Maths -** measurements, conversions, scaling
Summer 1	Written Paper Preparation	Section A Core content Section B Knowledge and understanding of specialist material	Composites Energy Sources Properties Design Strategies Manufactured Boards Environmental Impact Finishing Techniques Paper & Board Manufacturing Techniques Tools & Components	Revisiting topics from year 9 and 10	**Science –** gears, levers, velocity Energy generation and storage Electronic systems processing Mechanical devices