Year 11 Design and Technology GCSE Curriculum Map – 2022-23

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1
Year 11	**Section A: New and Emerging technologies Section C: Designing and Making Principles**	**Section A: Energy Generation and storage Section C: Designing and Making Principles**	**Revision for the written Exam and Completing the NEA**	**Revision for the written exam**	**Revision for the written exam**
Knowledge	• Automation/Use of Robotics • Smart buildings. • Crowdfunding, virtual marketing, Co-operatives and Fairtrade. • Finite, Non-finite, disposal of waste. • Market Pull and Technology Push. • Changes in fashion/trends. • How products are designed and made to avoid having a negative impact on different groups of people e.g. elderly. • What negative impacts do new products have on: continuous improvement, efficient working, pollution and global warming? <u>NEA Knowledge</u> ***Developing design ideas*** • Modelling - different types of modelling - Card, Styrofoam, Virtual modelling. • Developing and evaluating a prototype. How can we satisfy the requirements of a brief/specification, how can we demonstrate innovation?	• Production techniques and their use. • Planned obsolescence, design for maintenance, ethics and the environment. <u>Energy Generation and Storage</u> • How is power generated from coal, gas and oil? • Nuclear power - how is it generated? • How is energy generated from renewable sources - wind, solar, tidal, hydroelectrical, biomass? • Energy storage systems- kinetic pumped storage systems. Alkaline and rechargeable batteries. **Mock examination** <u>NEA Knowledge</u> ***Realising design ideas*** • Selection of Materials and Components. • Tolerances. • Materials Management. • Specialist tools and equipment. • Specialist technique and processes.	<u>NEA Knowledge</u> ***Analysing and Evaluating*** • Testing products. • Developing products. Revise: • Material Categories. • Mechanical devices. • Systems approach to designing. • New and emerging technology. • Energy generation and storage. • Developments in new materials.	Revise: Timber and Textiles • Sources and Origins. • Sources and origins. • Environmental issues relating to these themes. • Ecological Issues. • Forces and Stresses. • Different types of production.	• Practise of Section C exam questions - Revision and recap. • The designs of others. • Design Strategies. • Scales of production. • Specialist techniques and processes – focus on textiles and timbers. • Revision/Exam Practice Techniques. **Formal Examination**