Curriculum Map: Design & Technology Year 11

	Autumn 1 **2.1 Design ideas** **2.2 Review of initial ideas** **2.4 Communication of design ideas**	**Autumn 2** **2.3 Development of design ideas into a chosen design** **2.5 Review of chosen design**	**Spring 1 & 2** **3.1 Manufacture** **3.2 Quality and accuracy** **4.1 Testing and evaluation** **Spring 2**	**Summer 1**
Content Declarative knowledge 'I Know'	2.4a A range of communication techniques and media to present design ideas, including: a freehand sketching (2D and/or 3D) b annotated sketches c cut and paste techniques d digital photography/media e 3D models f isometric and oblique projection g perspective drawing h orthographic and exploded views i assembly drawings j system and schematic diagrams k computer-aided design (CAD) and other specialist computer drawing programs.	2.3a The user group needs and preferences, of design ideas, conducting further research where necessary.	3.1b The selection and application of: a materials b range of tools, including marking-out tools, hand tools and machinery c range of techniques d fixtures, templates, jigs and/or patterns e components f surface treatments and finishes used in the manufacture of the prototype.	Revision and exam preparation: Section A: Core A mixture of different question styles, including open-response, graphical, calculation and extended-open-response questions. Section B: Timbers A mixture of different question styles, including open-response, graphical, calculation and extended-open-response questions.
Skills Procedural Knowledge 'I know how to'	2.1a Produce a range of design ideas that address the criteria in the design brief and product specification.	2.5a Produce a chosen design solution for the product that meets the design brief and product specification. 2.5b Consider the materials, techniques and processes required to produce the chosen design solution.	3.1a Produce a prototype that meets the requirements of the design brief and product specification, showing a wide range of making skills with precision and accuracy. 3.1c Demonstrate safe working practice, for themselves and others. 3.2a Measure the degree to which the prototype performs as intended.	Apply my knowledge and understanding of design & technology to answer exam questions with the following command words: Calculate Describe Discuss Evaluate Explain

			3.2b Accurately assemble and finished the prototype to a high quality. 4.1b Analyse the results of the prototype testing. 4.1c Evaluate whether the prototype meets the product specification.	Give/State/Name Identify Use annotated sketches to show
Strategies Conditional Knowledge 'I know when to'	2.1c Apply different design approaches, including: a materials b components c processes d techniques.	2.1b Consider a range of issues when producing the design ideas, including: a budget b aesthetics c cultural issues d sustainability issues. 2.3d Analyse and evaluate the design ideas, to inform choice as to the chosen design to take forward. 2.5c Incorporate feedback from research into the chosen design.	4.1a Analyse the prototype against the product specification by conducting a variety of tests under realistic conditions, to ensure fitness for purpose. 4.1d Evaluate the sustainability of the final prototype by carrying out a life cycle assessment (LCA), in order to assess its impact on the environment.	Use key design and technology terminology, including those related to: designing, innovation and communication; materials and technologies; making, manufacture and production; critiquing, values and ethics.
Key Questions	How can you develop realistic design proposals as a result of the exploration of design opportunities and users' needs, wants and values? How can you demonstrate imagination when designing? How should you communicate your design ideas and decisions using different media and techniques, as appropriate for different audiences at key points in the design process? How can you critique and refine your own ideas while designing?	How can you demonstrate experimentation when designing? How can you be ambitious and open to explore and take design risks in order to stretch the development of design proposals, avoiding stereotypical responses? How can you demonstrate decision-making skills, including the planning and organisation of time and resources when managing your own project work?	Which materials, components, technologies, and practical skills can be used to develop high-quality, imaginative and functional prototypes? What is the commercial viability of your product? How can you critique and refine your own ideas while making?	What techniques can I use to embed my knowledge and understanding of design & technology?

Assessment topics	AO1 Investigate, AO2 Design & Prototype, AO3 Analyse and Evaluate, AO4 Core Technical Skills	AO1 Investigate, AO2 Design & Prototype, AO3 Analyse and Evaluate, AO4 Core Technical Skills	AO2 Design & Prototype, AO3 Analyse and Evaluate, AO4 Core Technical Skills	Section A: Core 40 marks (including 10 marks of calculation questions) Section B: Material categories 60 marks (including 5 marks of calculation questions)
Cross curricular links/Character Education	Art and Design - The characteristics, properties and effects of using different media, materials, techniques and processes, and the ways in which they can be used creatively. - Developing their ideas through investigations informed by selecting and critically analysing sources.	Maths - Arithmetic and numerical computation - Geometry and trigonometry Science - Use scientific vocabulary, terminology and definitions - Using materials Art and Design - Refining their ideas as work progresses through experimenting with media, materials, techniques and processes. Computer Science - Think creatively, innovatively, analytically, logically and critically.	**Science** - Life cycle assessment and recycling - Using materials	Maths skills fundamental to design and technology. Science skills, knowledge and understanding underpinning the theory and practice of design and technology.
	Cognitive skills • Problem solving • Systems thinking – decision making and reasoning. • Critical thinking –analysing, synthesising and reasoning skills. • ICT literacy • Communication skills • Collaborative problem solving • Adaptability • Self-management and self-development			