



Year 10					
Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
3.1.1. New & Emerging Technologies & NEA skills building Purpose: - To provide an introduction to theory elements of the specification focusing on topics that cross over into the mini NEA project and were delivered in Year 9 so builds upon prior knowledge. - To assess prior skills and to develop new ones in the form of generating design ideas and prototype modelling using initially cardboard as a quick material for 3D realisation.	3.1.2 Energy generation and storage & NEA skills building Purpose: - To engage with the theory elements of the specification focusing on topics that cross over into the mini-NEA project. - To generate design ideas and prototype modelling using initially cardboard, foam etc as a quick material for 3D realisation. - To focus on skills building for sections C&D of the NEA worth 40% of the NEA total. Overview of the knowledge and skills covered in this unit: - New and emerging technologies	3.1.4 Systems approach to designing. 3.1.5. Mechanical devices and 3.1.3 Development in new materials & NEA skills building Purpose: - The purpose of these (units) are for students to understand how we generate and store energy. - To understand sustainability and green issues. - To understand inputs, outputs and processes as well as how mechanical devices can change one form of force to another. - To explore through practical tasks materials and learn about their working properties.	3.1.5. Mechanical devices, 3.1.6. materials and their working properties and timbers theory in depth & NEA skills building Purpose: - The purpose of this unit is for students to understand mechanical devices and timbers in terms of their sources/origins, properties, stock forms and surface treatments/finishes. - This unit will be taught through a range of theory and practical lessons. Overview of the knowledge and skills covered in this unit: - Energy generation & storage - New & emerging technologies	3.2.2. Forces and stresses, 3.1.6 materials and their working properties and 3.2.7. Scales of Production & NEA skills building Purpose: The purpose of these (units) are for students to understand forces and stresses applied to materials and products as well as working properties of several materials focusing on polymers and timbers. Linking the above to scales of production and industrial techniques. Overview of the knowledge and skills covered in this unit: - Forces & stresses - Ecological & social issues in design & manufacturing - Scales of production - Shaping & forming	Unit 1 written paper (Mock exam) and Unit 2 NEA coursework. Purpose: - Re-teach theory in preparation for the mock exam. - Start of NEA coursework which is worth 50% of the final GCSE grade. Introduction to the three briefs and selecting one to respond to. - HT6 focuses on Section A - Research. Overview of the knowledge and skills covered in this unit: - Students will be given the briefs from the exam board (3 contextual challenges). - Students are to pick one to focus on for



Overview of the knowledge and skills covered in this unit: • Sustainability and the environment • Industry and enterprise • People, culture and society issues • Production techniques and systems • Technology push and market pull • Product lifecycle • Human factors (ergonomics and anthropometrics) • 2D & 3D drawing techniques (including 3rd angle orthographic) How will this be assessed? • Baseline assessment • Practical assessment (check points) • End of term written assessment	• Energy generation • Materials theory (smart, modern, papers and board and timber) • Material life cycle • Design processes (iterative design) • Modelling techniques and processes • Paper and board theory How will this be assessed? • Practical assessments (check points using the NEA criteria) • End of term written assessment	Overview of the knowledge and skills covered in this unit: • CAD & CAM • Quality control and Quality assurance • Systems approach to designing • Forces and stresses • Mechanisms • Polymers & timbers • Manufacturing processes How will this be assessed? • Practical assessment (check points using the NEA criteria) • End of term written assessment	• System approach to designing • Mechanical devices • Materials & their working properties • Commercial manufacturing processes & techniques • Fixtures & fittings for timber products How will this be assessed? • Practical assessment (check points using the NEA criteria) • End of term written assessment	techniques • Maths (area & volume) • Designing and making principles How will this be assessed? • Practical assessment (check points using the NEA criteria) • End of term written assessment	their NEA. • Start Section A research. • Revision and re-teaching areas in preparation for the mock exam. How will this be assessed? • Assessed against the grading criteria from the exam board (NEA) • Mock exam
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