Year 13 Design Technology: Product Design Curriculum

	AUT1	AUT2	SPR1	SPR2	SUM1
Topic:	**Non-Examined Assessment (NEA)** Brief & Specification Idea Generation First generation modelling	**NEA** Material trials/construction technique investigations Finalise design and production of Working drawings Production planning Realisation		**NEA** Realisation and diary of production	**Non-Examined Assessment-Completion and submission (50% of final grade)** **Exam 1 – Technical Principles** Exam 2 – Design and Making Principles
Knowledge Covered:	How to write a concise brief and specification to guide a project to address the needs of the intended user. Rapid idea generation – Students will be able to develop a range of ideas in response to their research and develop more formal concepts to rationalise proposals. Development of CAD drawings, Orthographic and Isometric views of final idea. Exam Preparation – Students will develop understanding of: Design Influences Designers and their work How designers can be influenced by cultural changes, technology, social, moral and ethical issues. Scale of production of manufactured items Health & Safety in commercial settings	Students develop a manufacturing specification and undertake modelling exercises to test, design features, construction details and test material properties. Realisation of prototype design. Exam Preparation – Students will develop understanding of: How products are designed to conserve energy, materials and components Sustainability in Design Quality control and quality Assurance in design Modern and industrial commercial practices CAD and CAM Digital Design and Manufacture Intellectual property		Realisation of prototype design. Exam Preparation – Students will develop a series of case studies to be used in the exams as primary examples of theory elements. Product Studies Product comparison Product Analysis	NEA – Students will complete the manufacture of the first-generation prototype of their design and test the outcome. Results will be analysed to determine success in relation to the original brief and specification, conclusions drawn and developments proposed. In preparation for the final build up to the written papers, it is important that students understand how to answer the questions along with having the knowledge and understanding needed to provide the correct answers. Exam 1 - • Focus on materials and their applications • Performance characteristics of materials • Enhancement of materials • Forming, redistribution and addition processes • Focus on materials and their applications • Performance characteristics of materials • Enhancement of materials • Forming, redistribution and addition processes • Manufacture maintenance repair and disposal • Enterprise and marketing • Design communication • Modern manufacturing systems Exam 2 – • Focus here on design methods and processes • Design theory • Technology and cultural change • Design processes • Focus here on critical analysis and evaluation • Design communication • Tools equipment and processes • Accuracy in design and manufacture • Focus here on responsible design

				• Design for manufacture and project management • National and international standards in product design Be aware of the importance of environmental issues in design and manufacture. Understand the responsibilities in the use of sustainable materials and components. Be aware of the environmental impact of packaging. Be aware of methods to conserve energy resources and the concept of circular economy.
Online resources:	https://alevelnotes.com/notes/physics/materials/material-properties http://www.mr-dt.com http://www.technologystudent.com			