GCSE Design Technology- Product Design
Course code: AQA 8552

Aims:
- To develop an awareness of the design process and the ability to consider the wider influences of Design and Technology including historical, social, cultural and environmental factors.
- To engage students creatively and to enable students in interpret a design brief in 2D and 3D forms.
- To develop high quality functional prototypes of ideas as a result of users' needs, wants and values.
- To develop knowledge and understanding of core technical and making principles, including material manipulation and manufacturing techniques.

Contents
Students will study theory content around Design and Technology practice alongside smaller workshop projects which is specialised in **one** chosen material area (Textiles or Product Design). In the summer term of Y10 students begin their final assessed project (NEA) which will count for 50% of the GCSE grade. This NEA task continues until Easter of Y11. Theory lessons and topics will continue throughout Y10 and Y11 study.

Exam paper – 50% (External exam)
In this unit students will be assessed on their knowledge of Design and Technology principles including materials, manufacturing, the design process, wider social influences of design and mechanical systems.
Core technical principles (New and emerging technologies, materials and properties, energy generation)
Specialist technical principles (One material area in more depth, Textiles or Product Design)
Designing and making principles (Drawing techniques, presentation, and manufacturing skills)

NEA (Non-exam assessment) – 50%
The NEA project will take between 30-35 hours to complete and will consist of a working prototype/practical outcome and a portfolio of approximately 20 pages of A3 paper. Students work will consist of an investigation into a contextual challenge, defining the needs and wants of an end user and will include research, developing a specification and generating design ideas. Students will make a final prototype of final design ideas.

Curriculum Map

Year	Curriculum Overview	Assessment
Year 10	**Term 1: New and emerging technologies, Energy generation and storage, specialist technical knowledge** In addition to weekly theory lessons students will design and make a small workshop project. **Term 2: Materials and systems, Tools, and manufacturing** Students will also start a practice NEA task to further embed design and make skills. Students will learn 3D CAD modelling. **Term 3: Designing skills, Specialist technical knowledge.** During the summer term students will also start the NEA contextual challenge. Before the summer break students will be expected to have completed research section of project	In Y10 students will be assessed internally with regular feedback and half termly tests to prepare for Y11 study. Workshop tasks in Y10 will be assessed in line with GCSE but will not count to final GCSE grade. **NEA project commences (50% of GCSE)**
Year 11	**Term 1:** Students will design, develop, and model their GCSE NEA ideas. Alongside NEA self-led project theory lessons will still feature **Term 2/3:** Students will manufacture a final prototype and complete testing and evaluation. On completion of 20 pages of coursework work is submitted to AQA.	NEA (Project coursework) – 50% of final GCSE Eternally set exam – 50% of final GCSE

Assessment

Exam paper – 50%
Core technical principles (all DT areas including woods, metals, plastics, textiles, paper and board)
Specialist technical principles (one are in more detail; wood, plastic or textiles)
Designing and making principles
Note: 15% of exam will be maths question

NEA (Non-exam assessment) – 50%
Design context will be given to students in Term 3 of Y10.

AO1, identify, investigate and outline design possibilities
(Develop a brief and research)   - 20 marks

AO2, Design and make prototypes that are fit for purpose
(Design and drawing)   -40 marks
(Making prototypes)   -20 marks

AO3, Analyse and evaluate
(Testing and evaluating)   -20 marks

Extended Learning:

Students studying GCSE Design Technology will be expected to complete extended learning to consolidate theory topics and to research around the wider issues with Technology and materials in society. Students will be expected to continue with design work set in class and to continue with high class presentation at home. Students will need to conduct research in real life settings such as client interviews, shop visits and product testing.

Connection to the JTFS Approach

Whole School Theme	How does *Design Technology* support this?
STRIPE	Enquirer skills to investigate how to respond to a given design brief. How could a design idea fulfil a set need? Students will need to be innovative in the ideas that are developed and use research to develop work further.
STEAM	Art skills will be needed to communicatee design ideas and to present work clearly and concisely. Maths does feature in the final Y11 exam and will be needed in measuring and working out materials needed. Students will need to cost and discuss commercial appeal of design ideas. There are links to science with the theory topics of energy, mechanisms, and forces.
Literacy	Students will develop a new technical vocabulary with subject specific words to do with designing, manufacture, and industry. Students will need to work independently in the development of the NEA coursework and be able to communicate a design idea well to an external examiner.
Numeracy	Numeracy is developed through use of measuring, costing materials and working out area and angles. Maths does count for 15% of final exam.
SMSC, British Values and Citizenship	Students will study the wider social and environmental Impact of Design Technology and the materials we use every day. Students will need to understand the need to design for disability and how different cultures influence fashion trends and tastes.