Altwood
Church of England School

Design Technology Department

Curriculum Overview - Year 10

The Big Picture:
The Design and Technology course is divided into two components. Component 1 is focussed on theory and it is called 'Design and Technology in the 21st Century', which culminates in written exam 50% of qualification at the end of year 11. During year 10 we learn the core theory knowledge through discussions, research and investigations tasks. The second component is a design and make task called 'NEA' (non-exam assessment). We develop pupils' abilities towards this by completing 3 short design and make tasks involving different material and manufacturing processes, mechanisms and sustainability issues and getting confident with the iterative design process.
AO1: Identify, investigate and outline design possibilities to address needs and wants
AO2: Design and make prototypes that are fit for purpose
AO3: Analyse and evaluate: • design decision and outcomes including for prototypes made by themselves and others • wider issues in design and technology
AO4: Demonstrate and apply knowledge and understanding of: • technical principles • designing and making principles

Term 1: Theory focus is the impact of new and emerging technology on Industry, enterprise, sustainability, people, culture and society. Design and make practise is on 3D sketching and graphical enhancement and 'USB Pen Drive' project part 1. **GREEN TASKS:** Sketchbook presentation and annotation. 3D sketching and graphical enhancement. The study of designers and movements. Product analysis. Generating a range of creative ideas. Modelling and developing ideas through foam and modelling clay. A mix of short answer, structured questions assessing pupils' knowledge and understanding.	Term 4: Theory focus is 'developments in modern and smart materials, composite materials and technical textiles' and 'natural and manufactured timbers' Design and make practice is ' wooden 'Box Project part 1 (wooden joinery and planning for making) **GREEN TASKS:** Sketchbook presentation and annotation. Practical woodworking skills. Manufacturing specification (working drawings, exploded drawings) Planning practical making: timings and Quality control A mix of short and extended writing questions assessing knowledge and understanding.
Term 2: Theory focus is 'how the critical evaluation of new and emerging technologies informs design decisions' and 'Polymers' Design and make practice is 'USB Pen Drive' part 2 and 'Marble Run' project part 1 (practical mechanisms) **GREEN TASKS** Sketchbook presentation and annotation. Modelling and developing ideas through CAD, Final assembly and quality control. Objective evaluation. Modelling mechanisms in cardboard. A mix of short and extended writing questions assessing knowledge and understanding.	Term 5: Theory focus is 'How electronic systems provide functionality to products and processes' and 'metals' Design and make practise is 'Box Project' Part 2 (pewter cast handle**)** **GREEN TASKS:** Sketchbook presentation and annotation. Practical mould making skills. Manufacturing specification (working drawings, exploded drawings) Planning practical making: timings and quality control A mix of short and extended writing questions assessing knowledge and understanding.

Term 3: Theory focus is how Energy is generated and stored in order to choose and use appropriately to make products and power systems', 'mechanisms' and 'papers and cards' Design and make practise is 'Marble Run' Part 2 (Marble run challenge) **GREEN TASKS**: Sketchbook presentation and annotation. Individual design and prototype task and Team working challenge. A mix of short and extended writing questions assessing knowledge and understanding.	Term 6: Theory focus is 'iterative design and NEA' Design and Make is start of NEA **GREEN TASKS:** Choosing and researching contexts. Assessment Criterion 'Identifying and investigating design possibilities' and 'Design Brief and Specification'. A mix of short and extended writing questions assessing knowledge and understanding.