

Year 10 Parent/Career subject information - subject guide to success

SUBJECT: **GCSE in DESIGN AND TECHNOLOGY**

Course Breakdown

Term 1	<p>Project: <u>Ornamental metal work.</u> Design, model and create an attractive and functional product from steel strip and sheet metal using hand tools and metal forming equipment. Explore commercial viability.</p> <p>Theory: Ferrous, non-ferrous metals and alloys. Sources, origin, manufacture, working properties, stock forms and surface finishes.</p>
Term 2	<p>Project: <u>Timber side table.</u> Create a side table from a given technical drawing by cutting wood joints and shaping timber using traditional hand tools and some power tools. Customise the table top and apply a suitable surface finish.</p> <p>Theory: Natural and manufactured timbers. Woodworking techniques, adhesives, fixtures and fitting, surface finishes.</p>
Term 3	<p>Project: <u>Adapted (Tooth) brush handle.</u> Using modelling materials, create a (tooth) brush handle that is better suited for people with for people with handling impairments.</p> <p>Theory: Papers and Card. Drawing techniques. Foam modelling techniques. Computer Aided Design. Anthropometrics and Ergonomics. Developments in modern and smart materials, composite materials and technical textiles.</p>
Term 4	<p>Project: <u>Clocks inspired by architecture.</u> Investigate traditional and modern architecture and create a wall /mantle/bedside clock which reflects a design style or movement. Use hand tools, machines and thermoforming equipment to shape thermoplastic polymers</p> <p>Theory: Investigating the work of other designers. Thermosetting and Thermoplastics polymers classification and methods of work.</p>
Term 5	<p>Project: <u>Alarm in a box.</u> Design a box using CAD software and make it using Computer Aided Machinery (laser cutter, CNC mill, 3D printer). Use programmable electronic components to make an alarm circuit and house this in the box.</p> <p>Theory: Electronic circuits and programmable components. Mechanical Components and devices. Determine changes in directions, establish gear ratios and calculate RPM</p>
Term 6	<p>Non-Examined Assessment (NEA) - AO1: <u>Identifying and Investigating Design Possibilities. Developing a Design Brief and specification.</u></p> <p>Theory: The role of the designer. Understanding the user's needs. Collecting and analysing data. Evaluating existing products. Environmental considerations. Social and economic challenges.</p>

Revision Resources

- WJEC Eduqas GCSE (9-1) Design and Technology – ISBN 978 1 5104 7169 6.
- www.technologystudent.com <http://www.mr-dt.com/>
- <https://www.bbc.co.uk/bitesize/examspecs/z4nfwty> (KS4 DT Eduqas)
- NEA app: <https://www.technologystudent.com/mobapps/nea1.pdf>

Revision Strategies

- *Continually discuss your progress with adults at home.*
- Use the subject resources on Teams and the websites listed.

Intervention/Catch up Sessions and Support

Catch up session are nominally on Friday 3-4pm. Please book this with Mr Smout. If you fall behind then you will be invited.