



The curriculum for this stage of students' education has been designed to be inclusive for all and build on the knowledge gained in KS3 where students should have produced creative work becoming increasingly proficient in designing, manufacturing using simple workshop tools and evaluating their own work. The aim is to increase their proficiency in the handling of different materials and their confidence to develop their own ideas and style; to extend their range of subject specific vocabulary and enable them to competently analyse and evaluate their own work, and that of others. Students will also acquire skills that can be applied to cross-curricular topics, allowing them to reflect on and explore topics in greater depth, fostering a love of D&T and its application across the whole curriculum.

**HALF TERM 1:** Students will investigate wood joints and design a Multi jointed candle holder for half the lesson time. The other half of the lessons will be covering specialist timbers theory.

**STUDENTS MUST KNOW:**

- Different joints, material finishes and application of surface finishes and their suitability in different timbers and manufactured boards.
- And understand the main processes involved in timber production, timber stock forms, types and sizes.
- And demonstrate school-based cutting, forming and jointing of timber.
- The advantages and disadvantages of timber compared to manufactured boards.

**HOW THIS WILL BE ASSESSED:**

Formal assessment based on working on the design of their candle holder. They will also be formally assessed on the theory side of the course with marked worksheets, tests and end of unit test 5B. Self/peer assessment opportunities and informal verbal feedback.

**HALF TERM 2:** Students will finish the manufacture of their candle holder during half of the lesson time. The second half of the time students will be focussing on Forces and stresses, improving functionality and scales of production.

**STUDENTS MUST KNOW:**

- How to apply different finishes to their candle holder, such as stains, paints and varnishes.
- How to accurately produce 4 basic wood joints; finger, cross halving, butt and screwed butt.
- How to recognize forces such as tension, torsion, compression and understand their impact on a material.
- And understand how to enhance materials to withstand forces and stresses to improve functionality.

**HOW THIS WILL BE ASSESSED:**

Formal assessment based on the manufacture of their candle holder. They will also be formally assessed on the theory side of the course with marked worksheets, tests and mini tests. Self/peer assessment opportunities and Informal verbal feedback.

**HALF TERM 3:** Students will start to design a mini metal work product for half the lessons. The other half of the lessons students will cover the theory of Ecology and social footprint.

**STUDENTS MUST KNOW:**

- How to mark out and cut steel.
- How to shape, treat and finish steel, such as quenching, bluing, powder coating.
- The impact greenhouses gases and carbon have in manufacturing.
- The need for social and governmental responsibility for pollution and safe working conditions.
- How to design for a sustainable future with their choices of materials and manufacturing techniques.

**HOW THIS WILL BE ASSESSED:**

Formal assessment based on the designs of their metal product, looking at creativity and functionality of the final product. They will also be assessed on the theory side of the course with marked worksheets, tests and mini unit tests. Self /peer assessment opportunities and informal verbal feedback.

**HALF TERM 4:** Students will continue with the manufacture of their metal product. They will also spend half the time looking at the 6Rs of design and sustainability. Unit 4.

**STUDENTS MUST KNOW:**

- The hierarchy in responsible and sustainable design.
- The role consumers play in reducing waste.
- The demand on finite resources when designing and planned obsolescence of a product.
- How to use heat treatment to change the structure of metal and how this affects its physical characteristics.

**HOW THIS WILL BE ASSESSED:**

Formal assessment based on the final metal product, on the accuracy of finish and fit for purpose. The theory side of the course will be assessed by using mini quizzes and an end of unit 4 assessment. Self/peer assessment opportunities and informal verbal feedback.

**HALF TERM 5:** Students will spend this half term looking at designing principles. Including research, the work of others and design strategies. Students will also spend part of the term looking at how maths is used in the D&T curriculum.

**STUDENTS MUST KNOW:**

- The difference between primary and secondary sources and how they differ in their use in design.
- How social, moral, economical and ethical challenges influence design ideas.
- How to investigate, analyse and evaluate the work of others, and how this informs design.
- Volume, rations, percentages and costings calculations in relation to materials and products.

**HOW THIS WILL BE ASSESSED:**

Formal assessment based on mini tests and quizzes in lesson time as well as marked worksheets and end of unit 6 test. Self /peer assessment opportunities and informal verbal feedback.

**HALF TERM 6:** Students will investigate and research the NEA topic set by the examination board and link in the investigation and use of primary and secondary research. Also looking at the design aesthetic of others.

**STUDENTS MUST KNOW:**

- And understand how primary and secondary data can be used regarding client needs.
- And show how to investigate and research the NEA topic set by the examination board.
- Identify a client and their needs with relation to the topic set.

**HOW THIS WILL BE ASSESSED:**

Formal assessment based on mini tests on the designing principles. Self/ peer assessment opportunities and informal verbal feedback.

**Embedding this knowledge can be supported at home by** encouraging them to be more interested in the world around them. By watching programs like Click on BBC 1 – all about emerging and future technology. Other programs that support technology are, inside the factory and How it's made. These along with websites such as GCSEpod, GCSE bitesize and Technologystudent.com will help students link what they cover in lessons to the world around them.