



Curriculum Overview

Year 8 – Design & Technology 2021-2022

Rationale for Year 8 Design & Technology

In each year, the units aim to introduce students to wider designing issues alongside their designing and making. All projects have a different focus. Some projects are mostly designing; some mostly making and some are design and making. Because knowledge is context dependent, all projects have a focus of specific knowledge within them. Simplistically, the detail in which the students can conceptualise the abstract concept of design will increase. Across each unit and over the key stage three students will be expected to apply more detail to their designing so that in GCSE the students are able to consider the wide ranging effects of design on society.

What will students learn and why?

The students will study two 13 week, 13 hour modules of Design Technology. In each module, they will complete around 6 hours of independent work through homework. These modules are studied by different populations of the school at different times in the year based on their position in a carousel that is shared with Food preparation and nutrition. The students learn the subject of Design Technology through a carousel of projects:

Module 1 – Metalwork focus LED decorative lamp. In this unit of work, the students learn how to deform mild steel, how to join steel and how to join dissimilar metals together. Students learn more about identifying design problems from a personalised context based on aesthetics over functionality. They also learn how to write complex design briefs and requirement lists. This project is a Design and Make project; therefore, students will spend similar amounts of time engaged in the skill of designing, as they will in the skill of making. Alongside the designing and making, the students will learn the associated knowledge of tools, equipment, materials used in the project and they will be taught to apply this knowledge to other contexts and not just within the context of the lamp.

Module 2 – Design communication and Polymer focus Pencil Case. In this unit of work, the students learn how to draw isometric projection. They start with the basics and through a series of interlinked lessons, they progress their skill level to the point where they can draw an exploded view diagram. The students are introduced to the skill of using CAD / CAM as part of the making process, during which they will learn a 2d drawing software and have their designs cut out by the laser-cutting machine. Students will demonstrate their making capability through the manufacture and design presentation of a plastic pencil case.

How will students learn?

The sequence of lessons involves the students having lessons at the start of the sequence that are more focused towards “traditional / teacher led instruction” whereas the students are involved in an “I do, we do and you do” methodology. As the sequence continues teachers then use “Fading” to reduce their presence in the students to increase the level of student independence in their work. Each 12 week unit of work would be split into 3 or 4 week sequences and therefore with the full module there would be an “ebb and flow” of periods whereas Teaching and Learning varies from teacher led to student independence.

How will students be assessed?

Knowledge and Design practice booklets are being rolled out across the KS3. Assessment will be built into the booklets with teachers assessing specific pages in the booklet every 3 to 4 lessons. The work is assessed against a standards system and comparative judgement is used to better identify students’ strengths and weaknesses across different assessed pieces of work in the different module contexts.

Regular online quizzes spaced throughout the module will assess the extent of students' knowledge and give them opportunity to better understand the depth of their learning.

What is the aim for learners by the end of the year in comparison to the previous year?

In Year 7, the students have completed units of work, which have material focus mostly in wood and systems and control. In Year 8, the material focus is shifted to Polymers and Metals. The students are taught more advanced drawing skills, namely drawing in isometric and they are also introduced to the 2d CAD / CAM process. The students' understanding of iterative design is developed further through model making exercises and responded to contexts. The student's capacity to design and make is built upon from Year 7 through the constant comparison of properties of materials used, tools used etc. to those used and experienced in prior units of work. Students will start to learn similarities between tools, equipment and materials and also understand why specific variations of tool and equipment exist. This will lead over time to students making better independent choices in later years. Each module in Key Stage Three Design & Technology is context dependent. Each module has a unique context focus, where that is sustainability, cultural & ethnicity diversity, social accessibility, moral responsibility etc. Each module has a primary material focus and in most instances, it is the only time where students will work with that specific material. Each module introduces students to specific designing strategies, which will enhance their ability to apply their knowledge to the solving of "wicked" real world problems.