

## KS4 ENGINEERING AND DT CURRICULUM MAP

**Intent:** We transform lives through learning by inspiring the next generation of designers and engineers to be independent creative problem solvers.

**Implementation:** The Engineering and Design Technology curriculum aims to empower students with the knowledge and ability to solve problems by applying their practical, mathematics and creative skills to a variety of real-life problems.

We place a real emphasis on teaching Engineering from a first principles basis, we want our students to question why they are doing what they do, to really understand the principles and in turn gain a much deeper understanding and knowledge of the processes involved. We also aim for our students to develop an appreciation of the beauty and power of design technology, and a sense of enjoyment and curiosity for the subject. We have a fundamental belief that all students can succeed in DT and Engineering and this is achieved through the process of intelligent practice and effective curriculum sequencing.

Year/Term	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Year 10 AQA DT course	Unit 3 Materials and their working properties Introduction to material properties  Unit 4 Common specialist technical principles Forces and stresses Ecological and social footprint Scales of production	Unit 6 Designing principles Investigation, primary and secondary data The work of others – designers The work of others – companies Design strategies	Unit 6 Designing principles continued Communication of design ideas  Unit 7 Making principles Selection of materials and components Tolerances Material management Tools, equipment, techniques and finishes	Unit 5 Specialist material areas – Timber based materials Sources, origins and properties Working with timbers Commercial manufacturing, surface treatments and finishes  Unit 1 New and emerging technologies Industry and enterprise Sustainability and the environment People, culture and society	Unit 1 New and emerging technologies continued Production techniques and systems Informing design decisions  Unit 2 Energy, materials, systems and devices Energy generation Energy storage Modern materials	Unit 5 Specialist material areas – Polymers Sources, origins and properties Working with polymers Commercial manufacturing, surface treatments and finishes  Begin NEA Project

Year 11 AQA DT course	Continue NEA Project	Complete NEA Project Begin Manufacture	Continue Manufacture	Complete Manufacture Begin revision	Revision ready for Public Exams	
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**Impact:** To ensure that all students make good progress, students are continually assessed. At KS4 these assessments will feed into the tracker and teaching and interventions will be adapted accordingly. Key vocabulary will be taught and assessed through knowledge organisers. At KS4 there is a much stronger focus on assessing the practical aspects of Engineering and Design Technology preparing the students for their external exams. Progress is tracked through central records and classroom teachers will adapt teaching accordingly. Pupil engagement in homework and intervention is also closely monitored and all parents/guardians are kept up to date through regular contact. Through the curriculum we aim to develop student's appreciation of engineering processes, and a sense of enjoyment and curiosity for the subject. The success of this will be monitored at the end of Year 10 with the external exams. Keystage 5 students make up the majority of the school and they study one of three different routes through the department. Either the Extended Diploma, a Diploma or the Extended Certificate. All students are successful on one of these three routes completing their course over the two years and ensuring they either go on to further study, undertake an apprenticeship or start work.