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 NCFE Course	Topic 1: Engineering Disciplines Engineering discipline through projects and products Engineering discipline skills The health and safety legislation governing engineering Health and safety legislation	Topic 2: Applied science and mathematics in engineering Application of SI units of measurement SI units of measurement Application of base SI units Equations used to calculate energy, force, motion, electrical and geometric shapes Equations for properties Application of equations	Topic 3: Reading engineering drawings Drawing conventions British Standards (BS) Topic 4. Properties, characteristics, and selection of engineering materials	Topic 5: Engineering tools, equipment and machines Marking out Modification Joining Finishing Safe and correct use Control measures	Topic 6: Hand-drawn engineering drawings Freehand sketching Hand-drafted isometric drawing sheet Hand-drawn orthographic drawing sheet	Topic 7: Computer-aided design (CAD) engineering drawings CAD isometric drawing sheet CAD orthographic drawing sheet The uses of CAD
Year 11 NCFE Course	Topic 8. Production planning techniques Risk assessment	Topic 9: Applied processing skills and techniques	NEA Synoptic Assessment Window	NEA Synoptic Assessment Window	Revision ready for Public Exams	

	Production plan	Prepare materials Modify shape and size of materials Join materials Finish materials Safe and correct use of tools, equipment and machines Preparation and use of tools, equipment and machines Control measures				

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.