Engineering Faculty Curriculum Philosophy

"Scientists investigate that which already is, Engineers create that which has never been" – Albert Einstein

The study of Engineering at Biddick Academy provides students an insight into the manufactured world that surrounds them. Every created object made by a human has had a series of decisions made in terms of its design, materials used and the process of its manufacture. Engineering bridges those core concepts of design, materials, and manufacture.

The Engineering course builds upon the learning opportunities that students will have experienced in the revamped KS3 Design and Technology Curriculum. Their cumulative knowledge in KS3 of CAD/CAM (Computer Aided Design /Computer Aided Manufacture), knowledge of materials and exploring different processes in manufacture whether by hand or machine.

The BTEC Tech Award in Engineering gives learners the opportunity to develop sector-specific knowledge and skills in a practical learning environment. The focus is on four areas of equal importance, which cover the development of key engineering practical and technical skills, such as research, observation, measurement, making, using computer-aided design (CAD) and disassembly; the knowledge of key engineering sectors (mechanical, electrical/electronic and engineering design) and the interrelation of each in industry; the knowledge of the stages involved in planning and implementing an engineering project and the knowledge and skills involved in the investigation of solutions to engineering problems in response to a given brief.

Engineering is intricately linked to technology, and the rise of it, which is why it has played a huge part in technical advances including computers, hospital machines the internet and more. CAD/CAM is central to the course where students use TinkerCAD 3D to model their ideas, 2D Design to design their idea and the use of the CNC router and laser cutter to manufacture their product.

We sequence our learning so that students can utilise information that they have learnt throughout and interleave in the different components of the course. This deliberate design and sequencing of knowledge and skills is followed so that there is a strong connectivity of knowledge for students. We draw upon students' experiences in other faculty areas such science, maths and English to embed core knowledge they need to know to be successful in the world of Engineering.

The course also ensures that students can demonstrate their skills and knowledge through both practical and theoretical settings. Students in the faculty develop a detailed knowledge of and master the skills within engineering and subsequently make excellent progress, achieve well and are ready and prepared for the next stage of their lives within education, employment, or training. We believe through the successful implementation of our faculty vision, our students will benefit from attaining a variety of transferable life skills such as problem –solving, logical thinking, resilience, and independence and by being able to use and apply their mathematical, scientific skills and knowledge in a practical environment effectively in whichever job, further training, and career they decide to pursue upon conclusion of their studies.