



Confident communicators	Knowledgeable and experienced learners	Committed community contributors	See the future and are ready for it
Our curriculum provides planned opportunities for all students to improve their ability to articulate their views and ideas in a confident and fluent manner, through what they say; what they read; what they write and what they create. Through this our students develop in both self-belief and confidence in their ability to communicate in a variety of settings.	Our curriculum provides opportunities for all students, regardless of their starting points, to develop the tools needed to learn and acquire both knowledge and skills. Through carefully sequenced learning, students' resilience grows as they become increasingly independent and proactive learners, who are empowered to succeed.	Our curriculum provides opportunities to enhance the cultural, creative and technological capital of all our students so that they can all make personal contributions in the wider community. They are proud of their school; understand the world around them. They develop personal skills as well as leadership attributes in order to make a positive contribution.	Our curriculum provides the opportunities, qualifications and aspirations, so that our students are able to make informed choices at each milestone. They are knowledgeable and have high aspirations for their own success so that they can thrive within a 21 <sup>st</sup> century world. Our students are supported to develop the skills to face uncertainty in new situations, and the resilience to persevere when faced with new challenges.

## Engineering

What are we trying to achieve?

Intent

Our students will be able to write, talk and create in response to projects that are inspired by the world they live in. They have developed the skills to link the formal elements of engineering together and respond in a personal and meaningful way to a range of ideas.	Our students will develop knowledge and skills related to creative concepts, methods and appreciation. They will develop a broad range of skills and be able to apply and evidence these through project folders, practical activities and final pieces.	Our students will acquire technical knowledge and technical skills through vocational contexts by studying mechanical engineering and engineering design. They will be able to integrate these skills into a practical learning environment involving the planning and implementation of an engineering project.	Our students will be able to carry their skills forward and refine them within each stage, building on prior knowledge. They will understand how the skills that they have developed are transferrable to other subjects and life.
<p>By the end of Key Stage 3 our students will be able to:</p> <ul style="list-style-type: none"> <li>• Demonstrate an understanding of workshop machinery and basic workshop hand tools.</li> <li>• Demonstrate and adhere to Health and Safety rules in the workshop.</li> <li>• Produce drawings and designs using sketching and 2D CAD techniques.</li> <li>• Demonstrate an understanding of manufacturing techniques such as casting.</li> </ul>	<ul style="list-style-type: none"> <li>• Present work in a project booklet.</li> <li>• Create and present work both as 2D and/or 3D drawings and as final pieces.</li> <li>• Demonstrate three-dimensional drawing skills in a range of media.</li> <li>• Demonstrate an understanding of computer aided manufacturing processes such as laser cutting.</li> </ul>		
<p>By the end of Key Stage 4 our students will be able to:</p> <ul style="list-style-type: none"> <li>• Demonstrate a deeper level of skill in a broader range of CAD and modelling software.</li> <li>• Identify their strengths as a design engineer and utilise them to their advantage.</li> <li>• Present personal and meaningful responses in the form of assignments.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate an understanding of contextual research and sources by studying a range of engineering companies and manufacturing processes.</li> <li>• Develop ideas, record and refine their ideas as their work develops through sketchbooks, and modelling.</li> <li>• Demonstrate an understanding of material characteristics and how they can be used to create and develop an engineered product.</li> </ul>		
<p>By the end of Key Stage 5 our students will be able to:</p> <ul style="list-style-type: none"> <li>• Develop ideas through sustained and focused investigations informed by contextual documentation and other sources, demonstrating analytical and critical understanding.</li> <li>• Explore and select appropriate resources, media, materials, processes and techniques, reviewing and refining ideas as work develops.</li> <li>• Record ideas, observations and insights relevant to personal intentions, reflecting critically on work as it progresses.</li> </ul>	<ul style="list-style-type: none"> <li>• Be driven, independent and thorough in their practice.</li> <li>• Produce mature, comprehensive responses.</li> <li>• Understand key aspects and ideas through working as part of a team.</li> <li>• Analyse maths and physics principles that focus upon mechanical and electrical engineering problems.</li> </ul> <p>Students study for the Pearson BTEC Level 3 Award</p>		