



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of work	<p><b>Component 1-</b> Learning aim A: Understand engineering sectors, products and organisations, and how they interrelate. <b>A1: Engineering sectors, engineered products and Interconnections</b> <b>A2 Engineering organisations, functions, job roles and career progression – Global/SME/ Jobbing- Career pathways</b></p>	<p><b>Component 1-</b> Learning aim A: Understand engineering sectors, products and organisations, and how they interrelate.</p>	<p><b>Component 1-</b> Learning aim B: Explore engineering skills through the design process. <b>B1 The design process</b></p>	<p><b>Component 2-</b> Learning aim A: Understand materials, components and processes for a given engineered product . <b>A1 Materials</b> <b>A2 Components</b></p>	<p><b>Component 2-</b> Learning aim B: Investigate a given engineered product using disassembly techniques <b>Component 3-</b> Learning aim A: Carry out a process to meet the needs of an engineering brief</p>	<p><b>Component 2-</b> Learning aim B: Investigate a given engineered product using disassembly techniques <b>Component 3-</b> Learning aim A: Carry out a process to meet the needs of an engineering brief</p>
Core Skills	<ul style="list-style-type: none"> <li>Literacy</li> <li>Computer literacy</li> <li>Research skills</li> <li>Communication and team working</li> </ul>		<ul style="list-style-type: none"> <li>Computer-aided design</li> <li>Generating final design solution using 2D drawing techniques and 3D models</li> <li>Numeracy</li> <li>Literacy</li> </ul>	<ul style="list-style-type: none"> <li>Manufacturing processes</li> <li>Material testing techniques</li> </ul>	<ul style="list-style-type: none"> <li>Observing and recording skills</li> <li>Measurement skills</li> <li>Safe use of disassembly techniques</li> <li>Safe use of tools and equipment</li> </ul>	
Core Knowledge	<ul style="list-style-type: none"> <li>Engineering definition in context: the safe application of technical and practical knowledge to transform ideas and materials (as part of a team) into products.</li> <li>The need for people who are qualified in an engineering discipline and if possible are experts in more than one discipline, and can use their skills to help solve real-world problems.</li> <li>Engineering sectors</li> <li>Engineered products from different sectors and combinations of sectors</li> <li>Examples of engineering organisations.</li> <li>Specialist organisations in sectors</li> <li>Functions in organisations</li> <li>Engineering job roles</li> <li>Career progression opportunities</li> <li>Role definitions</li> </ul>		<ul style="list-style-type: none"> <li>Interpreting an engineering brief</li> <li>Producing initial design proposals</li> <li>Making final design solution decisions based on relevant information and feedback.</li> <li>How employees work in a team and peer review during the engineering design and make process with the customer as a focus.</li> </ul>	<ul style="list-style-type: none"> <li>Understanding of engineering material categories</li> <li>Understanding of the properties of engineering materials</li> <li>Understanding of the characteristics of engineering materials</li> <li>Understanding of the different types of components that exist within products.</li> <li>Characteristics of various components</li> <li>Types of engineering processes</li> </ul>	<ul style="list-style-type: none"> <li>Measuring and recording data with accuracy and precision, using appropriate units</li> <li>Tabulating appropriate data in the correct format accurately and to a suitable degree of precision</li> <li>Displaying appropriate data graphically with accuracy</li> </ul>	
Assessment & Feedback	<p>Knowledge retrieval activities are used at the start of each lesson to gauge understanding of content, this is followed by whole group feedback. The use of command verbs to direct objectives and plenary activity responses, developing student understanding and guiding feedback that links to the specification.</p>					
	<p>Feedback on Mock assignment focusing on C1 LA A utilising specification grading criteria.</p> <p><b>Assignment 1- Assessment of C1 LA A.</b></p>		<p>Feedback on Mock assignment focusing on C1 LA B utilising specification grading criteria.</p> <p><b>Assignment 2- Assessment of C1 LA B.</b></p>	<p>Feedback on mock assignment focusing on C2 LA A utilising specification grading criteria.</p> <p><b>Assignment 3- Assessment of C2 LA A.</b></p>	<p>Feedback on Mock assignment focusing on C2 LAA utilising specification grading criteria.</p> <p><b>Assignment 4- Assessment of C2 LA B.</b></p>	
Link to prior learning	<ul style="list-style-type: none"> <li>Engineering sectors and the products that they produce.</li> <li>How engineering sectors interrelate</li> <li>Careers in engineering,</li> <li>Engineering businesses around the world,</li> <li>Famous engineers and their achievements,</li> <li>How I could I become an engineer?</li> </ul>		<ul style="list-style-type: none"> <li>Extracting information from an engineering brief</li> <li>Analysis of current products to inform design decisions.</li> <li>The use of 2D and 3D CAD packages in the design and testing of products.</li> <li>The use of electronic manufacturing techniques.</li> <li>Use of Ohm's law when designing an electronic circuit.</li> <li>Peer review in order to inform design development.</li> </ul>	<ul style="list-style-type: none"> <li>KS3 study of material categories.</li> <li>Use of workshop processes.</li> <li>Understanding of safe working practices.</li> <li>KS3 study of material properties.</li> </ul>	<ul style="list-style-type: none"> <li>Team working within design and manufacture.</li> <li>Offering constructive peer feedback.</li> <li>Making design decisions.</li> <li>KS3 study of material categories.</li> <li>Use of workshop processes.</li> <li>Understanding of safe working practices.</li> <li>KS3 study of material properties.</li> </ul>	<ul style="list-style-type: none"> <li>KS3 maths curriculum- data analysis and recording methods, displaying data graphically.</li> </ul>
Outside learning/trip	<p>What is in our local area? Investigation as to the types of engineering businesses and industries and opportunities, in our local area.</p>	<p>Educational visit to the Science Museum- Exhibit on Engineering careers and pathways.</p>				