

Topic	Rationale	Knowledge acquisition	Tasks - Notes	Key vocabulary	Skills and enrichment
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Mechanisms</p>	<p>This Year 9 scheme of work introduces students to the fundamental principles of mechanical systems, exploring how mechanisms are used to control and transform motion and force. Students will investigate a range of mechanisms including cams, levers, gears and pulleys, understanding how each system converts input motion into a desired output and can make tasks easier to perform.</p> <p>Through practical modelling and testing activities, learners will develop their ability to analyse and evaluate how mechanisms function in real-life applications. They will also explore key concepts such as ratio, velocity ratio and mechanical advantage, understanding how mechanisms can multiply force or change speed by trading effort for distance.</p> <p>By the end of the unit, students will be able to confidently select, design and justify appropriate mechanisms within their own design work, applying both theoretical knowledge and hands-on experience to solve real-world problems.</p>	<p>New Topic: Topic Under development for 2026-2027</p>	<p>Motions CAMS Modelling</p>		<p>Subject Specific Skills:</p> <ul style="list-style-type: none"> • Analysis • Evaluating • Modelling development • Problem solving <p>Numeracy</p> <ul style="list-style-type: none"> • Ratios • Mechanical advantage <p>Literacy</p> <ul style="list-style-type: none"> • Key vocab, meanings and context • Comprehension of instructions for processes <p>Cultural Capital</p> <ul style="list-style-type: none"> • Engineering in the real world related to mechanical devices <p>Links to National Curriculum:</p> <p>Design: Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools</p> <p>Make: Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture</p> <p>Evaluate: Analyse the work of past and present professionals and others to develop and broaden their understanding</p> <p>investigate new and emerging technologies</p> <p>understand developments in design and technology, its impact on individuals, society</p> <p>and the environment, and the responsibilities of designers, engineers and technologists</p>
			<p>Levers and Linkages Modelling</p>		
			<p>Gears and pulleys</p>		