

Year 10 Engineering

	<p>Intro Project, pizza cutter. Covers the basics of the design & make process. Brief, Specification, Sketching, CAD, Orthographic Projection. Foam mould making, Sand Casting, Milling, Turning, Drilling & cutting.</p> <p>Half Term 1</p>	<p>Intro Project, pizza cutter. Covers the basics of the design & make process. Brief, Specification, Sketching, CAD, Orthographic Projection. Foam mould making, Sand Casting, Milling, Turning, Drilling & cutting.</p> <p>Half Term 2</p>	<p>Intro Project, pizza cutter. Covers the basics of the design & make process. Brief, Specification, Sketching, CAD, Orthographic Projection. Foam mould making, Sand Casting, Milling, Turning, Drilling & cutting.</p> <p>Half Term 3</p>	<p>Engineering Design. Product analysis, research into manufacturing techniques, Design specification (AC1.1, 1.2, 1.3). Production of initial designs, CAD & hand drawn isometric & orthographic projections to British standard conventions. (AC2.1, 2.2, 3.1, 3.1, 3.2, 3.2).</p> <p>Half Term 4</p>	<p>Begin focus on unit 3 (Exam- Solving Engineering Problems). Aim to teach the bulk of the theory knowledge through focused Practical Tasks with write ups set as HW. Focus on Plastics & Metals.</p> <p>Half Term 5</p>	<p>Begin focus on unit 3 (Exam- Solving Engineering Problems). Aim to teach the bulk of the theory knowledge through focused Practical Tasks with write ups set as HW. Focus on Wood & Composites.</p> <p>Half Term 6</p>
Engineering Design	LO1, LO2, LO3, LO4	LO1, LO2, LO3, LO4	LO1, LO2, LO3, LO4	LO1, LO2, LO3, LO4		
Producing Engineering Products	LO1, LO2, LO3	LO1, LO2, LO3	LO1, LO2, LO3			
Solving Engineering Problems					LO1, LO2, LO3, LO4	LO1, LO2, LO3, LO4
Assessment	Formative	<p>Summative grade given to Technical Drawings. Formative assessment on other aspects of work. AC3.1 develop creative ideas for engineered products AC2.2 communicate design ideas</p>	<p>Summative grade for quality of final product. AC1.2 interpret engineering information AC2.1 identify resources required AC3.1 use tools in production of engineering products</p>	<p>Internally assessed, externally moderated coursework. AC1.1 identify features that contribute AC1.3 describe how engineered AC2.1 draw engineering design AC3.1 develop creative ideas for engineered products AC3.2 evaluate options for design solutions AC3.3 produce design specifications solutions AC2.2 communicate design ideas products function to the primary function of</p>	<p>Ongoing formative. Mock exam for summative grade AC1.1 describe engineering developments AC1.2 explain effects of engineering AC2.2 explain how materials are tested for properties achievements AC1.3 explain how environmental issues affect engineering applications AC2.1 describe properties required of materials for engineering products AC3.2 describe applications of</p>	<p>Ongoing formative. Mock exam for summative grade AC1.1 describe engineering developments AC1.2 explain effects of engineering AC2.2 explain how materials are tested for properties achievements AC1.3 explain how environmental issues affect engineering applications AC2.1 describe properties required of materials for engineering products AC3.2 describe applications of engineering processes</p>
		<p>Accessment Criteria (See Grading Grid for Performance Band info)</p>				

Threshold Concepts

1. A good Engineer understands that learning from maths and science underpins good engineering.

4. Understand that designers & engineers create products to meet the needs of a specific user group based on research.
5. Knows how ideas are communicated between different parties involved in the design process. Can apply this knowledge to read and produce drawings in Isometric,

1. A good Engineer understands that learning from maths and science underpins good engineering. 2. Understands the classifications and working properties of materials. Can apply this to solve engineering problems.

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Understands how products are manufactured in industry as well as in the school workshop. (Should know a range of industrial manufacturing processes and scales of production).

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1. A good Engineer understands that learning from maths and science underpins good engineering.

2. Understands the classifications and working properties of materials. Can apply this to solve engineering problems.
4. Understands the need for different forms of communication between those involved in the design & manufacture process.

1. A good Engineer understands that learning from maths and science underpins good engineering.

2. Knows how to classify materials by structure e.g. hard woods, soft woods, ferrous and non-ferrous, thermoplastic and thermosetting plastics.
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Half Term 1	Begin Unit 2. Producing Engineering Products NEA. Reading & Interpreting Technical drawings. Symbols, Conventions, Data charts. Project planning, method statement, Plan	Half Term 2 Unit 2 Practial.	Half Term 3 Unit 2 Practial	Half Term 4 Unit 3 Solving Engineering problems (exam). Environmental Issues. Proprties of materials & material classification. Recap on Isometric & Orthographic.	Half Term 5 Unit 3 Solving Engineering problems (exam). Recap section views & converting between drawing styles. Recap on industrial manufacturing processes.	Half Term 6
Engineering Design						
Producing Engineering Products	LO1, LO2, LO3		LO1, LO2, LO3			
Solving Engineering Problems			LO1, LO2, LO3, LO4		LO1, LO2, LO3, LO4	
Assessment Accessment Criteria (See Grading Grid for Performance Band info)	Ongoing formative on select pieces of work. Summative grade on	Ongoing Formative	Ongoing Formative. Summative grade given to unit upon	Mock Exams	External Exam	

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