

Curriculum Overview – **Engineering Y10**

Year	Term	Units of Work	Assessment
10	1	<p>Introduction to Model Engineering (Stealth Fighter Plane) Rationale: To introduce pupils to 'model engineering'. To introduce pupils to a range of materials, tools, equipment and machinery used in engineering. To teach pupils how to plan for production and to accurately check the quality of their work.</p> <p>Orthographic Drawing Rationale: To develop pupils' ability to draw using orthographic projection. To teach pupils how to draw accurately using a drawing board and technical drawing equipment. To teach pupils how to dimension an object to British Standards.</p> <p>Sectional Drawing Rationale: To make pupils aware there are a range of drawing techniques that can be used to show inside an object. To teach pupils how to produce a sectional drawing. To develop pupils' ability to use a drawing board and</p>	<p>Marking Out – Students must use a set of engineering drawings and the principles of tessellation to accurately position and mark out the various parts of a stealth fighter plane onto a sheet of A4 card. This exercise serves as a practise before students are given sheet metal to complete this same task.</p> <p>Production Plan – Students must produce a production plan that explains in detail how they will manufacture one part of a stealth fighter plane they have been given a set of engineering (part) drawings for.</p> <p>Manufacturing – Students must use a range of tools, equipment and machinery to make a stealth fighter plane accurate to a set of engineering drawings they have been given.</p> <p>Orthographic Drawing Test – Using a drawing board and technical drawing equipment, students must produce a third angle orthographic drawing of a wooden block in a set time.</p> <p>Sectional Drawing Test – Using a drawing board and technical drawing equipment, students must produce a sectional drawing of a snow man in a set time</p>

	<p>technical drawing equipment.</p> <p>Isometric Drawing Rationale: To develop pupils' ability to draw using isometric projection. To introduce pupils to 'weighted line' and develop an understanding of how this can be used to improve presentation. To teach pupils how to draw isometric circles and cylinders.</p>	<p>Isometric Drawing Test – Using a drawing board and technical drawing equipment, students must produce an isometric drawing of an everyday vehicle (car, lorry, bus etc.) in a set time. They must then render this drawing and apply 'weighted line'.</p>
2	<p>NEA Unit 1 (25% of final grade) Students spend this term completing the project analysis, research, specification and initial ideas for the Unit 1 portfolio.</p> <p>NEA Unit 2 (50% of final grade) Students spend this term completing the interpreting engineering drawings and interpreting engineering information tasks and begin the NEA practical task.</p>	<p>Assessment Criteria 1.1, 1.2, 1.3 and 3.3 of Unit 1 NEA.</p> <p>Assessment Criteria 1.1, 1.2, 3.1, 3.2 and 4.1 of Unit 2 NEA.</p>
3	<p>NEA Unit 1 (25% of final grade) Students spend this term completing the development section of the portfolio. This involves producing sketch developments, 3D models and carrying out a range of tests.</p> <p>NEA Unit 2 (50% of final grade) Students spend this term producing the materials selection, tools and equipment selection and machines</p>	<p>Assessment Criteria 2.1, 2.2, 3.1 and 3.2 of Unit 1 NEA.</p> <p>Assessment Criteria 2.1, 3.1, 3.2 and 4.1 of Unit 2 NEA.</p>

		and processes selection pages of the Unit 2 report and continue the NEA practical task.	
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