

Curriculum Mapping: Engineering

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
YEAR 9 (Engineering Foundation)	<p>Familiarisation with CAD</p> <ul style="list-style-type: none"> ➤ 2D Design ➤ 3D CAD packages <p>Careers in Engineering – overview of engineering disciplines</p>	<p>Materials Focus: Natural and manufactured timber</p> <p>Manufacturing Skills: Phone / Tablet Holder – modelling, use of hand and machine tools (Autumn 1&2)</p>	<p>Isometric Drawing Technique</p> <ul style="list-style-type: none"> ➤ Sketch work ➤ Line types, rendering / shading <p>Tools and Equipment Overview + Health and Safety (appropriate use of tools / equipment)</p>	<p>Materials Focus: Polymers</p> <p>Manufacturing Skills: Stationary Holder – combining materials, computer aided manufacture, joining materials (Spring 1&2)</p>	<p>Engineering Drawing Introduction</p> <ul style="list-style-type: none"> ➤ First Angle Projection ➤ Third Angel Projection ➤ Introduction to British Standards <p>Materials Properties Overview</p>	<p>Materials Focus: Polymers</p> <p>Manufacturing Skills: Table Lamp – bending / shaping metals, combining materials, applying finishes, evaluation (Summer 1&2)</p>
YEAR 10	<p><i>Unit 1 Preparation</i></p> <p>Engineering disciplines – how specific engineering projects and products have shaped the modern world.</p> <p>Health and safety legislation – focus on personal safety measures for each engineering discipline.</p>	<p><i>Unit 1 Preparation</i></p> <p>SI units of Measurements</p> <p>Application of basic SI units in projects and products</p> <p>Equations for Properties</p> <p>Application of equations in projects and products (Describe and Calculate Energy, Forces and Motion, Electrical, Geometry)</p> <p>Assessment 4</p>	<p><i>Unit 1 Preparation</i></p> <p>Understand how to read engineering drawings</p> <ul style="list-style-type: none"> ➤ Drawing conventions ➤ British Standards <p>Understand the properties and characteristics of engineering materials and why specific materials are selected for engineering applications</p>	<p><i>Unit 1 Preparation</i></p> <p>Understand engineering tools, equipment and machines</p> <ul style="list-style-type: none"> ➤ Marking-out ➤ Modification ➤ Joining ➤ Finishing <p>Control measures Safe and correct use of tools, equipment and machines</p> <p>Assessment 5</p> <p>External Exam (Unit 1)</p>	<p><i>Unit 2 Preparation</i></p> <p>Produce hand drawn engineering drawings</p> <ul style="list-style-type: none"> ➤ Freehand sketch-work ➤ Hand drafted isometric drawings ➤ Hand drafted orthographic drawings <p>Assessment 5</p>	<p><i>Unit 2 Preparation</i></p> <p>Produce Computer Aided Design (CAD) engineering drawings</p> <ul style="list-style-type: none"> ➤ Production of CAD isometric drawings ➤ Production of CAD orthographic drawings <p>Assessment 5</p>

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
YEAR 11	<i>Unit 2 Preparation</i>	<i>Unit 2 – Manufacture</i>	<i>Unit 2 – Manufacture</i>	<i>Unit 2 – Finalisation</i>	<i>Unit 2 – Finalisation</i>	
	<p>Demonstrate production planning techniques</p> <ul style="list-style-type: none"> – Risk assessment (hazards / risks / controls) – Production plan <ul style="list-style-type: none"> ➤ Tools and equipment ➤ Health and safety ➤ Quality control ➤ Flow chart symbols ➤ Time planning 	<p>Demonstrate processing skills and techniques applied to materials for a manufacturing task</p> <ul style="list-style-type: none"> – Skills and Techniques – Modify shape and size of materials – Join materials – Finish materials – Preparation of use <p>Safe and Correct Use of Tools, Equipment and Machines</p> <ul style="list-style-type: none"> – Control measures <p>Assessment 6</p> <p><i>Timing and working independently practice</i></p>	<p>Demonstrate processing skills and techniques applied to materials for a manufacturing task</p> <ul style="list-style-type: none"> – Skills and Techniques – Modify shape and size of materials – Join materials – Finish materials – Preparation of use <p>Safe and Correct Use of Tools, Equipment and Machines</p> <ul style="list-style-type: none"> – Control measures 	<p>Completion of synoptic project portfolio / Review of all responses to all learning outcomes</p> <p>Responses to feedback</p> <p>Project submission for assessment / marking</p> <p>Assessment 6 Internal Assessment (Unit 2)</p>	<p>Review of synoptic project and resubmission if required (in line with NCFE guidelines)</p> <p>Internal Assessment (Unit 2) – if required</p>	