

Pre Year 7						
This course is not studied in primary school.						
Year 7						
Topic/Focus	Wind Energy - For most students this is their first experience of a DT workshop and of making products using tools and machinery. The project introduces the renewables sector and investigates how electrical energy is produced by harnessing the wind. Practical aspects of the project involve students making a wind vane from a variety of materials. Written work is recorded in a Project Diary.					
Sequencing	Changing focus week to week between written and practical elements. This builds student confidence in the workshop and teaches new skills.	Practical elements focus on workshop safety, use of hand tools and machinery. Engineering drawing. Materials.	Practical work is assessed by outcome.	Written work includes an investigation into the manufacture and use of steel in industry, a look into the renewables sector focussing on wind power, and explanations of the various practical elements of the project.	Progress and attainment are measured by an end of project test and by assessment of the practical elements to form a combined judgement.	The project relates to the IVQ delivered at KS4 in many ways inc. use of tools and materials, design and purpose, responding to a brief, practical skills, H&S etc.
Extended Learning	Investigation Task - Wind turbine industry, Production of Steel.	(in Extended Learning booklet)	Complete and photocopy to stick in the work diary.			
Formal Assessment	End of Project Test (in diaries)					
Project Length	8-10 weeks					

Year 8			
Topic/Focus	Design and Make Projects. Students return in Year 8 to create a range of products in response to a design brief. A key fob (in cast pewter) and a bowl (in hammered aluminium). Written work to complement the practical is recorded in a work diary together with extended learning evidence and a formal, end of project test.		
Sequencing	<p>Key Fob - Design and make a device for a teenager to keep their keys organised. Key ideas - casting, CAD/CAM, H&S, finishing techniques.</p> <p>These projects build on the experience of design, technology and engineering and opens students up to the possibilities for further study and progression at KS4.</p>	<p>Metal Bowl - Using templates, make a planished, hand-beaten bowl for light storage on a work-top or desk. Extension task to make a stand/foot.</p>	
Extended Learning	Investigation Task - Famous Inventions that Changed the World.	(in Extended Learning booklet)	Complete and photocopy to stick in the work diary.
Formal Assessment	End of Project Review		
Project Length	8-12 weeks		

Year 9			
Topic/Focus	Design and Make Projects. Students return in Year 9 to create a range of products in response to a design brief. A coat peg (in steel) and a clock (in plywood). Written work to complement the practical is recorded in a work diary together with extended learning evidence and a formal, end of project test.		
Sequencing	<p>Coat Peg - follow engineering drawings to produce a coat hanger from mild steel.</p> <p>This project builds on previous workshop experience and develops a wider understanding of working with materials and processes.</p>	<p>Clock - Use 2d design software to create a pattern to be cut on the laser cutter.</p> <p>This project introduces students to CAD & CAM and builds directly to the WJEC Level 2 course.</p>	
Extended Learning	Investigation into the production and use of mild steel in industry.		
Formal Assessment	End of Project review		

Year 10										
Qualification	WJEC L1/2 Award in Engineering									
Topic	Engineering History	Product Investigation	Engineering Maths	Isometric Projection	Design and Make - Point of Sale device	Electronics	Orthographic Projection	Energy Production	Focussed Practical Tasks	3D Modelling using Solidworks
Sequencing	First project to establish expectations for standards.	Looking at how materials and processes combine when making products. Disassembly or product. Key skills for coursework.	Manipulation of equations to calculate area and volume. Exam practice.	Introduces students to 3D drawing. Skills needed for the next project.	Students first practical design and make task. Introduces materials and processes.	An introduction to simple electronic and circuits. Prepares students for exam.	Building on the work on ISOMETRIC PROJECTION. Fundamental requirement of all practicals.	Looks at the energy production sector. Renewables, Oil/Gas, Nuclear.	Measuring, marking out, cutting, filing, bending, welding, finishing.	Introduction to creating parts, assemblies and drawings using 3D modelling software. Vital for Unit 1 coursework.
Extended Learning	Complete as EL task	Complete as EL task						Complete as EL task		
Formal Assessment			EoT Test	Assessed by outcome	Assessed by outcome	EoT Test	Assessed by outcome		Assessed by outcome	Assessed by outcome

Year 11										
Qualification	WJEC L1/2 Award in Engineering									
Topic	Unit 1 coursework			Unit 2 Coursework						
Sequencing	Product Disassembly	Key Features	Specification	Practical work towards final Assessment						
Extended Learning	Complete coursework to required standard.									
Formal Assessment	Internally Assessed. Externally Moderated			Internally Assessed. Externally Moderated						

Post Year 11										
Further Education/training in: Engineering L3 or Apprenticeship						Employment in: Engineering sector				