

## Year 10 ENGINEERING (WJEC)

### Overall Intent:

In Year 10 WJEC Engineering, students will blend engineering theory with practical skills through a succession of sequenced lessons. Students will learn to identify tools and equipment, and be able to describe and demonstrate their safe use. Students will develop skills in planning and sequencing tasks, whilst taking into account relevant Health & Safety standards and requirements. These skills will be utilised in the planning for the manufacture of a specific engineering part. Students will explore engineering design skills using CAD and traditional drawing skills to solve a design problem following a brief.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Topic/Area of study</b>	Key tools and equipment Materials and material stock Basic tools and equipment Use of drills and lathes Understanding engineering Drawings Producing engineering drawings		Preparation for set exam piece with the theme of bikes Understanding design briefs	Sketching and responding to design briefs Specifications Preparation for unit 1 Preparation for set exam piece with the theme of theme parks		Quality assurance Evaluation techniques
<b>Key learning aims – knowledge and skills</b>	Students will gain knowledge and understanding of common tools used in engineering manufacture. They will become familiar with material stock and availability.  Students will apply this knowledge to a range of practical projects		Students will start preparing for the pre-released section of the exam by examining the construction of a bicycle and determining the role of key components, the materials it is made out of, and considering changes to the standard design to take into account different uses eg adaptation for a physical disability	Students will examine a set design brief and produce a range of solutions by sketching as their main method of communication  They will then to go to examine and develop specifications for a range of products  These skills will be formalised in preparation for unit 1 in 11		A formal analysis of quality assurance will be made, formalised by carrying out QA on a given product  Skills in evaluation will be developed by review own practical work and given products

	Students will engage in a range of different media for the production of engineering drawings including CAD and drawing boards		An examination of theme parks will be made with a view to understanding consumerism, design and marketing. This will prepare students for the pre-released section of the exam	
<b>Assessment</b>	Internal assessment - homework and assignment	Internal assessment - homework and assignment	Internal assessment - homework and assignment	Internal assessment - homework and assignment