Long Term Plan Y10 Engineering Design

	Intent / End Point: Engineering Design is a process used to identify market opportunities and solve problems which contribute to the development of new products and systems. Through research and practical activities, students will understand how market requirements and opportunities inform client briefs and will use practical skills such as drawing, computer modelling and model making to communicate design ideas. Students will be encouraged to communicate and consult with a client to develop a viable and innovative product. They will also apply practical skills to produce a prototype in the form of a model and test design ideas to inform further product development. Through reflection learners evaluate the prototype, making a comparable outcome against specification points, and assess possible, practical solutions and improvements to their prototype design.						
		HT1	**HT2**	**HT3**	**HT4**	**HT5**	**HT6**
	Unit title	R039 Communicating Designs	R039 Communicating Designs	R039 Communicating Designs	R039 Communicating Designs	R039 Communicating Designs	R040 Design, Evaluation & Modelling
Principles that underpin your curriculum	Knowledge	Topic 1 : Manual Production of Freehand sketches	Topic 2 : Manual Production of Engineering Drawings	Topic 3 : Use of CAD	Topic 3: Use of CAD	Complete Assessed Task	Product Evaluation
	Design Communication			Labelling & annotation Creating a step by step guide	Analysing exiting products		
	Design Realisation						
	Middle Stake Testing	Drawing Test 1	Drawing Test 2	Drawing Test 3	CAD TEST	R039 pre-hand in assessment	Theory Test 1
	High Stake Testing		Assessment 1		Assessment 2	R038 Assessed Task	
	Skills development	To enable students to develop the skills required to influence solutions to design challenges through the production of appropriate design briefs and specifications. To develop skills that will enable them to undertake effective research of existing products, including undertaking product disassembly to enhance the product analysis.					

Long Term Plan Y11 Engineering Design

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Engineering Design is a process used to identify market opportunities and solve problems that contribute to the development of new products and systems. Through research and practical activities, students will understand how market requirements and opportunities inform client briefs and will use practical skills such as drawing, computer modelling and model making to communicate design ideas.
Students will be encouraged to communicate and consult with a client to develop a viable and innovative product. They will also apply practical skills to produce a prototype in the form of a model and test design ideas to inform further product development. Through reflection learners evaluate the prototype, making a comparable outcome against specification points, and assess possible, practical solutions and improvements to their prototype design.

		HT1	HT2	HT3	HT4	HT5	HT6
	Unit title	**R105 Design Specifications**	**R107 Developing & presenting engineering designs**	**R108 3D Design realisation**	**R108 3D Design realisation**	**R108 3D Design realisation**	
Principles that underpin your curriculum	**Knowledge**	Revision for exam		LO1: Know how to plan the making of a prototype	LO2: Understand safe working practices when making a prototype	LO3: Be able to produce a prototype	
	Design Communication		LO2: Know how to develop designs using engineering drawing techniques and annotation LO3 Be able to use computer aided design (CAD) software and techniques to produce and communicate design proposals	Product specifications Planning Tools Risk Assessments	Risk & Hazards Health & Safety	Material selection Forming & Bending Assembly methods Recording making	
	Design Realisation			LO1: Know how to plan the making of a prototype	LO2: Understand and implement appropriate and safe working practices when manufacturing a prototype.	LO3: Be able to produce and evaluate the success of a prototype	
	Middle Stake Testing	R105 Test	Drawing Test	Computer aided Design task	Production planning task	Quality control task	
	High Stake Testing			**R107 Submission**		**R108 Submission**	
	Skills development	Students will develop skills in sketching to be able to generate a range of different initial ideas. Ideas will then be selectively developed into formal engineering drawings, with CAD and other techniques being used to communicate final design proposals. Practical skills will be developed to equip students with the skills to plan and manufacture safely, prototypes in the form of craft based modelling materials alongside rapid prototyping processes.					