

Key Stage 4 Overview

	Module 1	Module 2	Module 3	Module 4	Module 5	Module 6
Year 9 BTEC	<p>University Challenge:</p> <p>I'm an Engineer - get me in here</p> <p>Context: Understanding the role of engineers in the various engineering sectors and how they work together to produce an engineered product or service.</p> <p>Skills:</p> <ul style="list-style-type: none"> List the various sectors of engineering. Being aware of Health & Safety of workshop and tools. Describe the various sectors of engineering. Describe the products and services produced by the different sectors of engineering. 	<p>University Challenge:</p> <p>F1 in schools Challenge</p> <p>Context: Design and make a box that that will serve as the base of the lamp and also house the electronic components.</p> <p>Skills:</p> <ul style="list-style-type: none"> Understanding correct use of cutting tools. Being aware of Health & Safety of workshop and tools. Correct use of measuring and marking tools. Tolerance of components. Quality of finish. Accuracy of finishes/cut. 	<p>University Challenge:</p> <p>University Academy of Engineering Citizens of London</p> <p>Context: Understand the design process and to create an e-portfolio.</p> <p>Skills:</p> <ul style="list-style-type: none"> Understanding the design process. Creating a title page using Microsoft Word Creating a Moodboard by importing images from the internet to Microsoft Word Scanning design ideas and importing them to Paint in order to manipulate. 	<p>University Challenge:</p> <p>STEM Inventions during the war</p> <p>Context: To populate a PCB and use CAD to create 3-D model of lamp.</p> <p>Skills:</p> <ul style="list-style-type: none"> Using soldering equipment . Redesigning an existing design, changing certain factors. 3D CAD modelling a lamp casing. Populating a PCB. Reading a schematic diagram. 	<p>University Challenge:</p> <p>Designing and Making for our Community</p> <p>Context: Making lamps using traditional and modern methods of manufacture.</p> <p>Skills:</p> <ul style="list-style-type: none"> Assemble lamp made using traditional manufacturing methods Assemble lamp made using traditional manufacturing methods Compare traditional and modern manufacturing methods. Being aware of Health & Safety of workshop and tools. 	<p>University Challenge:</p> <p>Community</p> <p>Context: Making products to sell at Lonnie Betts Fun Day. Business in engineering.</p> <p>Skills:</p> <ul style="list-style-type: none"> Researching existing solutions for product. Brainstorming/mind mapping of design/idea solutions. Creating detailed plans of making process as a step by step guide. Using measuring tools, marking tools and cutting tools to make profile shales.

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	<ul style="list-style-type: none"> Analyse an engineered product using ACCESSFMM. Sector analyse an engineered product. Disassemble and assemble an engineered product. Identify components that make up an engineered product. Describe the function of components that make up an engineered product. 		<ul style="list-style-type: none"> Writing a design specification with some measurable parameters. Using questionnaires to survey opinions of lamps. Annotate design ideas with dimensions, materials and processes. Selecting and justifying choice of final design idea. 	<ul style="list-style-type: none"> Identifying and describing the functions of electronic components. Explaining how a circuit works using subject specific vocabulary. Using 3D printer to manufacture casing. Quality of finish Accuracy of Finish. Tolerance of components. 	<ul style="list-style-type: none"> Quality of finish Accuracy of Finish. Tolerance of components. 	<ul style="list-style-type: none"> Use of Joinery Techniques to make stationary container. Redesigning a lever/arm joint based on different users. 3D Modelling/CAD of existing design for Key Fobs. Evaluating between manual & digital manufacturing methods.
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