

Yr Group	Topic	Lesson Content (Order)	What do pupils need to know	Skills utilised / subject disciplines	Cross Curricular Links / Transferable knowledge.	Assessment
10	R039 TA2: Manual production of engineered drawings	1.1 Produce a third angle orthographic projection drawing of a design proposal using standard conventions	Draw a sky glass remote control using an A3 drawing board <ul style="list-style-type: none"> <li>Scale 1:1 drawing</li> <li>3<sup>rd</sup> angle orthographic</li> <li>Conventions when adding dimensions</li> <li>Title blocks</li> <li>Different types of lines used</li> </ul>	<ul style="list-style-type: none"> <li>Independence / Resilience</li> <li>Analysing Information.</li> </ul>	Engineering drawing	Level 2 Distinction * Distinction Merit Pass Level 1 Distinction Merit Pass
		1.1 Produce a third angle orthographic projection drawing of a design proposal using standard conventions	Draw a sky glass remote control using 2D Design software <ul style="list-style-type: none"> <li>Setting up page layout</li> <li>Developing use of drawing tools on CAD program</li> <li>Dimensioning</li> </ul>	<ul style="list-style-type: none"> <li>Independence / Resilience</li> <li>Analysing Information.</li> </ul>	Engineering drawing 2D C.A.D	Level 2 Distinction * Distinction Merit Pass Level 1 Distinction Merit Pass
		1.2 Draw an isometric drawing	Draw 3D isometric of sky remote on an A3 drawing board <ul style="list-style-type: none"> <li>Using a square</li> <li>Angles used in isometric</li> <li>Drawing ellipses using an ellipse template</li> <li>Use of different lines</li> </ul>	<ul style="list-style-type: none"> <li>Independence / Resilience</li> <li>Analysing Information.</li> </ul>	Engineering drawing	Level 2 Distinction * Distinction Merit Pass Level 1 Distinction Merit Pass
	TA3: Use of computer aided design (CAD)	1.2 Produce an assembly drawing for a design proposal	This lesson introduces exploded view. To introduce you could present examples, highlighting similarities and how it derives from isometric. Draw exploded view of sky remote on an A3 drawing board <ul style="list-style-type: none"> <li>Use of projection lines</li> <li>Show component parts of remote</li> <li>Produce a parts list</li> </ul>	<ul style="list-style-type: none"> <li>Independence / Resilience</li> <li>Analysing Information.</li> </ul>	Engineering drawing	Level 2 Distinction * Distinction Merit Pass Level 1 Distinction Merit Pass
		1.1 Produce a 3D CAD model of a design proposal to include compound 3D shapes	Draw sky remote on Solidworks <ul style="list-style-type: none"> <li>Drawing parts</li> <li>Dimensioning</li> <li>Extrusions</li> <li>Lofts</li> <li>Fillets</li> <li>Adding finishes/ materials</li> <li></li> </ul>	<ul style="list-style-type: none"> <li>Independence / Resilience</li> <li>Analysing Information.</li> </ul>	Engineering drawing 3D C.A.D	Level 2 Distinction * Distinction Merit Pass Level 1 Distinction Merit Pass

	TA1: Manual production of freehand sketches	1.2 Produce 3D CAD assemblies of components	<ul style="list-style-type: none"> <li>Assembling parts</li> <li>Mate commands</li> </ul>	<ul style="list-style-type: none"> <li>Independence / Resilience</li> <li>Analysing Information.</li> </ul>	Engineering drawing 3D C.A.D	Level 2 Distinction * Distinction Merit Pass Level 1 Distinction Merit Pass
		<ul style="list-style-type: none"> <li>Produce a freehand sketch of a design idea using: <ul style="list-style-type: none"> <li>2D/3D sketches</li> <li>Thick/thin lines</li> <li>Texture</li> <li>Tone</li> <li>Shading</li> <li>Annotation and labelling techniques: <ul style="list-style-type: none"> <li>explain key features</li> <li>functions,</li> <li>dimensions</li> </ul> </li> </ul> </li> </ul>	Students are introduced to a range of freehand sketching techniques. Students develop labelling and annotation to support their design ideas.	<ul style="list-style-type: none"> <li>Independence / Resilience</li> <li>Analysing Information.</li> </ul>	Engineering drawing Freehand sketching	Level 2 Distinction * Distinction Merit Pass Level 1 Distinction Merit Pass
	Working on OCR-set assignment tasks any practical assessment work. In Understand the Set Assignment brief including	<p>TOPIC AREA 1</p> <p>Students must be able to produce freehand sketches of a design idea or design proposal using rendering techniques: thick/thin lines; texture; shading and annotation to demonstrate the design. It would be highly unusual to see the same output from students in a cohort.</p> <ul style="list-style-type: none"> <li>Ensure that students produce a range of design ideas and proposals that respond to the specification provided, using both 2D and 3D techniques and utilise graphical communication methods to enhance their ideas.</li> </ul>	<ul style="list-style-type: none"> <li>Independence / Resilience</li> <li>Analysing Information.</li> </ul>	Engineering drawing Freehand sketching	Topic Area 1: Manual production of freehand sketches (18 marks)	
		<p>TOPIC AREA 2</p> <p>Students are required to develop one design proposal further using rendering</p>	<ul style="list-style-type: none"> <li>Independence / Resilience</li> <li>Analysing Information.</li> </ul>		Topic Area 2: Manual production of freehand	

		<p>techniques to present both 2D and 3D sketches.</p> <ul style="list-style-type: none"> <li>• Detailed annotation and labelling should be used to help describe the function, features, material choices, assembly methods etc.</li> <li>• Students should explain how their design meets the design specification provided.</li> </ul>			<p>sketches- design development (12 Marks)</p>
		<p>TOPIC AREA 3</p> <p>Students must be able to produce a 3rd angle orthographic drawing and an assembly drawing for a design proposal. They must use the correct standards and conventions.</p> <ul style="list-style-type: none"> <li>• Manual production of drawings refers to either the use of drawing boards or 2D CAD software, so access to either drawing boards and drawing instruments, or access to a 2D CAD software, is required.</li> <li>• You should ensure that students produce a range of engineering drawings following standard conventions (BS 8888).</li> <li>• To demonstrate their design proposal, students should utilise a range of assembly drawing techniques</li> </ul>	<ul style="list-style-type: none"> <li>• Independence / Resilience</li> <li>• Analysing Information.</li> </ul>		<p>Topic Area 3: Manual production of engineering drawings (12 marks)</p>
		<p>TOPIC AREA 4</p> <p>You should ensure that students use CAD software to produce formal presentation design proposals.</p> <ul style="list-style-type: none"> <li>• Students must demonstrate skill in using 2D and 3D CAD modelling</li> </ul>	<ul style="list-style-type: none"> <li>• Independence / Resilience</li> <li>• Analysing Information.</li> </ul>		<p>Topic area 4: Use of Computer Aided Design (CAD) (18 marks)</p>

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