



Academic Year <u>Year; 9</u>	Content. Unit title and brief outline of content.	Skills taught in each unit.	Assessment – what knowledge and skills will be assessed and how?
Rationale	<p>Y9 the focus is on paper, board and metal with an emphasis on understanding the source of metals and their properties, independently using appropriate materials and equipment and developing their iterative design and CAD/CAM skills.</p> <p>Students work from a 'clients' brief (Ikea) to design and make a functioning clock for a given target market (14-18 year old students) which should reflect a chosen design movement and consider the designs sustainability.</p> <p>CST – Stewardship and Common Good - Metals - Extraction and processing and the impact on communities and the environment.</p>		
(A) Autumn A	<p>Clock (Extension add lights)</p> <p>Practical Review Materials revision Processes Revision</p> <p>Clock Design Use standard components and incorporate recycled materials to produce a clock based on a researched design movement/designer.</p> <p>Design and develop a range of design ideas for a clock suitable to be sold by a mail order company.</p> <p>3D models should include hand-made prototypes and CAD development.</p> <p>Electronics and component theory.</p>	<ul style="list-style-type: none"> • Communication both hand (as above and 2-point perspective and orthographic projection) and CAD drawing, • select the appropriate • tool/equipment and to work towards, supervised, but safe independent use of the tools and equipment, • research and present relevant information, • Independent research and presentation of ideas • Independent research - design movements • Careers – investigating the work of current designers. 	<p>October EMB Based upon GCSE style questions Workshop Health and Safety – Risk Assessment Workshop tools/equipment-identification and safe usage Processing material</p>



	<p>Research a given design movement and present findings as a PPT on OneNote</p> <p>BHM - Research into existing product designers/architects or engineers. Presentation</p>		
(A) Autumn B	<p>Electronics and component theory. Uses of Paper and Board Sequence making activity Make clock – hand and CAM Prepare catalogue/webpage advert for product. Cost Product Produce a Life Cycle Analysis (LCA) of product.</p>	<ul style="list-style-type: none"> • 3D modelling including CAD/CAM • Independent iterative design. • evaluate own and others work, • communicate design ideas effectively, • make quality models and end products, • relate technical learning to other subject and the outside world. • Oracy group presentations into Design Movements, 	<p>December Oracy Oracy task – Presenting their independent research into a given design movement. (Team Presentation)</p>
Spring A	<p>Metals-Casting Using pewter casting to design & make a piece of jewellery.</p> <ul style="list-style-type: none"> • Investigate the different types of metals. (uses and properties) <ul style="list-style-type: none"> • Ferrous • Non-ferrous • Alloys • Environmental impact of sourcing and processing metals. • CAD/CAM – Mould design • Manufacturing - low casting system & hand tools 	<ul style="list-style-type: none"> • Develop CAD/CAM Skills • 3D Product Design skills 	<p>January EMB Exam paper based upon GCSE format with a range of 1 – 9 mark questions Focus on understanding of their use of materials.</p>
Spring B	<p>Clock (Extension add lights) Practical Review Materials revision</p>	<ul style="list-style-type: none"> • Communication both hand (as above and 2-point perspective and 	<p>January EMB Based upon GCSE style questions</p>



	<p>Processes Revision</p> <p>Clock Design Use standard components and incorporate recycled materials to produce a clock based on a researched design movement/designer.</p> <p>Design and develop a range of design ideas for a clock suitable to be sold by a mail order company.</p> <p>3D models should include hand-made prototypes and CAD development.</p> <p>Electronics and component theory.</p> <p>Research a given design movement and present findings as a PPT on OneNote</p> <p>BHM - Research into existing product designers/architects or engineers. Presentation</p>	<p>orthographic projection) and CAD drawing,</p> <ul style="list-style-type: none"> • Oracy group presentations into Design Movements, select the appropriate tool/equipment and to work towards, supervised, but safe independent use of the tools and equipment, research and present relevant information, evaluate own and others work, communicate design ideas effectively, make quality models and end products, relate technical learning to other subject and the outside world. • Independent research and presentation of ideas • Independent research - design movements • 3D modelling including CAD/CAM • Independent iterative design. <p>Careers – investigating the work of current designers.</p>	<p>Workshop Health and Safety – Risk Assessment</p> <p>Workshop tools/equipment-identification and safe usage</p> <p>Processing material</p>
Summer A	<p>Sequence making activity</p> <p>Make clock – hand and CAM</p> <p>Prepare catalogue/webpage advert for product.</p> <p>Cost Product</p> <p>Produce a Life Cycle Analysis (LCA) of product.</p>		<p>June EMB</p> <p>Exam paper based upon GCSE format with a range of 1 – 9 mark questions</p> <p>Focus on understanding of their use of materials.</p>
Summer B	<p>Metals-Casting</p> <p>Using pewter casting to design & make a piece of jewellery.</p> <ul style="list-style-type: none"> • CAD/CAM – Mould design 		<p>July Oracy</p> <p>Oracy task – Presenting their independent research into a given design movement. (Team Presentation)</p>



	<ul style="list-style-type: none">• Manufacturing - low casting system & hand tools• Investigate the different types of metals.• (uses and properties)<ul style="list-style-type: none">• Ferrous• Non-ferrous• Alloys		
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