

## Year 8

One lesson per week

Timing	Unit Title	Key Question	Knowledge	Assessing Understanding
<b>Project 1</b>	<b>Egg Cup 1 term</b>	<b>Design and make an acrylic egg cup in the style of the Memphis Movement</b>	<p>Design – knowledge and skills</p> <ul style="list-style-type: none"> <li>● Develop an understanding of the key features of the Memphis design movement.</li> <li>● Develop skills in collecting research, presenting this research in the form of a mood-board and analysing this research to inform design criteria (for specification).</li> <li>● Develop skills in writing a design specification.</li> <li>● Understand the classification of acrylic as a thermoforming polymer and its properties linked to this classification.</li> <li>● Be aware of the relevant market forms of acrylic.</li> <li>● Name, recognise and use common manufacturing and construction techniques for acrylic including line bending, use of solvent cement, comb joints, halving joints and mortise and tenon joints.</li> <li>● Develop skills in using quick sketching (thumbnails) to create initial design ideas which avoid design fixation</li> <li>● Develop skills in card modelling to develop design ideas in 3D.</li> <li>● Develop skills in the use of 3D CAD (Onshape) to present and further develop design ideas. Skills include using: sketches, extrusion, dimensions &amp; mate to create and assemble 3D parts.</li> <li>● Develop skills in generating 2D CAD drawings (.dxf) of 3D CAD parts for CAM manufacture (cutting on the laser cutter).</li> </ul> <p>Manufacture of a polymer-based product</p> <ul style="list-style-type: none"> <li>● Develop skills in using computer aided manufacture (CAM): laser cutting.</li> </ul>	<ul style="list-style-type: none"> <li>● Design ideas (cardboard models)</li> <li>● Practical outcome &amp; final evaluation</li> </ul>

			<ul style="list-style-type: none"> <li>● Develop skills in using the line bender: forming.</li> <li>● Develop skills in cutting and filing acrylic rod.</li> <li>● Develop skills in accurately assembling a final acrylic product using liquid solvent cement (where relevant) – joining.</li> </ul>	
<b>Project 2</b>	<b>Nature Activity Box</b>  0.5 terms	<b>Design and manufacture 'Nature Activity Box' using Corel Vector (2D CAD)</b>  <b>Group Project</b>	<p>Design - knowledge and skills</p> <ul style="list-style-type: none"> <li>● Develop skills in working within a design team.</li> <li>● Research relevant existing products.</li> <li>● Analyse and evaluate existing products research.</li> <li>● Use research analysis and evaluation to inform design thinking.</li> <li>● Brand design</li> <li>● Create designs for 'Grow your Own' and 'Craft' activities in the form of A5 cards using Corel Vector (2D CAD) which are representative of the brand.</li> <li>● Use a range of Corel Vector tools, including line, box, spline, text, transform, fill, groups and layers &amp; modifying .svg images.</li> </ul> <p>Manufacture using papers and boards</p> <ul style="list-style-type: none"> <li>● Printing onto papers and boards.</li> <li>● Cutting and scoring papers and boards: Cutting knife, safety ruler, rotary cutter, guillotine, circle cutter, bone creaser and cutting mat.</li> </ul>	<ul style="list-style-type: none"> <li>● Practical outcome (one per group)</li> <li>● Evidence log (one per group member) detailing contributions to the design work/team</li> <li>● User testing write-up (one per group)</li> </ul>
Project 3	<b>Storage Box</b>  1.5 terms	<b>Make a box with traditional wood joints</b>	<p>Design – knowledge and skills</p> <ul style="list-style-type: none"> <li>● Research the use of repetition in designs from different cultures.</li> <li>● Use research findings to inform design thinking for box lid designs.</li> <li>● Produce 3D isometric drawings using an isometric grid.</li> <li>● Render isometric drawings to convey 3D form and material textures. Manufacture using timber based materials</li> </ul>	<ul style="list-style-type: none"> <li>● Lids: Research and design ideas</li> <li>● Knowledge and understanding: Woods test</li> <li>● Practical outcome &amp; rendered isometric of final design</li> </ul>

			<ul style="list-style-type: none"><li>● Learn how woods are classified as softwoods, hardwoods and manufactured boards.</li><li>● Learn the properties of a range of softwoods and plywood</li><li>● Understand workshop health and safety rules.</li><li>● Learn how to use hand tools for marking out, cutting, abrading and joining wood.</li><li>● Learn how to use a bandfacer.</li><li>● Learn how woods can be enhanced and protected with wood finishes.</li></ul>	
--	--	--	--	--