

## Year 8

1 lesson per week

Timing	Unit Title	Key Question	Knowledge	Assessing Understanding
1 term	Egg Cup	Design and make an acrylic egg cup inspired by Art Deco	<p>Design – knowledge and skills</p> <ul style="list-style-type: none"> <li>• Develop an understanding of the key features of Art Deco.</li> <li>• Develop skills in collecting research, presenting this research in the form of a moodboard 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 (sheet, rod).</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 slot 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 skill in explaining and evaluating ideas concisely, using annotation.</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> <li>• Manufacture of a polymer based product</li> <li>• Develop an awareness of the use of 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> <li>• Develop skills in critically evaluating against a design specification</li> <li>• Develop skills in presenting modifications informed by the evaluation.</li> </ul>	
<b>0.5 terms</b>	<b>Nature Activity Box</b>	<b>Design and manufacture a 'Nature Activity Box'</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>• Develop an understanding of collaboration and its advantages and disadvantage.</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' &amp; '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> <li>• Develop skills in user testing and analysing/evaluating the test findings.</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 ( 1 per group)</li> <li>• Evidence log (1 per group member) detailing contributions to the design work/team</li> <li>• User testing write-up (1 per group)</li> </ul>
<b>1.5 terms</b>	<b>Wooden Box</b>	<b>Make a wooden box with</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> </ul>	<ul style="list-style-type: none"> <li>• Lids: Research and design ideas</li> <li>• Knowledge and understanding: Woods test</li> </ul>

		<b>traditional joints with a lid design inspired by cultural repeat patterns.</b>	<ul style="list-style-type: none"><li>● Use research findings to inform design thinking for box lid designs.</li><li>● Present ideas using 2D techniques.</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><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>	<ul style="list-style-type: none"><li>● Practical outcome &amp; rendered isometric of final design</li></ul>
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