

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	Design – knowledge and skills • Develop an understanding of the key features of Art Deco. • Develop skills in collecting research, presenting this research in the form of a moodboard and analysing this research to inform design criteria (for specification). • Develop skills in writing a design specification. • Understand the classification of acrylic as a thermoforming polymer and its properties linked to this classification. • Be aware of the relevant market forms of acrylic (sheet, rod). • 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. • Develop skills in using quick sketching (thumbnails) to create initial design ideas which avoid design fixation • Develop skills in card modelling to develop design ideas in 3D. • Develop skill in explaining and evaluating ideas concisely, using annotation. • Develop skills in the use of 3D CAD (Onshape) to present and further develop design ideas. Skills include using: sketches, extrusion ,dimensions & mate to create and assemble 3D parts. • Develop skills in generating 2D CAD drawings (.dxf) of 3D CAD parts for CAM manufacture (cutting on the laser cutter). • Manufacture of a polymer based product	• Design ideas (cardboard models) • Practical outcome & final evaluation

			• Develop an awareness of the use of computer aided manufacture (CAM): laser cutting • Develop skills in using the line bender: forming • Develop skills in cutting and filing acrylic rod • Develop skills in accurately assembling a final acrylic product using liquid solvent cement (where relevant) - joining • Develop skills in critically evaluating against a design specification • Develop skills in presenting modifications informed by the evaluation.	
0.5 terms	Nature Activity Box	Design and manufacture a 'Nature Activity Box' Group Project	Design - knowledge and skills • Develop skills in working within a design team. • Develop an understanding of collaboration and its advantages and disadvantages. • Research relevant existing products. • Analyse and evaluate existing products research. • Use research analysis and evaluation to inform design thinking. • Brand design • Create designs for 'Grow your Own' & 'Craft' activities in the form of A5 cards using Corel Draw Go (2D CAD) which are representative of the brand. • Use a range of Corel Draw Go tools, including line, box, spline, text, transform, fill, groups and layers & modifying .svg images. • Develop skills in user testing and analysing/evaluating the test findings. Manufacture using papers and boards • Printing onto papers and boards. • Cutting and scoring papers and boards: Cutting knife, safety ruler, rotary cutter, guillotine, circle cutter, bone creaser and cutting mat.	• Practical outcome (1 per group) • Evidence log (1 per group member) detailing contributions to the design work/team • User testing write-up (1 per group)

1.5 terms	Wooden Box	Make a wooden box with traditional joints with a lid design inspired by cultural repeat patterns.	Design – knowledge and skills • Research the use of repetition in designs from different cultures. • Use research findings to inform design thinking for box lid designs. • Present ideas using 2D techniques. • Produce 3D isometric drawings using an isometric grid. • Render isometric drawings to convey 3D form and material textures. Manufacture using timber based materials • Learn how woods are classified as softwoods, hardwoods and manufactured boards. • Learn the properties of a range of softwoods and plywood • Understand workshop health and safety rules. • Learn how to use hand tools for marking out, cutting, abrading and joining wood. • Learn how to use a bandfacer. • Learn how woods can be enhanced and protected with wood finishes.	• Knowledge and understanding: Woods test • Lids: Research and design ideas • Practical outcome & rendered isometric of final design
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