

Design and Technology – KS3 Product Design

Learning journey

Year 7

Project	Learning
Bug House Project	Workshop safety, workshop tools and equipment, natural and man-made woods, measuring and marking, cutting using a wood saw, sanding machine, drilling machine, nailing, using sanding and drilling jigs, assembly using glue and nails, finishing and laser cutting decorations
Steady Hand Game Project	Electronics and electronic components, circuit boards, soldering, testing and fault finding, plastic forming (vacuum forming), smart materials (Polymorph), using bending jigs, heat treating metals (annealing), shaping metals

Year 8

Project	Learning
CAD/CAM Clock Project	What is CAD/CAM, using 2D CAD software, CNC manufacturing (using the laser cutter to cut plywood), applying a finish to wood (sanding sealer), assembling a product, purpose of packaging, packing design and manufacture, final assembly including mechanism
Building of the future	Market research, designing for others, specification, creative thinking and imaginative design, design development, high quality architectural modelling

Year 9

Project	Learning
Pewter Casting Project	Metals and alloys, the theory of casting, market research, creative design and thinking, 2D CAD designing in layers (special awareness), laser cutting in card, assembling a mould, pewter casting, finishing metal work (cutting, filing, polishing and drilling), packaging design and manufacture
Wooden Carry Box Project	Market research (the work of others), designing for a client, modelling to scale, woodworking skills (building on learning from Y7), clearance and pilot holes for screws, finishing on wood (stains and sanding sealer)
Upcycled Lamp Project	Environmental impact of design and manufacture, 6 Rs, value of upcycling materials, use of scroll saw and bobbin sander to shape the base measuring, marking, cutting and drilling wood, soldering USB leads and LEDs
Acrylic Phone Holder	Market research (phone dimensions and existing products), creative design, modelling in card, 2D CAD design, laser cutting in card and acrylic, thermo forming plastics (line bender)