

Year 8

Headphone wrap/architectural design

CAD/CAM project. Pupils will use CAD to produce a headphone wrap / small building design suitable for 3D printing.

Keywords	Key skills	Equipment/ processes used/ materials
CAD (Computer Aided-Design) CAM (Computer Aided-Manufacture) 3D printing Additive manufacturing	Google SketchUp (CAD skills) 3D printing process Spatial Awareness Problem solving Specification	Laptops Google sketch-up/ Tinkercad 3D printers PLA Blocks for design warm-up

Chocolate Novelty

Using 2D design to design a simple chocolate novelty and packaging.

Keywords	Key skills	Equipment/ processes used/ materials
Iterative process. Acrylic Laser cutter CAD CAM Thermo plastic Thermosetting Vacuum forming Branding Fairtrade	Iterative process. 3D modelling. Problem solving. Branding	Laptops 2D design// HIPS MDF (for laser cutter) Laser cutter// Vacuum former// Belt sander/ sand paper// PVC// Book-lets // Laptops// 2D design// Paper/laminator

Wooden trinket box

Hand tools to build a simple lap joint pine box. Laser cut design on top.

Keywords	Key skills	Equipment/ processes used/ materials
Timbers Joints (lap joint/ butt joint) Designers/ work of others Laser plywood	Lap joint Accuracy in measuring and cutting Laser cutting- new and emerging technologies working alongside traditional Sustainability Tolerances Uses and purposes of timbers	Pine Tenon saws Bench hooks Laser plywood Hardboard PVA/wood glue Belt sander Sandpaper

SOLDERING

What is soldering? Practice soldering and look at how it works, why it is needed, where do you find soldering, careers

Keywords	Key skills	Equipment/ processes used/ materials
Soldering Flux H&S Printed Circuit Board Precision Scales of production	Hand tool skills Measuring and accuracy Soldering Accuracy	Soldering irons Clips Boards Kits Solder Glasses PCB LED