



The Grey Coat Hospital

Key Stage Three Curriculum Plan - Subject: Design & Technology

Students rotate through four projects per year. The order of projects is different for every class.

Year 7

Plywood Box Project	Monster Frame Project	Cushion Project	Mini Bag Project
Skills: Designing, marking out, cutting, drilling, finishing, testing & evaluation. Theory: - Raw source of materials: Conversion of timber. From tree to plank. - Types of movement: linear, reciprocating, oscillating, and rotary. - Mechanical devices: Levers. - Properties of materials: Natural timbers and manufactured boards. - Forces and stresses: Torsion, shearing, tension and compression. - Manufacturing skills: Step by step guide to marking and drilling a hole on the pillar drill.	Skills: Designing, CAD, marking out, cutting, line bending & finishing. Theory: - Industry and enterprise: Cooperatives and Fairtrade - Energy storage: Fossil Vs Renewable. - Scales of production: One off / batch / high volume / continuous. - Sustainability issues: Oceanic waste. - Drawing systems: Isometric. - Properties of materials: Polymers - thermoforming, thermoset and biodegradable. - Manufacturing skills: Step by step guide to using a coping saw.	Skills: Designing, marking and cutting out, applique, machine stitching, testing & evaluation. Theory: - Sustainability and the environment: Life cycle analysis of a textile garment. - Sustainability and the environment: Recycling & reusing textiles. - The work of others: Alexander McQueen. - Production techniques: Step-by-step - threading a sewing machine. - Properties of materials: Sportswear & furnishings. - Manufacturing skills: Step by step guide for threading a sewing machine.	Skills: Designing, marking and cutting out, applique, hand stitching and embroidery techniques. Theory: - The work of others: Coco Chanel. - People culture and society: Making design inclusive. - Design strategies: Ergonomics and anthropometrics. - Ecological / social footprint: The six Rs. - Raw Source of materials: Animal, chemical and vegetable. - Manufacturing skills: Step by step guide to applique.

Year 8

Printed Drawstring Bag project	The Tote Bag Project.	The Bookend Project	LED Light Project
Skills: Designing, marking out, cutting,	Skills: Designing, marking out, cutting,	Skills: Designing, marking and cutting	Skills: Designing, marking and cutting



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hand stitching, CAD, digital pattern design, sublimation printing. Theory: • People and culture: Fashion / trends / faiths • Commercial processes: Printing & dying. • Properties of materials: Blended & mixed fibres. • The work of others: William Morris. • Specialist techniques: Batik & embroidery. • Manufacturing skills: Step by step guide to sublimation printing.	hand stitching & patchwork, testing & evaluation. Theory: • Scales of production: One-off, batch, mass & continuous. • The work of others: Vivienne Westwood. • Composite materials: Technical textiles. • Improving functionality: Iterative design / user centred design. • Properties of materials: Natural and synthetic fabrics & their uses. • Manufacturing skills: Step by step guide to threading the sewing machine.	out, drilling, sanding, dowel joint, assembly and finishing. Theory: • Production systems: Just-in-time production. • Production aids: Templates, jigs & patterns. • Making principles: Traditional wood joints. Dowel and butt joint. • Working with materials: Stock forms • Properties & uses of materials: Timbers natural & manmade boards & their uses. • Manufacturing skills: Step by step guide to using the fret saw.	butt joint, routing, finishing, testing & evaluation. Theory: • Industry and enterprise: Crowd funding and virtual marketing. • How energy is generated: Tidal, solar, wind, hydroelectric and biomass. • Electronic systems: Inputs and outputs. • Drawing systems: Orthographic and scaled drawings. • Properties of materials: Smart and modern materials. • Manufacturing skills: Step by step guide to using the Bandfacer.
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Year 9

3D Printed Light	Pyjamas Project	The Bird Box project	Copper Tea Light Project
Skills: Designing, 3D Modelling using CAD, 3D printing, soldering & assembly. Theory: • New and emerging technologies: Automation and robotics.	Skills: Designing, marking out, cutting, cutting a pattern, inserting a pocket, testing & evaluation. Theory: • Informing design decisions: Repair vs	Skills: Designing, marking and cutting out, CAD, drilling, sanding, finger joint, assembly and finishing. Theory: • Eco & social footprint: FSC timber.	Skills: Designing, marking, cutting, annealing, soldering, finishing, testing & evaluation. Theory: • People, Culture and Society:



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• Communication of design ideas: Modelling your idea in 2D and 3D. • Systems design: Open and closed loops. • Properties of materials: Polymers. • Manufacturing Skills: Step by step: how to use the 3D printer.	• replace. • The work of others: Rei Kawakubo. • Communication of Design Ideas: Final design, technical flat & lay plans. • Standard components: Tools for patternmaking and sewing and fastening components • Properties of materials: Woven, non-woven and knitted fabrics. • Manufacturing skills: Step by step guide to cutting out the pattern and sewing the pyjamas together.	• Making principles: Tolerances. • Making principles: Traditional wood joints. Finger and mitre joints. • Making principles: Surface finishes for wood, metal and plastics. • Maths: Calculating wastage, triangles and quantities of materials. • Manufacturing skills: Step by step guide to marking out and cutting a finger joint.	• Technology push and market pull. • Design strategies: What is inclusive design? • Improving functionality: Design evolution. • Manufacturing Skills: Step by step guide to annealing and soldering • Properties of materials: Metals and alloys.
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