

DT KS3 Curriculum Overview 2022-23					
Rotation 1	Food	Engineering	Textiles	Product design	Electronics
Topic/Key area	Food & Cooking	Engineering: Learning the Basics	Textiles: Upcycled chromebook case.	Product Design: Nightlight Project	Nightlight circuit and structures
Key concepts	To acquire a range of food skills, increasing in complexity and accuracy, to cook a range of dishes, safely and hygienically, and to apply their knowledge of nutrition and food provenance, Prepare and cook a variety of dishes.	Understanding the design process. drawing in 3D (Isometric) building to producing Design Ideas, Understanding Metals, Working safely in a Engineering workshop Using a range of hand and machine operated machines such as, Guillotine, Bench Drills, Foding machine, Mill, Dip Coating and mnual tools	Recycling,upcycling, down cycling and precycling, The origins of fibres and classification of fibres. Handcrafted and mass manufactured. disassembly. Cradle to Grave manufacture, Synthetic fibres.The concept of an assembly line. Ethic methods of dying (resist)	Understanding the Design Process with specific reference to Analysis , Specification and Design Ideas. The influence of a range of of lifestyle factors and consumer choices when designing products. The analysis of where human values may conflict and compromise has to be made. Drawing in 2D and 3D. Understanding Woods and Plastics. Working safely in a workshop . Using a range of hand and power tools, such as, try-squares, marking gauges, tenon saws, mallets, chisels, rasps, pillar / bench drills, belt / circular sanders, millers. Learn how to intergrate electronic circuits into product casings. Use of CAD/CAM.	Understanding a systems approach. sensing, resistors, transistor amplification and switching. PCB manufacturing. Soldering skills and working safely in electronics. Evaluating products through a product disassembly. Terms relating to and features of structures. How to strengthen structures through triangulation.
Skills	Knife skills, Personal Safety, Safe use of parts of cooker. Reading recipes to preparing & cooking a range of dishes safely & hygienically. How to apply eatwell guide to healthy diet, Food preparation.	Drawing skills, Marking out, Working with accuracy, Filing, Using machines. Metal assembly	Controlling and setting up sewing machine, Straight Lines, corners, changing stitches, Pattern placement and cutting, Tie dye, Pinning, Turning Corners, RS to RS	Drawing skills, marking and cutting out using hand tools, filing and shaping materials, using machines, wood assembly and finishing.	Soldering skills, use of multimeters, drilling.
Prior Knowledge	Skills used in primary school DT. Home cooking. Visiting restaurants/eating venues in UK & abroad.	Sketching at primary schools, Some students may have family who work in engineering. Little or no practical skills	Skills used in primary school DT	Skills used in Primary School - measuring and marking. Some students may hava a family member who is a carpenter. Electronic circuit from previous module.	Some knowledge of electricity and basic electronics from science/primary. Complete nad incomplete circuits. Switch/cell/lamp. Volts and amps. Variab;le depth covered by primaries.
Link to future lea	Rotation 2 - Building on skills & knowledge	Rotation 2 - building on these skills to develop a motor driven mechanism	Rotation 2 will look in more depth at the construction of fibres, build on sewing machine skills and look in more depth about the impact the fashion industry has on the environment.	Rotation 2 will build on the practical skills they learn in Rotation 2 to produce an Anthropomorphic desk / shelf lamp.	Rotation 2 builds on the circuit manufacturing skills and introduces programeable technologies and electromagnetic output devices.
Numeracy	Recipe quantities, weighing & measuring, ratios, fractions	Simple number manipulation throughout, Discrete costing session (Wk 5)	Pattern lay, seam allowances,	Measuring and marking out throughout	Reading resistor values and resistor calculations.
Literacy	Pupils read recipes to make dishes, Keyword list. Use correct relevant terminology, Descriptive adjectives, sensory terminology	Key word list, Following instructions, reading drawngs. Descrete literacy task (extracting key nformtio) Wk 7	Key words list, Use of technical vocab, use of articles on plastics	Key words list, following instructions, technical terminology, names of tools and processes	Key words list, following instructions, technical terminology, names of tools and processes
Knowledge organ	Completed for rotation 1	Completed for rotation 1	Completed Rota 1	Completed for Rotation 1	Completed for Rotation 1
Supporting resou	Google classroom resources by lesson	Google classroom resources, GC Quizes, Self help Videos,	Linked to SOL, In GC and Department area	Google classroom resources by lesson	Google classroom resources by lesson

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Rotation 2	Food	Engineering	Textiles	Product design	Electronics
Topic/Key area	Nutrition & Health	Automata	Textiles : Recycled denim bucket hats	Product Design - Anthropometric Desk / shelf lamp project	PIC controlled motor for engineering automata project.
Key concepts	Consolidation of key concepts learned in rotation 1. To enable pupils to develop and demonstrate a range of food skills, increasing in complexity and accuracy, to cook a range of dishes, safely and hygienically, and to apply their knowledge of nutrition and food provenance. In addition, they will consider the factors that affect food choice, food availability and food waste.	Designing/ Sketching in 3d (By Hand and Computer) to produce a viable product. Using CAD Modelling systems. Understanding how to interface electronics with Mechanisms into a working product	Fast Fashion, Fabric construction knitting, weaving and binding with a focus on weaving, The impact of fashion on the environment with a focus on denim and cotton, Sweatshops and globalisation, Fashion illustration and drawing, Experimentation and sampling with materials, presentations, introduction of textiles artists/designers. Ian Berry, Thome Brown and Irsi Van Herpin	Development of hand-eye coordination, and manipulative and dexterity skills to measure, mark out, cut and assemble a wooden Anthropometric desk / shelf lamp. Development of communication skills by the creation of annotated design sketches that fully outline design concepts.	The prevalence and importance of programmable technology in the modern world. Analogue and digital signals, programming, FETs. Mechanical systems, types of motion, converting motion, cams and followers, crank and slider, gear trains, gear ratios and mechanical advantage.
Skills	Knife skills, Personal Safety while working in a food kitchen. Safe use of parts of cooker. Reading recipes to preparing & cooking a range of dishes safely & hygienically.	Designing and Development. Developing 3D Digital design, Further workshop skills, Integrating Electronics/Mechanisms into products	Applique, collage, seam allowances, distressing fabrics, 3d/curved seams, illustration technique, pinning and ironing	Drawing skills, marking and cutting out using hand tools, filing and shaping materials, using machines, wood assembly and finishing.	Programming, soldering.
Prior Knowledge	Knowledge & skills learned in rotation 1. Knife skills. Safe & hygienic working in the kitchen. Safe & hygienic preparation of a range of dishes. Home cooking. Visiting restaurants/eating venues in UK & abroad.	How to sketch. Safe workshop practice, Use of hand and machine tools, Electronic circuit from previous rotation	Recycling, upcycling, down cycling and pre-cycling, The origins of fibres and classification of fibres. Handcrafted and mass manufactured. disassembly. Cradle to Grave manufacture, Synthetic fibres, The concept of an assembly line. Ethical methods of dyeing (resist), Controlling and setting up sewing machine, Straight Lines, corners, changing stitches, Pattern placement and cutting, Tie dye, Pinning, Turning Corners, RS to RS	How to sketch. Safe workshop practice, Use of hand and machine tools, Use of CAD/CAM	PCB manufacture, populating and soldering a circuit. System diagrams, circuit schematics, pcb layouts, resistors, transistors.
Link to future learning	Rotation 3 - Making choices - secure and demonstrate a range of food skills, increasing in complexity and accuracy, to cook a wider range of dishes, safely and hygienically, and to apply their knowledge of nutrition and food provenance.	Rotation 3: Building your own products, effective interfacing electronic, mechanical and mechanisms into an effective solution	ROTA 3 in year 9 will build on key skills specifically need for GCSE textiles. Analysis of artist and designers, Experimentation, illustration and presentation techniques, decorative and advance construction skills. PJs and Culture Cushion	Rotation 3 in year will build on key skills specifically needed for GCSE Product Design.	Rotation 3 will look at the concepts learned in this rotation and develop them in greater depth.
Numeracy	Percentages, ratios, mass, length, time, money, ratios.	Calculating material sizes, marking out, Mechanical ratios and effective mechanisms	Seam allowances, nets (patterns) 3d structures	Calculating material sizes, marking and cutting out accurately.	Writing algorithms, calculating gear ratios and MA.
Literacy	Key words, specialist terms, sensory adjectives, Learning new vocabulary through reading recipes. Specialist relevant, topical articles.	Understanding drawings, extracting key information and producing concise relevant and effective information	Key words list, Use of technical vocab, use of articles on fast fashion and sweatshop, development oral literacy via presentation skills.	Key words list and use of technical vocabulary. Extracting key information and communicating ideas through detailed annotation. Producing detailed Specifications to guide designing.	Key words list and use of technical vocabulary. Extracting key information and communicating ideas through detailed annotation. Hwk 1 (research and present)
Knowledge organiser	Created for Rotation 2	Created	Created	Created for Rotation 2	Created for rotation 2
Supporting resources	All resources in SOL and GC. All shared in KS3 DT area	All resources in SOL and GC. All shared in KS3 DT area	All resources link on SOL and in GC. All in shared DT area	Google classroom resources by lesson	Google classroom resources by lesson, PCBs, mechanical systems kits