

Cooking & Nutrition

Year 7

	Topic	Disciplinary Knowledge		Vocabulary		Assessment	Cross-Curricular Links	Golden Threads	Personal Development	Rationale
		Theory	Practical	Theory	Practical					
Year 7 Part One	Food Safety and Sourcing of Ingredients	<ul style="list-style-type: none"> Health, safety and hygiene in the kitchen The 4 Cs of food safety Safe working practices in a food room Food sourcing and seasonality Food miles and sustainability 	<ul style="list-style-type: none"> Use of basic kitchen equipment Safe knife skills Safe use of ovens and hobs Weighing and measuring ingredients Following a simple recipe Time management during practical work Preparing simple, nutritious dishes 	Hazard Hygiene Danger Precision Equipment Seasonality Prevention Consumer Distance Nutrition Transport	Claw and bridge Slice/chop Melting Contamination Ingredients (various) Equipment (various)	Assessment of Learning Students complete an end-of-unit assessments inline with the academy data window. Assessed practical task forms part of the assessment to demonstrate secure understanding of food safety, food sourcing and basic cooking skills.	Geography: Food miles and seasonality Maths: Measuring and scaling English: Reading recipes and writing evaluations PSHE/Citizenship: Healthy eating and ethical sourcing Wider Design & Technology: Tool use and practical problem-solving Literacy - use of tier 3 and tier 2 vocabulary. Extended writing, use of conjunctions and other grammar essentials. Booklets developing reading.	Ingredients - (ingredient sourcing) Students explore how ingredients are used thoughtfully to create safe, nutritious dishes, considering hygiene, seasonality, sourcing, and environmental impact. Practical work develops understanding of ingredient functionality through knife skills, oven/hob use, and recipe following, reinforcing the connection between ingredient choice, safe handling, and the final product	SMSC - Students develop socially and morally by working collaboratively, following hygiene rules, making ethical food choices, reflecting on cultural and seasonal significance, and understanding global food practices. Think Careers – Chef Restaurant chef - prepares and cooks food in a restaurant, manages kitchen staff, ensures quality and presentation of dishes, and maintains cleanliness and food safety standards. Think Big Question - If it's dangerous but nothing bad happens was it dangerous? Earthshot - Students explore sustainability by considering food miles, seasonality, locally sourced ingredients, reducing waste whilst cooking, and making environmentally responsible choices in planning and preparing dishes.	This unit of work builds on KS2 cooking experiences but does not assume prior knowledge, ensuring all students can engage successfully. It explicitly addresses common misconceptions about hygiene, knife safety and seasonal produce, while developing both practical skills and theoretical understanding. It lays the foundational skills for safe, independent cooking, preparing students for more complex recipes and concepts in later KS3 units.
Year 7 Part Two	Healthy Diets and Ethical Sourcing	<ul style="list-style-type: none"> Elements of a balanced, healthy diet Dietary requirements and diet groups Where food comes from: grown, reared and caught Ethically sourced and sustainable food Environmental impact of the food/catering industry 	<ul style="list-style-type: none"> Use of basic kitchen equipment Safe knife, oven and hob use Weighing and measuring ingredients Batch producing food Creating dishes with awareness of dietary needs Demonstrating the rubbing-in method Time management and problem solving during practical tasks Applying health, hygiene and safety practices. 	Balanced Nutrition Presentation Intolerance Allergy Commodity Consistency Ethical Sustainability	Simmer Batch Rubbing in Ingredient (various) Equipment (various)	Assessment of Learning: Students are assessed on knowledge and understanding through end of unit knowledge assessment, practical tasks, and written reflections, demonstrating secure understanding of food safety, nutrition, dietary needs, sourcing, and cooking skills.	Science: Nutrition, dietary requirements, and food functionality Geography: Food sourcing, seasonality, and environmental impact Maths: Measuring, weighing, scaling recipes, and batch production English: Reading and following recipes, writing evaluations and reflections PSHE/Citizenship: Healthy lifestyle choices, ethical sourcing, and sustainability Wider Design & Technology: Tool use, practical problem-solving, and food preparation techniques	Ingredients - (ingredient sourcing) Students explore how ingredients are used thoughtfully to create balanced, nutritious dishes, considering dietary requirements, sustainability, ethical sourcing, and environmental impact. Practical work develops understanding of ingredient functionality through techniques like batch production and the rubbing-in method, reinforcing the connection between ingredient choice, cooking method, and the final product.	SMSC - Students develop socially and morally by respecting peers, following hygiene rules, making ethical food choices, and reflecting on cultural, dietary and environmental implications of the food they prepare. Think Careers – Should all plastic straws be banned? Or do we need them? Think Big Question – Farmer Farmer - grows crops or raises animals for food, fibre, or other products. They manage land, equipment, and livestock, and ensure that their produce meets quality and safety standards. Earthshot - Students explore sustainability by sourcing ethically, using seasonal ingredients, reducing waste, considering environmental impact, and developing awareness of sustainable practices in food preparation and production.	This unit builds on KS2 experiences but does not assume prior knowledge, addressing misconceptions about dietary needs, sustainability, and practical skills. It develops both theoretical understanding and practical competence for safe, independent cooking.

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Year 8

	Topic	Disciplinary Knowledge		Vocabulary		Assessment	Cross-Curricular Links	Golden Threads	Personal Development	Rationale
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Year 8 Part One	Industrial Food Practice and Nutrient Functions	<ul style="list-style-type: none"> More complex industry hygiene and food safety, including HACCP Recap of the Eatwell Guide and its purpose Function, examples and benefits of carbohydrates in the diet Function, examples and benefits of proteins in the diet 	<ul style="list-style-type: none"> Dough making and batch production Creative presentation of dishes Understanding fats in pastry Knife skills: claw and bridge techniques Accurate weighing and measuring of ingredients Adapting recipes to suit preferences or dietary needs Using eggs to coat foods (crumbing) 	Bacteria Contaminant Consume Function Insulate Saturated Repair Biological Physical Allergen Chemical Hazard	Shaping Score Coating Ingredient (various) Equipment (various)	Assessment of Learning: Students' practical skills and theoretical knowledge are assessed through observed tasks, end-of-unit knowledge checks, and written reflections, demonstrating secure understanding of food safety, nutrition, and ingredient functionality.	Science: Carbohydrates, proteins, nutrition, and food functionality Maths: Weighing, measuring, scaling recipes, batch production English: Reading and following complex recipes, writing evaluations PSHE/Citizenship: Healthy lifestyle choices, ethical sourcing, safe food handling Wider Design & Technology: Tool use, practical problem-solving, and creative food presentation	Ingredients - (ingredient sourcing) Students explore how ingredients are used thoughtfully, focusing on their function, nutritional contribution, and role in recipes, reinforcing links between ingredient choice, cooking techniques, and creative, nutritious outcomes.	SMSC - Students develop socially and morally by respecting peers, following complex hygiene rules, making ethical food choices, and reflecting on cultural and dietary implications of advanced cooking techniques. Think Careers - Restaurant manager. Link career to HACCP and understanding industry practices. Think Big Question – Why do we still eat junk food even when we know that it is bad for us? Earthshot - Students explore sustainability by considering seasonal ingredients, ethical sourcing, reducing food waste, and understanding environmental impact in ingredient selection and preparation of nutritious meals.	Students build on their health and safety knowledge from Year 7 but will now be able to link this to industry hygiene processes. The Eatwell Guide is covered in more detail as it provides the main government guidelines for healthy eating, essential for students to understand how to live a healthy lifestyle. Bread making gives students the basic skills for dough preparation, which can be built on for a range of further recipes. Most practical dishes build on prior skills learned in Year 7 while introducing more complex methods. Food science is gradually introduced through practical tasks, with more detailed study scheduled for Year 9.
Year 8 Part Two	Industrial Food Practice and Nutrient Functions	<ul style="list-style-type: none"> Function, examples, and benefits of fats in the diet Function and importance of hydration Role of dairy and calcium in the diet Function of vitamins and minerals, including excesses and deficiencies 	<ul style="list-style-type: none"> Boiling and simmering techniques A range of chopping techniques Demonstrating food hygiene consistently Using specialist equipment (e.g., whisk) Dovetailing recipes (combining multiple prepared components) Using pastry (pre-made) Adapting recipes to suit preferences or dietary needs 	Hydration Excess Deficiency Absorb Effect Soluble Coagulate Hazard Combine	Boiling Incorporate Seal Ingredient (various) Equipment (various)	Assessment of Learning: Students' practical skills and theoretical knowledge are assessed through observed tasks, end-of-unit knowledge checks, and written reflections, demonstrating understanding of nutrition and safe, effective cooking.	Science: Fats, vitamins, minerals, hydration, and nutrition Geography: Sustainable sourcing and environmental impact Maths: Measuring, weighing, and combining recipe components English: Reading and following complex recipes, writing reflections PSHE/Citizenship: Healthy lifestyle, ethical food choices, food hygiene Wider Design & Technology: Specialist equipment, dovetailing recipes, pastry work	Ingredients - (ingredient sourcing) Students explore how ingredients are used thoughtfully, considering nutritional function, cooking method, and dish outcome, reinforcing the link between ingredient choice, preparation technique, and healthy, well-presented dishes.	SMSC - Students develop socially and morally by respecting peers, following hygiene rules, making ethical and healthy food choices, and reflecting on cultural and dietary implications of ingredients. Think Careers – Nutritionist Link career to different elements of the eat well guide and understanding the role of each nutrient in the diet. Think Big Question – What are the most important foods we need to survive? Earthshot - Students explore sustainability by considering seasonal ingredients, reducing food waste, ethical sourcing, and understanding environmental impact when selecting and preparing nutritious meals.	Following the introduction to the Eatwell Guide, students develop their knowledge of cooking dishes using protein, which also links to SMSC as they explore multicultural foods. The skills used are more advanced, requiring the use of a wider range of ingredients and the combination of meats and vegetables. Students continue to build on prior skills while developing safe, independent cooking and an understanding of nutritional impact, ethical sourcing, and dietary requirements.

Cooking & Nutrition

Year 9

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Year 9 Part One	Industrial food safety	<ul style="list-style-type: none"> Causes of ill-health related to food safety Handling high-risk foods, correct storage, and preventing contamination Role of an Environmental Health Officer (EHO) in the industry Function and use of different specialist equipment 	<ul style="list-style-type: none"> Advanced knife skills Safe handling and preparation of high-risk foods Using specialist equipment effectively in recipe preparation Applying industry-standard hygiene practices (e.g., coloured chopping boards, food safety principles) 	Symptoms Legislation Regulation Abide Enforce Guidance Procedures Contaminants	Peeling Tempering Rapid Whisking/whisk	Assessment of Learning: Students are assessed on practical skills, accuracy, and safe handling of high-risk foods, alongside knowledge checks and written reflections demonstrating understanding of hygiene procedures and equipment use.	Science: Microorganisms, high-risk foods, and hygiene principles Geography: Seasonal sourcing and sustainability considerations Maths: Accurate weighing, measuring, and recipe scaling English: Reading complex recipes, writing reflections and evaluations Wider Design & Technology: Use of specialist equipment, advanced practical techniques, and creative presentation	Ingredients - (ingredient sourcing) Students explore how ingredients are used thoughtfully, with focus on safety, functionality, and accurate preparation, linking ingredient choice, specialist equipment, and industry-standard hygiene to successful dish outcomes.	SMSC - Students develop socially and morally through teamwork, respect for hygiene standards, ethical food handling, and reflection on cultural and dietary implications of cooking safely. Think Careers – EHO An EHO is an environmental health officer who enforces legislation within a food setting. Think Big Question – If you know something is wrong, but don't say anything, are you just as guilty as the person who did the wrong action? Prompt: what does the word 'guilty' mean? Earthshot - Students consider sustainability by safely handling ingredients, reducing waste, using seasonal foods, and understanding the environmental impact of high-risk foods and specialist equipment.	Students build on their health and safety knowledge from Years 7 and 8, now linking this understanding to industry standards. Health and hygiene is covered in more depth this term to advance students' understanding of safe practices within a catering industrial setting. Students investigate a range of job roles and associated legislation, including the role of an Environmental Health Officer, to understand professional responsibilities in the food industry. Practical work develops recipes that explicitly link to the theory lessons, embedding hygiene principles, advanced safety practices, and safe handling of high-risk foods while developing students' independence and competence in the kitchen.
Year 9 Part Two	specialist equipment and Food Science	<ul style="list-style-type: none"> Food science behind flour, raising agents, and fats Processes of coagulation, enzymatic browning, and gelatinisation Functions of ingredients when cooking Using scientific knowledge to problem solve during food preparation 	<ul style="list-style-type: none"> Preparing dishes with careful consideration of ingredient function Developing accuracy in weighing, measuring, and combining ingredients Creating recipes that demonstrate understanding of food science concepts Using flour, raising agents, fats, and other ingredients to achieve desired textures and results 	Function Absorbent Expanding Insufficient Coagulation Stability Appearance Lamination Biological Raising Physical Chemical Gelatinisation Combine Structure	Translucent Batter Tartlet/blind baking	Assessment of Learning: Students' practical skills and theoretical knowledge are assessed through observed tasks, end-of-unit assessment, and written reflections demonstrating understanding of ingredient function, food science, and hygiene practices.	Science: Food science concepts (coagulation, gelatinisation, enzymatic browning), ingredient functionality Geography: Sourcing ingredients and environmental considerations Maths: Weighing, measuring, ratios, and scaling recipes English: Reading recipes, writing reflections and evaluations Wider Design & Technology: Use of specialist equipment, problem solving, and practical application of food science	Ingredients - (ingredient sourcing) Students explore how ingredients behave and interact, linking scientific principles, hygiene, and preparation techniques to outcomes, reinforcing the connection between ingredient choice, method, and successful dishes.	SMSC - Students develop socially and morally by respecting peers, following hygiene standards, making informed choices, and reflecting on cultural and dietary implications of ingredients and cooking processes. Think Careers – Food scientist A person who tests ingredients and experiments with their properties. Think Big Question – How is food scientific knowledge used in society? Earthshot - Students consider sustainability by selecting ingredients responsibly, reducing waste, and understanding environmental impact while applying scientific knowledge to cooking processes.	Students build on prior Year 7–9 knowledge of hygiene, safety, and ingredient function, now linking it explicitly to food science concepts. Health and hygiene is embedded within practical lessons, while theory covers coagulation, enzymatic browning, and gelatinisation. Practical work develops recipes that allow students to problem solve using scientific principles, apply industry-standard hygiene procedures, and understand ingredient function, preparing them for independent, safe, and creative cooking.

Textiles Design

Year 7

	Topic	Disciplinary Knowledge	Vocabulary	Assessment	Cross-Curricular Links	Golden Threads	Personal Development	Rationale
Year 7 Part One	Introduction to Textiles Design and Creative Skills	<ul style="list-style-type: none"> Respond to a design brief or scenario Research and be inspired by artists and designers Understand fabrics, fibres, and how they are constructed Identify and use appropriate materials and components Develop hand embroidery and embellishment skills, included but not limited to running, cross and one other decorative stitch. Apply colour schemes and creative ideas 	Brief Construction Inspiration Analysis Media Primary Secondary Source Harmonising Embroidery Disperse	Assessment of Learning: Students are assessed through practical outcomes, demonstrating hand embroidery, embellishment, use of suitable components, and thoughtful application of colour and design principles.	Art: Exploring artist/designer inspiration, colour schemes, and creative design Maths: Measuring, pattern making, and symmetry in designs English: Writing and analysing design briefs, researching primary/secondary sources PSHE/Citizenship: Ethical and sustainable use of materials, collaboration Science: Properties of fibres and fabrics, understanding material behaviour	Materials – Students explore how textiles materials behave and can be manipulated, linking fibres, fabrics, colour, and embellishment to design choices and innovative, functional outcomes.	<p>SMSC – Students develop socially and morally through collaborative design, respecting peers’ ideas, making ethical choices in materials, and reflecting on the cultural significance of textile designs.</p> <p>Think Careers – Fabric weaver - creates textiles by interlacing threads on a loom to form fabrics. They design patterns and ensure the quality and consistency of the woven material for various uses, such as clothing or home furnishings.</p> <p>Think Big Question – What would a world be like without fabric?</p> <p>Earthshot - Students explore sustainability by considering ethical sourcing of fabrics, reducing waste, and making environmentally conscious choices in materials and techniques.</p>	This unit builds on KS2 Design & Technology, introducing students to textiles as a design medium and fundamental skills in hand embroidery, embellishment, and design thinking. It provides a strong foundation for safe workshop practice and transferable skills for more complex projects, embedding sustainable and ethical working practices and developing creative, innovative thinking in response to design briefs.
Year 7 Part Two	Textiles Design: Creative Techniques and Prototype Development	<ul style="list-style-type: none"> Use research and experimentation to inform design Understand dyeing processes and colour inspiration Construct prototypes using stitching and embellishment techniques Select and use materials and components accurately Apply creative ideas and colour schemes To create an initial design that includes elements of the design brief. Produce a finished outcome that meets the brief 	Embellishment Connotation Layering Interval Applique Annotation Accurately Prototype Logically Reflective	Assessment of Learning: Students’ final outcomes are assessed for creativity, accuracy, and adherence to the brief, alongside evaluation of how effectively their design meets client requirements. 60 mark written assessment completed based on theoretical knowledge in line with the assessment windows.	Art: Colour theory, creative experimentation, artist/designer inspiration Maths: Measuring, pattern layout, and proportion English: Research, analysing briefs, written evaluations PSHE/Citizenship: Ethical and sustainable use of materials, collaboration Science: Properties of fibres, fabrics, and dyes Wider Design & Technology: Applying practical techniques, problem solving, and product development	Materials - Students explore how textile materials behave and interact, linking colour, dyeing, design inspiration, and stitching techniques to innovative, functional outcomes that respond to a brief.	<p>SMSC – Students develop socially and morally through collaboration, respecting peers’ ideas, reflecting critically on their work, and considering cultural and ethical implications in their design choices.</p> <p>Think Careers – What jobs require sewing skills? What would happen if no one was taught these skills?</p> <p>Think Big Question – Textiles interior designer - making indoor spaces functional and interesting, by selecting essential and decorative items, such as colours, lighting, and materials.</p> <p>Earthshot - Students explore sustainability by considering ethically sourced fabrics, reducing waste, and understanding the environmental impact of materials and techniques used in their projects.</p>	This unit builds on Year 7 Part 1 and KS2 DT experiences, introducing students to creative textiles techniques and responding to a brief. Students develop fine motor skills through hand stitching and embellishment, use research and experimentation to inform designs, and learn to reflect on outcomes critically. Emphasis on sustainable and ethical material choices ensures students understand environmental impact while building a foundation of transferable skills for more complex projects in future years.

Textiles Design

Year 8

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Year 8 Part One	Textiles Design: Research And Creative Techniques	<ul style="list-style-type: none"> Respond to a design brief Research and be inspired by artists, designers, and sources Develop repeat patterns (including CAD) Recall, select and use materials and components Continue to develop hand embroidery and embellishment skills Construct prototypes with accurate stitching techniques Apply colour schemes and creative ideas 	analyse research elaborate contrast symmetrical Distorted Computer aided design Printing Sublimation Heat transfer	Assessment of Learning: Students' final outcomes are assessed for creativity, accuracy, and response to the brief, alongside reflection on design effectiveness.	Art: Colour theory, creative experimentation, artist/designer inspiration Maths: Measuring, pattern layout, and proportion English: Research, analysing briefs, written evaluations PSHE/Citizenship: Ethical and sustainable use of materials, collaboration Science: Properties of fibres, fabrics. Wider Design & Technology: Applying practical techniques, problem solving, and product development	Materials - Students explore how textile materials behave and interact, linking colour, printing, design inspiration, and stitching techniques to innovative, functional outcomes that respond to a brief.	SMSC – Students develop socially and morally through collaboration, respecting peers' ideas, reflecting critically on their work, exploring ethical implications in their design choices. Think Careers – Printer. A person who would manufacture screen or digital printing. Think Big Question – Alice in wonderland is children's book that has been told for many generations. What do you think the meaning behind the story is? Earthshot - Students explore sustainability by considering reducing waste, and understanding the environmental impact of materials and techniques used in their projects.	This unit builds on Year 7 and KS2 DT experiences, introducing students to creative textiles techniques and responding to a brief. Students develop fine motor skills through hand stitching and embellishment, use research and experimentation to inform designs, and learn to reflect on outcomes critically. Emphasis on sustainable and ethical material choices ensures students understand environmental impact while building a foundation of transferable skills for more complex projects in future years.
Year 8 Part Two	Textiles Design: Developing Designs and Producing Outcomes	<ul style="list-style-type: none"> Continue to respond to a design brief or specification Create initial and final designs using research, experimentation, and inspiration Develop and communicate ideas with annotated sketches and detailed plans Use stitching techniques accurately Construct a product in response to the brief, using textile materials, tools, and CAD elements Test, evaluate, and refine ideas and outcomes against the brief, considering user needs 	Symmetrical Reflection (mirror image). Embroidery Connotations Applique Functional Intricate Constructional Dimensional Adequate Component Innovation	Assessment of Learning: Students' outcomes are assessed for creativity, accuracy, and how well they meet the brief, including stitching, use of materials, and application of design ideas. 60 mark written assessment completed based on theoretical knowledge in line with the assessment windows.	Art: Colour theory, design skills, artistic inspiration Maths: Measuring and accuracy in construction Literacy: Reading and decoding instructions English: Oracy, critical thinking, interpreting design themes Performing Arts: Sensory understanding and creative expression PSHE/English Language: Emotional language, ethical decision-making, collaboration Wider Design & Technology: Applying practical techniques, problem solving, and product development	Materials - Students explore how textile materials, stitching, colour, and construction techniques influence outcomes, reinforcing thoughtful choices and accuracy when responding to a brief.	SMSC – Students develop socially and morally through collaboration, respecting peers' ideas, reflecting critically on design decisions, and making ethical choices in materials and processes. Think Careers – Teacher. A teacher of craft or textiles design. Think Big Question – Why do artists and designers need a theme and a colour palette for their products? Earthshot - Students consider sustainability by selecting materials responsibly, reducing waste, and understanding the environmental impact of fabrics, tools, and production techniques.	Students build on Year 7 and Year 8 Part 1, linking health and safety to industry-style processes. They develop creativity, experimentation, and traditional techniques before producing a finished product. Emphasis on sustainability, reflection, and independent use of tools ensures transferable skills for future projects.

Textiles Design

Year 9

	Topic	Disciplinary Knowledge	Vocabulary	Assessment	Cross-Curricular Links	Golden Threads	Personal Development	Rationale
Year 9 Part One	E-Textiles Design: Smart Materials	<ul style="list-style-type: none"> Research and be inspired by artists, designers, and biomimicry Understand the purpose of smart fabrics Plan and create circuits within textiles Add electronics to a product to include functional components such as lights Develop hand embroidery and embellishment, including running stitch Apply colour schemes and creative ideas 	Specification Properties Complex Expression Innovative Electronic Current Circuit Positive Negative Biomimicry Inspired Stimulus Response (smart materials) External Thermochromic	Assessment of Learning: Students are assessed on their prototypes, demonstrating accurate use of materials, electronics, circuits, and embroidery, as well as creativity and response to the design brief.	Art: Colour theory, design skills, inspiration from artists Maths: Measuring, planning, proportions PSHE/English Language: Emotional language, collaboration, reflection Science: Circuits, electronics, smart fabrics, biomimicry (e.g., chameleon colour change) Design & Technology: Builds on Year 8 electronics (lamp project), developing knowledge of circuits, components, and integrating electronics into practical products.	Materials - Students explore smart materials, circuits, and textiles, using materials and electronics with precision to create functional, user-focused outcomes. The integration of electronics reinforces purposeful material selection and design thinking.	SMSC – Students develop socially and morally by respecting peers’ ideas, considering ethical use of smart materials, and reflecting on how design decisions impact users and communities. Think Careers – What are smart materials and how could we use them in the future? Could you suggest a new smart material? Think Big Question – Advanced Space Suit Designer – link to smart materials Earthshot - Students consider sustainability by selecting materials responsibly, understanding environmental impact, and exploring innovative, low-waste approaches to integrating electronics in textiles.	This project builds on prior DT learning, introducing electronics within textiles. It merges skills developed in Year 8 and allows students to refine planning, design, and practical skills. Students follow a traditional design process, analysing briefs, completing task analyses, and planning specifications, ensuring clarity of purpose and direction. The concept of smart materials and e-textiles is rapidly evolving, and understanding their application is essential. Students focus on precision and material choice while creating circuits and functional prototypes, laying the groundwork for testing and refinement next term.
Year 9 Part Two	E-Textiles Design: Prototyping and Nature-Inspired Solutions	<ul style="list-style-type: none"> Plan and create circuits where resources allow (LEDs, cells, conductive components) Develop hand embroidery and embellishment, including running stitch Select and use materials and components accurately Apply colour schemes and creative ideas Construct a product and prototype in response to the brief Test, evaluate, and refine outcomes against the specification Use creativity and problem-solving to produce innovative, functional designs 	Investigation Domestic Industrial Innovative Stereotypical manufacture Functional Conductive Component LED Cell Stimulus (recap)	Assessment of Learning: Students’ prototypes are assessed for accuracy, creativity, functionality, and response to the brief, including stitching, material selection, and integration of electronics where applicable. 60 mark written assessment completed based on theoretical knowledge in line with the assessment windows.	Art: Colour theory, design skills, artistic and nature-inspired inspiration Maths: Measuring, planning, proportions PSHE: Emotional language, collaboration, ethical decisions Science: Circuits, electronics, smart fabrics, biomimicry (e.g., chameleon) Design & Technology: Builds on Year 8 electronics (lamp project), developing knowledge of circuits, components, and integrating electronics into practical products	Materials - Students explore how smart textiles, circuits, materials, and embellishment combine to create functional, innovative solutions, reinforcing thoughtful selection, accuracy, and purposeful design.	SMSC – Students develop socially and morally through collaboration, respecting peers’ ideas, reflecting on ethical material choices, and considering how their designs impact users and society. Think Careers – How does electronics support our daily lives? Do we rely on electronic products too much? Think Big Question – Material Technologist. Material technologies related to these components include injection moulded plastics, thermal formed plastics, textiles, fabrics, leather, foils, and laminates. Responsibilities may also include the integration of electrical and electronic technologies into the interior systems. Earthshot - Students consider sustainability through material selection, reducing waste, and efficient use of electronics, balancing creativity and functionality within budget constraints.	This unit builds on Year 9 Part 1, merging prior textiles and electronics skills while introducing nature-inspired and biomimicry design. Students follow the traditional design process, analysing briefs, planning, and producing functional prototypes. Due to budget constraints, the integration of electronics is optional, but students still gain an understanding of smart materials, circuits, and conductive components. Emphasis is placed on precision, sustainability, and innovative problem-solving, ensuring students can produce functional and creative outcomes within resource limits while developing transferable skills for future KS4 projects.

Product Design

Year 7

	Topic	Disciplinary Knowledge		Vocabulary	Assessment	Cross-Curricular Links	Golden Threads	Personal Development	Rationale
		Theory	Practical						
Year 7 Part One	Product Design: Introduction to Workshop Skills and Prototyping	<ul style="list-style-type: none"> Respond to a client brief or design specification Understand workshop safety, hazards, and safe working practices Understand copyright, trademarks, and intellectual property, and how they affect product design and manufacture Explore different types of wood and their uses 	<ul style="list-style-type: none"> Identify and use hand tools and machinery accurately Use a pillar drill/ bandfacer safely Mark out designs accurately on materials Understand and demonstrate relief cuts Create a prototype using a range of hand-held tools 	resistant precaution vice trademark delamination extraction	Assessment of Learning: Students' prototypes are assessed for accuracy, safe working practices, quality of finish, and how effectively the outcome responds to the design brief.	Wider Design & Technology (Food): Identifying hazards and safe working practices (Textiles): Understanding materials, pattern shaping, accuracy, and how design ideas are adapted across different materials Science: Hazards, materials, and workshop safety English: Reading and interpreting briefs, instructional text, oracy, problem-solving Maths: Measuring, intervals, accuracy Geography: Softwoods, natural resources, sustainability	Materials - Students learn to select, prepare, and manipulate wood thoughtfully, understanding how material choice, tools, and processes influence the quality, function, and sustainability of a product.	<p>SMSC – Students develop responsibility and respect through safe workshop behaviour, collaboration, and reflecting on ethical material choices and how products meet user needs.</p> <p>Think Careers – Joiner – A professional trained to prepare, shape, and manufacture wooden products and large-scale furniture using specialist tools and machinery.</p> <p>Think Big Question – What are three key words you would use to describe the purpose of designing products?</p> <p>Earthshot - Students consider sustainability by exploring wood types, responsible material choices, reducing waste, and understanding the environmental impact of manufacturing processes.</p>	<p>This unit provides students with a secure foundation in workshop safety, tools, and processes, building confidence when working with wood and machinery. The project introduces students to intellectual property, including copyright and trademarks, helping them understand the legal and ethical considerations of product design.</p> <p>Students explore material choice, sustainability, and responsible manufacture, linking design decisions to environmental impact. Prior learning from KS2 Design & Technology is built upon, but the unit does not rely on prior knowledge, ensuring all students can access and succeed in workshop-based learning.</p>
Year 7 Part Two	Product Design: Testing, Refining, and Finishing Products	<ul style="list-style-type: none"> Test, evaluate, and refine a prototype or product against a specification Apply problem-solving strategies, adapting designs and revisiting plans Identify and describe different wood finishes. Reflect critically on how well the outcome meets the original brief. 	<ul style="list-style-type: none"> Use a range of workshop machinery safely and accurately Use tools and techniques to achieve user-friendly outcomes Apply appropriate finishes (e.g. paint, varnish) considering material properties Demonstrate resilience and experimentation during making. 	clamp display authentic protective finishes pigmented (paint) modify	Assessment of Learning: Final products are assessed for accuracy, quality of finish, safe use of tools and machinery, and how effectively they meet the design specification and user needs. 60 mark written assessment completed based on theoretical knowledge in line with the assessment windows.	Wider Design & Technology (Textiles): Finishing techniques, accuracy, evaluating outcomes Science: Materials, properties, and safe working practices English: Oracy, evaluation, critical reflection Maths: Measurement, accuracy, modification Geography: Sustainability, material sourcing	Materials - Students refine their understanding of how materials, tools, finishes, and processes affect durability, function, and appearance, reinforcing thoughtful modification and high-quality outcomes.	<p>SMSC – Students develop resilience, teamwork, and responsibility by collaborating, reflecting on design decisions, and considering how products can be safely improved to meet users' needs.</p> <p>Think Careers – Product Designer (Interiors) – Designs functional and aesthetic products for interior spaces, considering materials, user needs, sustainability, and manufacturing processes.</p> <p>Think Big Question – We live in a world where broken items are often replaced rather than repaired. If a product can be fixed but you don't know how, what could you do?</p> <p>Earthshot - Students explore sustainable design by repairing, refining, and finishing products effectively, promoting reuse, longevity, and reduced waste rather than replacement.</p>	<p>This unit builds on the foundational workshop skills developed in Part 1, focusing on testing, refining, and finishing products. Students learn to evaluate outcomes critically against a specification, apply suitable finishes, and problem-solve when errors occur.</p> <p>Emphasis is placed on safe machinery use, teamwork, and resilience, preparing students for more complex projects involving forces, motion, and functional outcomes.</p> <p>Understanding sustainability and repair supports responsible attitudes toward design and manufacture.</p>

Product Design

Year 8

	Topic	Disciplinary Knowledge		Vocabulary	Assessment	Cross-Curricular Links	Golden Threads	Personal Development	Rationale
		Theory	Practical						
Year 8 Part One	Product design: Designing Functional Lamps	<ul style="list-style-type: none"> Iterative design and how it prevents design fixation Explore the work of past and present designers for inspiration Forces and movement (rotary, linear, reciprocating, oscillating) electrical circuits for lighting How design decisions are influenced by users, materials, and constraints Understand the importance of planning, problem-solving, and revisiting designs 	<ul style="list-style-type: none"> Develop joining and assembly skills using adhesives and fixings Create and test a simple electrical circuit safely Develop basic soldering skills to secure electrical components Apply finishing techniques to improve product quality (e.g. sanding) 	Iteration specification aesthetics Motif Refinement Circuit Mechanism Inclusive Join	Assessment of Learning: Students are assessed on the functionality, safety, accuracy, and quality of their lamp design, including the use of movement and electrical components.	Wider Design & Technology (Textiles): Inclusive design, iterative development, evaluating products against user needs (Cooking & Nutrition): Health and safety principles, risk assessment, and following processes accurately Science: Electricity, circuits, forces, movement, and material properties Maths: Measuring, marking out, angles, accuracy, and proportions English: Reading and interpreting design briefs, instructional text, oracy, evaluation and justification of decisions Geography: Sustainability, material sourcing, and environmental impact of manufacturing Wider	Materials - Students develop understanding of how wood, mechanisms, and electrical components can be combined thoughtfully to create safe, functional, and user-focused products.	<p>SMSC – Students develop empathy and responsibility by designing inclusive products, collaborating effectively, and reflecting on how design decisions impact users’ safety and accessibility.</p> <p>Think Careers – Interior Product Designer – Designs, tests, and refines functional products for interior spaces, balancing aesthetics, safety, user needs, and sustainability.</p> <p>Think Big Question – How can we design a functional product using wood safely, and why is this important for manufacturers?</p> <p>Earthshot - Students consider sustainability by selecting materials responsibly, refining designs to reduce waste, and creating durable, long-lasting products.</p>	<p>This unit introduces students to a structured product design process, focusing on analysing briefs, generating ideas, and avoiding design fixation through iterative design.</p> <p>Students build on prior KS3 learning while increasing technical challenge, independence, and accuracy.</p> <p>The project should allow students to explore inclusive design, functionality, and basic electrical systems while reinforcing safe workshop practices and responsible material choices.</p>
Year 8 Part Two	Product Design Refining, Evaluating, and Manufacturing Quality Products	<ul style="list-style-type: none"> Apply the iterative design process to design, make, test, and refine a final product. Importance of quality control, accuracy, and surface finish Adapt designs and problem-solve in response to challenges Evaluate product against specification and user needs 	<ul style="list-style-type: none"> Refine machine skills using the bandfacer and pillar drill accurately Assemble components accurately, ensuring secure and aligned joints Apply a range of finishing techniques to improve durability and presentation 	Mechanism Quality assurance Delamination Smooth Joining Finalise Assess	Assessment of Learning: Final products are assessed for quality of manufacture, accuracy, surface finish, functionality, and how effectively they meet the design specification and user needs. 60 mark written assessment completed based on theoretical knowledge in line with the assessment windows.	Wider Design & Technology (Textiles): Evaluating outcomes, surface finishes, accuracy (Food & Nutrition): Quality control, evaluation, reducing waste Science: Materials, forces, and performance testing Maths: Accuracy, measurement, tolerances Geography: Sustainability, responsible material sourcing	Materials - Students deepen their understanding of how materials, tools, finishes, and processes influence durability, function, and quality, reinforcing thoughtful refinement and responsible design decisions.	<p>SMSC – Students develop resilience, responsibility, and collaboration by refining designs, responding to feedback, and considering how products can be improved to better serve users.</p> <p>Think Careers – Sustainable Design Specialist – Focuses on creating environmentally responsible products by selecting sustainable materials, improving durability, and minimising waste across manufacture and use.</p> <p>Think Big Question – Why is sustainability important for designers?</p> <p>Earthshot - Students explore sustainability by improving product durability, refining finishes, reducing waste, and understanding how thoughtful design supports environmentally responsible manufacturing.</p>	<p>This unit builds on Part 1 by focusing on manufacture, refinement, and evaluation. Students apply iterative design principles to improve accuracy, quality, and functionality while working with increased independence. Emphasis on quality assurance, surface finish, and sustainability supports students in understanding how professional designers refine products to meet user needs and reduce environmental impact. These skills prepare students for more complex KS3 and in future KS4 Design and Technology projects.</p>

Product Design

Year 9

	Topic	Disciplinary Knowledge		Vocabulary	Assessment	Cross-Curricular Links	Golden Threads	Personal Development	Rationale
		Theory	Practical						
Year 9 Part One	Product Design: Automata & Forces & Motion	<ul style="list-style-type: none"> What automata are and their historical significance Cams and followers, and how cam shapes affect motion Types of motion: linear, rotary, oscillating Three classes of levers and their functions How linkages combine with levers to create movement Apply ACCESS FM to analyse products Safe workshop practices and hazard identification Construct a basic cam and follower mechanism Produce technical drawings of automata components 	<ul style="list-style-type: none"> Assemble a simple linkage and cam-follower system accurately. Use a scroll saw safely Prepare materials for machinery Use machines and hand tools safely Create a prototype of an automata mechanism using hand tools Assemble components with accuracy and attention to detail 	Automata Motion Reciprocating Linear Oscillating Cam Follower Fulcrum pivot Research ACCESSFM	Assessment of Learning: Students are assessed on their understanding of mechanical principles, accuracy of technical drawings, and the successful construction of basic cam and linkage mechanisms.	Science: Forces, motion, and mechanical systems Mathematics: Accurate measurement, ratios, and mechanical advantage History: Historical development and cultural significance of automata Art & Design: Character design, aesthetics, and visual impact	Materials - How materials, mechanisms, and assembly techniques affect motion, durability, and function. Links making to informed, thoughtful design decisions.	<p>SMSC – Students collaborate, communicate ideas, act responsibly with materials, and express creativity while exploring mechanical systems, history, and culture.</p> <p>Think Careers – Model Maker / Prototype Developer Model makers create accurate physical prototypes to visualise, test, and refine products before manufacture. They work closely with designers and engineers to ensure mechanisms function effectively and designs meet user needs.</p> <p>Think Big Question – How can we design a creative mechanism using cams, levers, and linkages to solve a real-world problem?</p> <p>Earthshot - Students choose materials and design mechanisms efficiently, focusing on durability and waste reduction to create sustainable products.</p>	Part One introduces students to the foundational disciplinary knowledge required for designing and making automata. The focus is on understanding mechanical systems such as cams, followers, levers, and linkages, alongside developing analytical skills through design briefs and product analysis. This theoretical grounding enables students to make informed design decisions and understand the historical and contemporary relevance of automata. By combining conceptual learning with structured practical tasks, students build confidence in problem-solving and prepare for the increased technical challenge of Part Two.
Year 9 Part Two	Product Design: Automata Construction	<ul style="list-style-type: none"> Knowledge of how to mark out materials accurately. Assembly of components into a functioning mechanism. Exploring which type of movement is suitable for the automata. Evaluate finished products against design criteria Use CAD software to develop and refine prototypes (where resources and equipment is permitted). Knowledge of how to link CAD/CAM processes to automated manufacturing. 	<ul style="list-style-type: none"> Use workshop machinery and tools safely Cut, shape, and finish wood accurately Drill and join components securely Apply surface finishes for aesthetics and durability Align components for smooth mechanical movement Test and refine working automata mechanisms Operate laser cutter safely (where equipment allows) 	CAD (computer aided design) Systematic Accuracy Function Assembly Evaluate	Assessment of Learning: Students are assessed on the precision of their components, accuracy in cutting, drilling, and joining, alignment of mechanisms for smooth motion, and the quality of surface finishes. They are also evaluated on how well the final automata meets the design brief and functional requirements. 60 mark written assessment completed based on theoretical knowledge in line with the assessment windows.	Science: Tolerances, and material properties, forces and motion. Mathematics: Geometry, measurements, and tolerances for assembly Engineering/STEM : Workshop practices, automated manufacturing, functional mechanisms Art & Design: Surface finishes, aesthetics, and visual impact	Materials - Students link material selection, assembly, surface finishes, and mechanical function to quality and performance, reinforcing thoughtful design and professional standards.	<p>SMSC – Students collaborate, act responsibly with tools and materials, express creativity through design, and explore the historical, cultural, and ethical context of automata.</p> <p>Think Careers – Toy Designer / Automaton Designer – Designs fun, educational, and mechanical products, combining creativity, playability, and safe, functioning mechanisms.</p> <p>Think Big Question – Why is computer-aided design and manufacture so important to designers?</p> <p>Earthshot - Students focus on material efficiency, durability, and reducing waste, considering sustainability in every stage of design, manufacture, and finishing.</p>	Students now apply these foundations to advanced practical skills, combining mechanism assembly, creative components and finishing techniques to create a functioning automata. Emphasis on safety, accuracy, quality finish, and evaluation mirrors professional practice, preparing students for engineering, design, and technical pathways. Integrating digital manufacturing with traditional techniques allows students to refine creativity, problem-solving, and evaluative skills, producing a high-quality product that meets the design brief.