

Design and Technology

Year 1

Design, make, evaluate and improve	<ul style="list-style-type: none">• Design products that have a definite function for a particular person (Christmas card)• Make products to meet basic design brief Band 1 <ul style="list-style-type: none">• Create simple designs for a product
Food	<ul style="list-style-type: none">• Select from and use ingredients according to their characteristics (Healthy sandwich) Band 1 <ul style="list-style-type: none">• Talk about what he/she eats at home and begin to discuss what healthy foods are• Say where some food comes from and give examples of food that is grown• Use simple tools with help to prepare food safely
Textiles	<ul style="list-style-type: none">• Use a running stitch to join fabric• Use methods such as dyeing, adding sequins or printing alter the appearance of fabric• Make use of template to produce shapes.
Construction	<ul style="list-style-type: none">• Practice techniques to join and/or strengthen materials eg , gluing and reinforcing card. Band 1 <ul style="list-style-type: none">• Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing• Use a range of simple tools to cut, join and combine materials and components safely• Build structures, exploring how they can be made stronger, stiffer and more stable• Use wheels and axles in a product
Historical inspiration	<ul style="list-style-type: none">• Investigate historic designs to find their strengths and weaknesses

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Year 2

Design, make, evaluate and improve	<ul style="list-style-type: none">• Design and make products, modifying the product as the project evolves Bird house model Band 2 <ul style="list-style-type: none">• Design purposeful, functional, appealing products for himself/herself and other users based on design criteria• Generate, develop, model and communicate his/her ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology• Choose appropriate tools, equipment, techniques and materials from a wide range• Evaluate and assess existing products and those that he/she has made using a design criteria
Food	<ul style="list-style-type: none">• Safely cut, peel or grate ingredients in a hygienic manner (fruit salad)• Use measuring cups or electronic scales to measure the required amounts• Combine ingredients to produce food. Band 2 <ul style="list-style-type: none">• Understand the need for a variety of food in a diet• Understand that all food has to be farmed, grown or caught• Use a wider range of cookery techniques to prepare food safely
Mechanics	<ul style="list-style-type: none">• Explore and use mechanisms in their products, wheels and axles Band 2 <ul style="list-style-type: none">• Explore and use mechanisms e.g. levers, sliders, wheels and axles, in his/her products
Materials	<ul style="list-style-type: none">• Demonstrate safe use of a given tool.• Perform a range of cutting and shaping techniques eg tearing, cutting, folding and curling Bird boxes• Use a range of joining techniques eg gluing, hinges or combining materials to strengthen. Band 2 <ul style="list-style-type: none">• Safely measure, mark out, cut and shape materials and components using a range of tools• Investigate different techniques for stiffening a variety of materials and explore different methods of enabling structures to remain stable
Historical inspiration	<ul style="list-style-type: none">• Take an existing design and propose improvements• Explore the processes used to create products

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Year 3

Design, make, evaluate and improve	<ul style="list-style-type: none">• Produce designs with a clear purpose having explored needs, food packaging• Select materials carefully to suit the design and use. Band 3 <ul style="list-style-type: none">• Use knowledge of existing products to design his/her own functional product• Create designs using annotated sketches, cross-sectional diagrams and simple computer programmes• Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them• Investigate and analyse existing products and those he/she has made, considering a wide range of factors
Textiles	<ul style="list-style-type: none">• Use correct stitch to join materials felt stocking or angel deco• Add decorative finish using a suitable technique
Construction	<ul style="list-style-type: none">• Select appropriate techniques to construct products Band 3 <ul style="list-style-type: none">• Safely measure, mark out, cut, assemble and join with some accuracy• Strengthen frames using diagonal struts• Understand how mechanical systems such as levers and linkages or pneumatic systems create movement
Food	<ul style="list-style-type: none">• Use correct utensils to hygienically prepare food• Combine and or cook Band 3 <ul style="list-style-type: none">• Talk about the different food groups and name food from each group• Understand that food has to be grown, farmed or caught in Europe and the wider world• Use a wider variety of ingredients and techniques to prepare and combine ingredients safely
Historical inspiration	<ul style="list-style-type: none">• Know the work of some recognised designers in all areas of study (including pioneers in horticultural techniques to stimulate ideas for designs)

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Year 4

Design, make, evaluate and improve	<ul style="list-style-type: none">• Refine methods and design as work progresses, constantly reassessing design.• Use computer packages to design and model products. Band 4 <ul style="list-style-type: none">• Use knowledge of existing products to design a functional and appealing product for a particular purpose and audience• Create designs using exploded diagrams• Use his/her knowledge of techniques and the functional and aesthetic qualities of a wide range of materials to plan how to use them• Consider how existing products and his/her own finished products might be improved and how well they meet the needs of the intended user
Electricity	<ul style="list-style-type: none">• Construct series and parallel circuits Band 4 <ul style="list-style-type: none">• Understand and use electrical systems in products
Mechanics	<ul style="list-style-type: none">• Apply understanding of forces to select a suitable mechanism eg levers, winding mechanism, pulleys and gears. Band 4 <ul style="list-style-type: none">• Use techniques which require more accuracy to cut, shape, join and finish his/her work e.g. Cutting internal shapes, slots in frameworks
Materials	<ul style="list-style-type: none">• Use suitable cutting and shaping techniques• Choose suitable joining techniques Band 4 <ul style="list-style-type: none">• Apply techniques he/she has learnt to strengthen structures and explore his/her own ideas
Historical inspiration	<ul style="list-style-type: none">• Make improvements to established designs and be able to explain why• Disassemble designs to discover how they work.

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Year 5

Design, make, evaluate and improve	<ul style="list-style-type: none">• Design by considering the user, prioritising good function before profit.• Produce several prototypes each building upon the previous to optimise design <p>Band 5</p> <ul style="list-style-type: none">• Use his/her research into existing products and his/her market research to inform the design of his/her own innovative product• Produce step by step plans to guide his/her making, demonstrating that he/she can apply his/her knowledge of different materials, tools and techniques• Make detailed evaluations about existing products and his/her own considering the views of others to improve his/her work
Electricals and Electronics	<ul style="list-style-type: none">• Create circuits using electronics kits that combine a number of parts (e.g. LEDs, resistors, chips etc.) <p>Band 5</p> <ul style="list-style-type: none">• Understand how to use more complex mechanical and electrical systems
Construction	<ul style="list-style-type: none">• Practice practical skills to a reasonable standard to produce products <p>Band 5</p> <ul style="list-style-type: none">• Create prototypes to show his/her ideas• Make careful and precise measurements so that joins, holes and openings are in exactly the right place• Build more complex 3D structures and apply his/her knowledge of strengthening techniques to make them stronger or more stable
Textiles	<ul style="list-style-type: none">• Use a variety of stitching techniques to join fabrics.• Understand the purpose of and include a seam allowance.
Historical inspiration	<ul style="list-style-type: none">• Combine designs from several significant designers explaining the selections.

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Year 6

Design, make, evaluate and improve	<ul style="list-style-type: none">• Produce a good quality finish to products using art techniques• Include design processes such as prototypes, cross-sectional diagrams and CAD Band 6 <ul style="list-style-type: none">• Use research he/she has done into famous designers and inventors to inform the design of his/her own innovative products• Generate, develop, model and communicate his/her ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design• Use technical knowledge accurate skills to problem solve during the making process• Use his/her knowledge of famous designs to further explain the effectiveness of existing products and products he/she have made
Food	<ul style="list-style-type: none">• Understand how to store and handle food ingredients properly.• Invent and modify own recipes including ingredients, methods, cooking times and temperatures Band 6 <ul style="list-style-type: none">• Research, plan and prepare and cook a savoury dish, applying his/her knowledge of ingredients and his/her technical skills
Materials	<ul style="list-style-type: none">• Cut with precision and produce a good finish• Select appropriate tools to cut and shape a particular type of material Band 6 <ul style="list-style-type: none">• Apply his/her knowledge of materials and techniques to refine and rework his/her product to improve its functional properties and aesthetic qualities• Use a wide range of methods to strengthen, stiffen and reinforce complex structures and can use them accurately and appropriately
Mechanics	<ul style="list-style-type: none">• Combine electronics and mechanics to produce original designs• Use cams to change a rotation into a push/pull movement Band 6 <ul style="list-style-type: none">• Apply his/her understanding of computing to program, monitor and control his/her product
Historical inspiration	<ul style="list-style-type: none">• Start with existing designs and invent improved ones• Evaluate the design of products and identify possible further changes to improve its performance