

| Whole School Curriculum Map for: Design & Technology | | | |
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| Year Group | To master practical skills | To design, make, evaluate and improve | To take inspiration from design throughout history |
| R | <ul style="list-style-type: none"> Learning to construct with a purpose in mind, e.g. using scissors, glue, string and a hole-punch to make a bag to store items collected during a Forest School session. Observing closely and replicating a structure, e.g. following a visit, children make a milking shed, church tower out of small wooden bricks. Learning about planning and adapting initial ideas to make them better, e.g. a child might choose to use scissors, a stapler, elastic bands and glue to join bits together to make a toy vehicle. But they might then modify their initial idea by using masking tape. Children should use a range of tools including scissors, hole punch, stapler, glue spreader, rolling pin, cutter and grater. Beginning to understand some of the tools, techniques and processes involved in food preparation. E.g. taking turns stirring the mixture for a cake and then watching it rise while cooking. Children should practise stirring, mixing, pouring and blending ingredients during cookery activities. | <ul style="list-style-type: none"> Opportunities to notice and discuss materials around them e.g. utensils for cooking, tree barks on a walk, soft furnishings in the classroom. Opportunities to discuss reasons that make activities safe or unsafe e.g. hygiene and electrical awareness. Opportunities to discuss appropriate use of senses e.g. when tasting different foods. Opportunities to use the language of designing and making, e.g. words such as 'join', 'build' and 'shape' as well as evaluative and comparative language - 'longer', 'shorter', 'lighter', 'heavier' and 'stronger'. Children should also learn to record their experiences by, for example, drawing, writing, voice recording or modelling. | <ul style="list-style-type: none"> Learning about how everyday objects work by dismantling things and looking closely at their component parts, e.g. a child might dismantle a pepper grinder and discover how it is put together and the materials different parts are made from. |
| 1 | <ul style="list-style-type: none"> Measure or weigh using measuring cups or electronic scales Cut, peel or grate ingredients safely and hygienically. Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). Shape textiles using templates. Begin to diagnose faults in battery-operated devices (such as low battery, water damage or battery terminal damage). Begin to model designs using software. Begin to use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. Work towards creating products using levers, wheels and winding mechanisms | <ul style="list-style-type: none"> Design products that have a clear purpose and an intended user. | <ul style="list-style-type: none"> Explore how products have been created. |
| 2 | <ul style="list-style-type: none"> Assemble or cook ingredients. Cut materials safely using tools provided. Measure and mark out to the nearest centimetre. Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen). Join textiles using running stitch. Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing). | <ul style="list-style-type: none"> Make products, refining the design as work progresses. Use software to design. | <ul style="list-style-type: none"> Explore objects and designs to identify likes and dislikes of the designs. Suggest improvements to existing designs. |

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| | <ul style="list-style-type: none"> • Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage). • Model designs using software. • Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products • Create products using levers, wheels and winding mechanisms | | |
| 3 | <ul style="list-style-type: none"> • Measure ingredients to the nearest gram accurately and follow a recipe. • Cut materials accurately and safely by selecting appropriate tools. Select appropriate joining techniques. • Join textiles with appropriate stitching. • Begin to create series and parallel circuits • Begin to control and monitor models using software designed for this purpose. • Choose suitable techniques to construct products or to repair items. • Begin to use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears). | <ul style="list-style-type: none"> • Design with purpose by identifying opportunities to design. | <ul style="list-style-type: none"> • Improve upon existing designs, giving reasons for choices. Disassemble products to understand how they work |
| 4 | <ul style="list-style-type: none"> • Prepare ingredients hygienically using appropriate utensils. Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking). • Measure and mark out to the nearest millimetre. Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). • Understand the need for a seam allowance. Select the most appropriate techniques to decorate textiles. • Create series and parallel circuits • Control and monitor models using software designed for this purpose. • Strengthen materials using suitable techniques. • Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears). | <ul style="list-style-type: none"> • Make products by working efficiently (such as by carefully selecting materials). Refine work and techniques as work progresses, continually evaluating the product design. • Use software to design and represent product designs | <ul style="list-style-type: none"> • Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. |
| 5 | <ul style="list-style-type: none"> • Demonstrate a range of baking and cooking techniques. Create and refine recipes, including ingredients, methods, cooking times and temperatures • Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). | <ul style="list-style-type: none"> • Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Ensure products have a high quality finish, using art skills where appropriate. | <ul style="list-style-type: none"> • Create innovative designs that improve upon existing products. |

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| | <ul style="list-style-type: none"> • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper). • Begin to develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding). • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion). • Begin to create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips). • Begin to write code to control and monitor models or products. • Convert rotary motion to linear using cams. | | |
| 6 | <ul style="list-style-type: none"> • Understand the importance of correct storage and handling of ingredients (using knowledge of microorganisms). Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. • Create objects (such as a cushion) that employ a seam allowance. Join textiles with a combination of stitching techniques (such as backstitch for seams and running stitch to attach decoration). • Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips). • Write code to control and monitor models or products. • Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding). • Use innovative combinations of electronics (or computing) and mechanics in product designs | <ul style="list-style-type: none"> • Make products through stages of prototypes, making continual refinements. • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs. | <ul style="list-style-type: none"> • Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. Evaluate the design of products so as to suggest improvements to the user experience. |