

## Design & Technology - Learning Progression

| Key Area          | EYFS   | Y1   | Y2  | Y3   | Y4   | Y5   | Y6  |
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| <b>Design</b>     | <p>Explore different materials freely, to develop their ideas about how to use them and what to make.</p> <p>Develop their own ideas and then decide which materials to use to express them.</p> | <p>Design products that have a clear purpose and an intended user.</p> <p>Explore objects and designs to identify likes and dislikes of the designs.</p> <p>Talk about own design.</p> <p>Use words and pictures to describe designs</p> | <p>Design products that have a clear purpose and an intended user, which follow the design criteria given.</p> <p>Refine the design as work progresses.</p> <p>Use software, pictures, templates and mock-ups to design.</p> <p>Explore how products have been created as research for own designs.</p> | <p>Design with purpose by identifying opportunities to design.</p> <p>Use design skills such as annotated sketches and prototypes.</p> <p>Talk about how the original design may change after research and prototypes and note these changes and reasoning</p> | <p>Design with purpose by identifying opportunities to design functional and appealing products.</p> <p>Use software to design and represent product designs.</p> <p>Identify some of the great designers in history to generate ideas for designs.</p> <p>Disassemble products to understand how they work.</p> | <p>Design with the user in mind, motivated by the service a product will offer.</p> <p>Make products through stages of prototypes, making continual refinements.</p> <p>Combine elements of design from a range of inspirational designers throughout history.</p> <p>Use research to create innovative designs that improve upon existing products.</p> | <p>Generate, develop, model and communicate ideas through discussion, annotated sketches, exploded diagrams and through prototypes and computer aided design.</p> <p>Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.</p> |
| <b>Vocabulary</b> | <p>Design<br/>Plan<br/>Choose</p>  | <p>Purpose<br/>Product<br/>User</p>  | <p>Research<br/>Template</p>  | <p>Annotate<br/>Prototype<br/>Adapt<br/>Original</p>   | <p>Function<br/>Technique<br/>Disassemble</p>  | <p>Service<br/>Diagram<br/>Investigate<br/>Alternative<br/>Appealing<br/>Consumer</p>  | <p>Programme<br/>Designer<br/>Engineer<br/>Architect<br/>Organise<br/>Prepare</p>   |

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| <p><b>Make</b></p> | <p>Join different materials and explore different textures.</p> <p>Use one-handed tools and equipment, for example, making snips in paper with scissors. Use a comfortable grip with good control when holding pens and pencils.</p> <p>Develop their small motor skills so that they can use a range of tools competently, safely and confidently.</p> <p>Create collaboratively, sharing ideas, resources and skills.</p> | <p>Cut ingredients safely and hygienically. Assemble or cook ingredients.</p> <p>Cut materials safely using tools provided.</p> <p>Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).</p> <p>Shape textiles using templates.</p> <p>Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products.</p> | <p>Cut, peel or grate ingredients safely and hygienically. Measure or weigh using measuring cups or electronic scales.</p> <p>Measure and mark out to nearest cm. Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen).</p> <p>Join textiles using running stitch.</p> | <p>Prepare ingredients hygienically using appropriate utensils.</p> <p>Measure accurately, follow a recipe and assemble or cook ingredients</p> <p>Cut materials accurately and safely by selecting appropriate tools.</p> <p>Select appropriate joining techniques.</p> <p>Understand the need for a seam allowance.</p> <p>Join textiles with appropriate stitching.</p> | <p>Prepare ingredients hygienically using appropriate utensils.</p> <p>Measure ingredients to the nearest gram.</p> <p>Measure and mark out to the nearest mm.</p> <p>Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs).</p> <p>Select the most appropriate techniques to decorate textiles</p> | <p>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).</p> <p>Join textiles with a combination of stitching techniques (e.g. back stitch for seams and running stitch to attach decoration).</p> <p>Develop a range of practical skills to create products (e.g cutting, drilling and screwing, nailing, gluing, filling and sanding).</p> | <p>Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (e.g. the nature of fabric may require sharper scissors than would be used to cut paper) and to create suitable visual and tactile effects in the decoration of textiles</p> |
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| <b>Vocabulary</b> | Join<br>Cut<br>Material<br>Grip<br>Safe/ly   | Join<br>Cut<br>Material<br>Grip<br>Textile<br>Fabric<br>Tear<br>Fold<br>Curl<br>Drill<br>Screw<br>Glue<br>Nail<br>Ingredients<br>Shape | Peel<br>Grate<br>Ingredients<br>Measure<br>Weigh<br>Hinge<br>Equipment<br>Stitch<br>Needle<br>Thread<br>Centimeter   | Hygienic<br>Accurate<br>Fastening<br>Seam<br>Component<br>Combine<br>Reinforce<br>Framework  | Utensils<br>Millimeter<br>Perimeter<br>Slot<br>Flap<br>Decorate<br>Seam<br>Rotate<br>Secure<br>Grams<br>Appeal   | Precise<br>Refine<br>Sanding<br>Rough<br>Drilling<br>Screwing<br>Nailing<br>Filing<br>Appearance<br>Dimension<br>Crease<br>Weave<br>Loom  | Quality<br>Qualities<br>Tactile<br>Scale<br>Detail<br>Slide<br>Architect<br>Designer<br>Engineer<br>Programme<br>Control   |
| <b>Evaluate</b>   | Return to and build on their previous learning, refining ideas and developing their ability to represent them. | Recognise if a battery operated device works or not.<br><br>Suggest improvements to existing designs.                                  | Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage).<br><br>State likes and dislikes about own products and evaluate against design criteria. | Refine work and techniques as work progresses, evaluating the end product design.<br><br>Improve upon existing products, giving reasons for choices.<br><br>Talk about how own product could be improved if made again in the future | Refine work and techniques as work progresses, continually evaluating the product design and how well they meet the needs of the user.<br><br>Investigate and analyse a range of existing products and explain how they will help to develop my design | Ensure products have a high quality finish, using art skills where appropriate.<br><br>Make detailed evaluations about existing products and my own considering the views of others to improve my work. | Evaluate the design of own products against design criteria to suggest improvements to the user experience. Understand how key events and individuals in design and technology have helped shape the world |
| <b>Vocabulary</b> | Stronger<br>Bigger<br>More<br>Less<br>Change   | Weaker<br>Smaller<br>Improve<br>Decide   | Low<br>Damage<br>Like<br>Dislike<br>Difficult  | Stiffer<br>Repair  | Test<br>Complete<br>Consider   | Suitable<br>Reinforce   | Adapt<br>Evaluate  |

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| <p><b>Technical Knowledge</b></p> | <p>Choose the right resources to carry out their own plan.</p> <p>Know and talk about factors that support health and wellbeing.</p> | <p>Create products using levers and wheels.</p> <p>Build structures, exploring how they can be made stronger</p> <p>Know basic cooking hygiene, principles of healthy eating and where some food comes from</p> | <p>Create products using winding mechanisms</p> <p>Investigate different techniques to ensure materials and structures are strong and stable.</p> <p>Know the advantages of a healthy diet and where foods come from</p> | <p>Choose suitable techniques to construct products or to repair/ reinforce more complex structures</p> <p>Use scientific knowledge to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).</p> <p>Apply the principles of healthy and varied diets</p> | <p>Strengthen materials using suitable techniques.</p> <p>Use scientific knowledge to choose appropriate mechanisms for a product.</p> <p>Understand and use electrical systems in products.</p> <p>Assemble and cook ingredients (controlling the temperature of the oven or hob, if cooking) to prepare a variety of dishes</p> | <p>Understand the importance of correct storage and handling of ingredients (knowledge of microorganisms).</p> <p>Demonstrate a range of baking and cooking techniques to prepare a variety of dishes.</p> <p>Convert rotary motion to linear using cams.</p> <p>Apply techniques I have learnt to strengthen structures and explore my own ideas.</p> | <p>Measure accurately and calculate ratios of ingredients to scale up or down from recipe.</p> <p>Create and refine recipes, including seasonal ingredients, methods, cooking times and temperatures.</p> <p>Use innovative combinations of electronics (or computing) and mechanics in product designs</p> <p>Build more complex 3D structures and apply my knowledge of strengthening techniques to make them stronger and more stable.</p> |
| <p><b>Vocabulary</b></p>          | <p>Healthy<br/>Fruit<br/>Vegetable<br/>Fix<br/>Stick<br/>Attach</p>  | <p>Base<br/>Edge<br/>Thicker<br/>Thinner<br/>Lever<br/>Wheel<br/>Slot</p>   | <p>Lever<br/>Surface<br/>Stable<br/>Diet</p>   | <p>Construct<br/>Axel<br/>Cog<br/>Pulley<br/>Fasten<br/>Joint</p>   | <p>Mechanism<br/>Load<br/>Pivot<br/>Recipe</p>  | <p>Rotary<br/>Linear<br/>Micro-organisms</p>   | <p>Temperature<br/>Nutritious<br/>Input<br/>Output</p>  |