

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Design: Researching, developing, planning and communicating ideas	<p>Begin to generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups.</p> <p>Begin to draw on their own experience to help generate ideas and research conducted on criteria.</p> <p>Begin to understand the development of existing products: What they are for, how they work, materials used.</p> <p>Start to suggest ideas and explain what they are going to do.</p> <p>Develop an understanding of the need for market research.</p>	<p>Begin to generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology (ICT)</p> <p>Start to generate ideas by drawing on their own and other people's experiences.</p> <p>Begin to develop their design ideas through discussion, observation, drawing and modelling.</p> <p>Identify a purpose for what they intend to design and make.</p>	<p>Begin to develop, model and communicate their ideas through discussion, annotated sketches, prototypes, pattern pieces.</p> <p>With growing confidence generate ideas for an item, considering its purpose and the user/s.</p> <p>Start to order the main stages of making a product.</p> <p>Identify a purpose and establish criteria for a successful product.</p> <p>Understand how well products have been designed, made, what materials have been used and the construction technique.</p>	<p>Begin to develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces.</p> <p>Start to generate ideas, considering the purposes for which they are designing-link with Mathematics and Science.</p> <p>Confidently make labelled drawings from different views showing specific features.</p> <p>Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail.</p>	<p>Start to develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p> <p>Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose.</p> <p>With growing confidence apply a range of finishing techniques, including those from art and design.</p>	<p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p> <p>Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose.</p> <p>Accurately apply a range of finishing techniques, including those from art and design.</p>

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	<p>Understand how to identify a target group for what they intend to design and make based on a design criteria.</p> <p>Begin to develop their ideas through talk and drawings.</p> <p>Make templates and mock ups of their ideas in card and paper or using ICT.</p>	<p>Understand how to identify a target group for what they intend to design and make based on a design criteria.</p> <p>Develop their ideas through talk and drawings and label parts.</p> <p>Make templates and mock ups of their ideas in card and paper or using ICT.</p>	<p>Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.</p> <p>Start to understand whether products can be recycled or reused.</p> <p>Know to make drawings with labels when designing.</p> <p>When planning explain their choice of materials and components including function and aesthetics.</p>	<p>Identify the strengths and areas for development in their ideas and products.</p> <p>When planning consider the views of others, including intended users, to improve their work.</p> <p>Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground -breaking products.</p> <p>When planning, explain their choice of materials and components according to function and aesthetic.</p>	<p>Draw up a specification for their design- link with Mathematics and Science.</p> <p>Use results of investigations, information sources, including ICT when developing design ideas.</p> <p>With growing confidence select appropriate materials, tools and techniques.</p> <p>Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose (e.g. bake sale, biscuit challenge).</p>	<p>Draw up a specification for their design- link with Mathematics and Science.</p> <p>Plan the order of their work, choosing appropriate materials, tools and techniques.</p> <p>Suggest alternative methods of making if the first attempts fail.</p> <p>Identify the strengths and areas for development in their ideas and products.</p> <p>Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.</p>

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<p>Make: Working with equipment, tools, materials and components to make quality products</p>	<p>Begin to make their design using appropriate techniques.</p> <p>Begin to build structures, exploring how they can be made stronger, stiffer and more stable.</p> <p>Explore using tools e.g. scissors and a hole punch safely.</p>	<p>Begin to select tools and materials; use correct vocabulary to name and describe them.</p> <p>Build structures, exploring how they can be made stronger, stiffer and more stable.</p> <p>With help, measure, cut and score with some accuracy.</p> <p>Learn to use hand tools safely and appropriately.</p> <p>Start to assemble, join and combine materials in order to make a product.</p>	<p>Select a wider range of tools and techniques for making their product i.e. construction materials and kits, textiles and food ingredients.</p> <p>Explain their choice of tools and equipment in relation to the skills and techniques they will be using.</p> <p>Measure, mark out, cut, score and assemble components with more accuracy.</p>	<p>Select a wider range of tools and techniques for making their product safely.</p> <p>Know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques.</p> <p>Start to join and combine materials and components accurately in temporary and permanent ways.</p>	<p>Select appropriate materials, tools and techniques e.g. cutting, shaping, joining and finishing, accurately.</p> <p>Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.</p> <p>With confidence pin, sew and stitch materials together to create a product.</p> <p>Understand how mechanical systems such as cams or pulleys or gears create movement.</p>	<p>Confidently select appropriate tools, materials, components and techniques and use them.</p> <p>Use tools safely and accurately.</p> <p>Assemble components to make working models.</p> <p>Aim to make and to achieve a quality product.</p> <p>Demonstrate when they make modifications as they go along.</p> <p>Construct products using permanent joining techniques.</p> <p>Understand how mechanical systems such as cams or pulleys or gears create movement.</p>

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	<p>Begin to assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape.</p> <p>Begin to use simple finishing techniques to improve the appearance of their product.</p>	<p>Demonstrate how to cut, shape and join fabric to make a simple product.</p> <p>Use basic sewing techniques.</p> <p>Start to choose and use appropriate finishing techniques based on own ideas.</p>	<p>Start to work safely and accurately with a range of simple tools.</p> <p>Start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work.</p>	<p>Understand how more complex electrical circuits and components can be used to create functional products.</p> <p>Begin to use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.</p>	<p>Begin to measure and mark out more accurately.</p> <p>Demonstrate how to use skills in using different tools and equipment safely and accurately with growing confidence cut and join with accuracy to ensure a good-quality finish to the product.</p> <p>Weigh and measure accurately (time, dry ingredients, liquids).</p> <p>Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.</p>	<p>Know how more complex electrical circuits and components can be used to create functional products.</p> <p>Know how to reinforce and strengthen a 3D framework.</p> <p>Understand that mechanical and electrical systems have an input, process and output.</p> <p>Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.</p>

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Evaluate: Evaluating processes and products	<p>Start to evaluate their product by discussing how well it works in relation to the purpose (design criteria).</p> <p>When looking at existing products explain what they like and dislike about products and why.</p> <p>Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make.</p>	<p>Evaluate their work against their design criteria.</p> <p>Look at a range of existing products explain what they like and dislike about products and why.</p> <p>Start to evaluate their products as they are developed, identifying strengths and possible changes they might make.</p> <p>With confidence talk about their ideas, saying what they like and dislike about them.</p>	<p>Start to evaluate their product against original design criteria e.g. how well it meets its intended purpose. Begin to disassemble and evaluate familiar products and consider the views of others to improve them.</p> <p>Begin to evaluate the key designs of individuals in design and technology and how it has helped shape the world.</p>	<p>Evaluate their products carrying out appropriate tests. Start to evaluate their work both during and at the end of the assignment.</p> <p>Be able to disassemble and evaluate familiar products and consider the views of others to improve them.</p> <p>Evaluate the key designs of individuals in design and technology and how it has helped shape the world.</p>	<p>Start to evaluate a product against the original design specification and by carrying out tests. Evaluate their work both during and at the end of the assignment.</p> <p>Begin to evaluate it personally and seek evaluation from others.</p> <p>Evaluate the key designs of individuals in design and technology and how it has helped shape the world and begin to make comparisons.</p>	<p>Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests.</p> <p>Evaluate their work both during and at the end of the assignment.</p> <p>Record their evaluations using drawings with labels.</p> <p>Evaluate against their original criteria and suggest ways that their product could be improved.</p> <p>Evaluate the key designs of individuals in design and technology and how it has helped shape the world over time.</p>

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Technical knowledge: Materials and Structures	<p>Know the simple working characteristics of materials and components.</p> <p>Know how freestanding structures can be made stronger, stiffer and more stable.</p>	<p>Know the simple working characteristics of materials and components.</p> <p>Know how freestanding structures can be made stronger, stiffer and more stable, giving reasons.</p>	<p>Know how to use learning from science to help design and make products that work.</p> <p>Know how to use learning from mathematics to help design and make products that work.</p> <p>Know that materials have both functional properties and aesthetic qualities.</p> <p>Know that materials can be combined and mixed to create more useful characteristics.</p> <p>Know how to make strong, stiff shell structures.</p>	<p>Know how to use learning from science to help design and make products that work.</p> <p>Know how to use learning from mathematics to help design and make products that work.</p> <p>Know that materials have both functional properties and aesthetic qualities.</p> <p>Know how to reinforce and strengthen a 3D framework.</p>	<p>Know how to use learning from science to help design and make products that work.</p> <p>Know how to use learning from mathematics to help design and make products that work.</p> <p>Know that materials have both functional properties and aesthetic qualities.</p> <p>Know that materials can be combined and mixed to create more useful characteristics.</p> <p>Know how to reinforce and strengthen a 3D framework.</p>	<p>Know how to use learning from science to help design and make products that work.</p> <p>Know how to use learning from science to help design and make products that work.</p> <p>Know how to use learning from mathematics to help design and make products that work.</p> <p>Know that materials have both functional properties and aesthetic qualities.</p> <p>Know that materials have both functional properties and aesthetic qualities.</p> <p>Know that materials can be combined and mixed to create more useful characteristics.</p>

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Technical knowledge: Mechanisms	Know the movement of simple mechanisms such as levers, sliders, wheels and axles.	Know the movement of simple mechanisms such as levers, sliders, wheels and axles, explaining the suitability for a product.		Know that mechanical and electrical systems have an input, process and output. Know how mechanical systems such as levers and linkages or pneumatic systems create movement.	Know how mechanical systems such as CAMs create movement.	Know how mechanical systems such as pulleys or gears create movement.
Technical knowledge: Textiles	Know that a 3-D textiles product can be assembled from two identical shapes of different materials.	Know that a 3-D textiles product can be assembled from two identical fabric shapes.			Know that a 3D textiles product can be made from a combination of fabric shapes.	
Technical knowledge: Food and Nutrition	Know that food ingredients should be combined according to their sensory characteristics.	Know that food ingredients should be combined according to their sensory characteristics and how this applies to the design criteria.	Know that ingredients can be combined and mixed to create more useful characteristics. Know that food ingredients can be fresh, pre-cooked and processed.	Know that a recipe can be adapted by adding or substituting one or more ingredients.	Know that a recipe can be adapted by adding or substituting one or more ingredients.	

DT Skills Progression

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Technical knowledge: Electrical systems				<p>Know how simple electrical circuits and components can be used to create functional products.</p> <p>Know how more complex electrical circuits and components can be used to create functional products.</p>	Know that mechanical and electrical systems have an input, process and output.	Know that mechanical and electrical systems have an input, process and output.
Technical knowledge: Vocabulary	Know the correct technical vocabulary for the projects they are undertaking.	Know the correct technical vocabulary for the projects they are undertaking.	Know the correct technical vocabulary for the projects they are undertaking.	Know the correct technical vocabulary for the projects they are undertaking	Know the correct technical vocabulary for the projects they are undertaking.	Know the correct technical vocabulary for the projects they are undertaking.

*N.B. Ensure that for each unit, children learn to research and evaluate the key designs of individuals in design and technology and how they have helped shape the world.