

Wardley CE Primary School: Design and Technology Curriculum Progression

Y1 Design and Technology Threshold Concepts				
Y1	Design and Technology Units	To Design, Make, Evaluate and Improve	To Master Practical Skills	To Take Inspiration
Y1	<p><b>Mechanisms</b> Slides &amp; Levers</p> <p><b>Structures</b> Freestanding structures</p> <p><b>Food</b> Preparing fruit and vegetables</p>	<ul style="list-style-type: none"> <li>• Design products that have a clear purpose and an intended user.</li> <li>• Make products, refining the design as work progresses.</li> <li>• Use software to design.</li> </ul>	<p><b>Food</b></p> <ul style="list-style-type: none"> <li>• Cut, peel or grate ingredients safely and hygienically.</li> <li>• Measure or weigh using measuring cups or electronic scales.</li> <li>• Assemble or cook ingredients.</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Cut materials safely using tools provided.</li> <li>• Measure and mark out to the nearest centimetre.</li> <li>• Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).</li> <li>• Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen).</li> </ul> <p><b>Textiles</b></p> <ul style="list-style-type: none"> <li>• Shape textiles using templates.</li> <li>• Join textiles using running stitch.</li> <li>• Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing).</li> </ul> <p><b>Electricals and electronics</b></p> <ul style="list-style-type: none"> <li>• Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage).</li> </ul> <p><b>Computing</b></p> <ul style="list-style-type: none"> <li>• Model designs using software.</li> </ul> <p><b>Construction</b></p> <ul style="list-style-type: none"> <li>• Use materials to practice drilling, screwing, gluing and nailing materials to make and strengthen products</li> </ul> <p><b>Mechanics</b></p> <ul style="list-style-type: none"> <li>• Create products using levers, wheels and winding mechanisms.</li> </ul>	<ul style="list-style-type: none"> <li>• Explore objects and designs to identify likes and dislikes of the designs.</li> <li>• Suggest improvements to existing designs.</li> <li>• Explore how products have been created.</li> </ul>

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Y2	Y2 Design and Technology Threshold Concepts			
Y2	Design and Technology Units	To Design, Make, Evaluate and Improve	To Master Practical Skills	To Take Inspiration
Y2	<p><b>Textiles</b> Templates &amp; Joining techniques</p> <p><b>Mechanisms</b> Wheels &amp; Axles</p> <p><b>Food</b> Preparing fruit and vegetables</p>	<ul style="list-style-type: none"> <li>• Design products that have a clear purpose and an intended user.</li> <li>• Make products, refining the design as work progresses.</li> <li>• Use software to design.</li> </ul>	<p><b>Food</b></p> <ul style="list-style-type: none"> <li>• Cut, peel or grate ingredients safely and hygienically.</li> <li>• Measure or weigh using measuring cups or electronic scales.</li> <li>• Assemble or cook ingredients.</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Cut materials safely using tools provided.</li> <li>• Measure and mark out to the nearest centimetre.</li> <li>• Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling).</li> <li>• Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen).</li> </ul> <p><b>Textiles</b></p> <ul style="list-style-type: none"> <li>• Shape textiles using templates.</li> <li>• Join textiles using running stitch.</li> <li>• Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing).</li> </ul> <p><b>Electricals and electronics</b></p> <ul style="list-style-type: none"> <li>• Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage).</li> </ul> <p><b>Computing</b></p> <ul style="list-style-type: none"> <li>• Model designs using software.</li> </ul> <p><b>Construction</b></p> <ul style="list-style-type: none"> <li>• Use materials to practice drilling, screwing, gluing and nailing materials to make and strengthen products</li> </ul> <p><b>Mechanics</b></p> <ul style="list-style-type: none"> <li>• Create products using levers, wheels and winding mechanisms.</li> </ul>	<ul style="list-style-type: none"> <li>• Explore objects and designs to identify likes and dislikes of the designs.</li> <li>• Suggest improvements to existing designs.</li> <li>• Explore how products have been created.</li> </ul>

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Y3 Design and Technology Threshold Concepts				
Y3	Design and Technology Units	To Design, Make, Evaluate and Improve	To Master Practical Skills	To Take Inspiration
Y3	<p><b>Structures</b> Shell structure</p> <p><b>Textiles</b> 2D shape to 3D product</p> <p><b>Food</b> Preparing fruit and vegetables</p>	<ul style="list-style-type: none"> <li>• Design with purpose by identifying opportunities to design.</li> <li>• Make products by working efficiently (such as by carefully selecting materials).</li> <li>• Refine work and techniques as work progresses, continually evaluating the product design.</li> <li>• Use software to design and represent product designs.</li> </ul>	<p><b>Food</b></p> <ul style="list-style-type: none"> <li>• Cut, peel or grate ingredients safely and hygienically.</li> <li>• Measure or weigh using measuring cups or electronic scales.</li> <li>• Assemble or cook ingredients.</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Cut materials accurately and safely by selecting appropriate tools.</li> <li>• Measure and mark out to the nearest millimetre.</li> <li>• Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs).</li> <li>• Select appropriate joining techniques.</li> </ul> <p><b>Textiles</b></p> <ul style="list-style-type: none"> <li>• Understand the need for a seam allowance.</li> <li>• Join textiles with appropriate stitching.</li> <li>• Select the most appropriate techniques to decorate textiles.</li> </ul> <p><b>Electricals and electronics</b></p> <ul style="list-style-type: none"> <li>• Create series and parallel circuits</li> </ul> <p><b>Computing</b></p> <ul style="list-style-type: none"> <li>• Control and monitor models using software designed for this purpose.</li> </ul> <p><b>Construction</b></p> <ul style="list-style-type: none"> <li>• Choose suitable techniques to construct products or to repair items.</li> <li>• Strengthen materials using suitable techniques.</li> </ul> <p><b>Mechanics</b></p> <ul style="list-style-type: none"> <li>• Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).</li> </ul>	<ul style="list-style-type: none"> <li>• Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs.</li> <li>• Improve upon existing designs, giving reasons for choices.</li> <li>• Disassemble products to understand how they work.</li> </ul>

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Y4 Design and Technology Threshold Concepts				
Y4	Design and Technology Units	To Design, Make, Evaluate and Improve	To Master Practical Skills	To Take Inspiration
Y4	<p><b>Mechanical Systems</b> Levers &amp; linkages</p> <p><b>Electrical Systems</b> Simple circuits &amp; switches</p> <p><b>Food</b> Preparing fruit and vegetables</p>	<ul style="list-style-type: none"> <li>• Design with purpose by identifying opportunities to design.</li> <li>• Make products by working efficiently (such as by carefully selecting materials).</li> <li>• Refine work and techniques as work progresses, continually evaluating the product design.</li> <li>• Use software to design and represent product designs.</li> </ul>	<p><b>Food</b></p> <ul style="list-style-type: none"> <li>• Cut, peel or grate ingredients safely and hygienically.</li> <li>• Measure or weigh using measuring cups or electronic scales.</li> <li>• Assemble or cook ingredients.</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Cut materials accurately and safely by selecting appropriate tools.</li> <li>• Measure and mark out to the nearest millimetre.</li> <li>• Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs).</li> <li>• Select appropriate joining techniques.</li> </ul> <p><b>Textiles</b></p> <ul style="list-style-type: none"> <li>• Understand the need for a seam allowance.</li> <li>• Join textiles with appropriate stitching.</li> <li>• Select the most appropriate techniques to decorate textiles.</li> </ul> <p><b>Electricals and electronics</b></p> <ul style="list-style-type: none"> <li>• Create series and parallel circuits</li> </ul> <p><b>Computing</b></p> <ul style="list-style-type: none"> <li>• Control and monitor models using software designed for this purpose.</li> </ul> <p><b>Construction</b></p> <ul style="list-style-type: none"> <li>• Choose suitable techniques to construct products or to repair items.</li> <li>• Strengthen materials using suitable techniques.</li> </ul> <p><b>Mechanics</b></p> <ul style="list-style-type: none"> <li>• Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears).</li> </ul>	<ul style="list-style-type: none"> <li>• Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs.</li> <li>• Improve upon existing designs, giving reasons for choices.</li> <li>• Disassemble products to understand how they work.</li> </ul>

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Y5 Design and Technology Threshold Concepts				
Y5	Design and Technology Units	To Design, Make, Evaluate and Improve	To Master Practical Skills	To Take Inspiration
Y5	<p><b>Food</b> Preparing fruit and vegetables</p> <p><b>Mechanical Systems</b> Pulleys or gears</p> <p><b>Structures</b> Frame structures</p>	<ul style="list-style-type: none"> <li>• Design with the user in mind, motivated by the service a product will offer (rather than simply for profit).</li> <li>• Make products through stages of prototypes, making continual refinements.</li> <li>• Ensure products have a high quality finish, using art skills where appropriate.</li> <li>• Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.</li> </ul>	<p><b>Food</b></p> <ul style="list-style-type: none"> <li>• Prepare ingredients hygienically using appropriate utensils.</li> <li>• Measure ingredients to the nearest gram accurately.</li> <li>• Follow a recipe.</li> <li>• Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• 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).</li> <li>• 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).</li> </ul> <p><b>Textiles</b></p> <ul style="list-style-type: none"> <li>• Create objects (such as a cushion) that employ a seam allowance.</li> <li>• Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration).</li> <li>• 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).</li> </ul> <p><b>Electricals and electronics</b></p> <ul style="list-style-type: none"> <li>• Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).</li> </ul> <p><b>Computing</b></p> <ul style="list-style-type: none"> <li>• Write code to control and monitor models or products.</li> </ul> <p><b>Construction</b></p> <ul style="list-style-type: none"> <li>• Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding).</li> </ul> <p><b>Mechanics</b></p> <ul style="list-style-type: none"> <li>• Convert rotary motion to linear using cams.</li> <li>• Use innovative combinations of electronics (or computing) and mechanics in product designs.</li> </ul>	<ul style="list-style-type: none"> <li>• Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.</li> <li>• Create innovative designs that improve upon existing products.</li> <li>• Evaluate the design of products so as to suggest improvements to the user experience.</li> </ul>

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Y6 Design and Technology Threshold Concepts				
Y6	Design and Technology Units	To Design, Make, Evaluate and Improve	To Master Practical Skills	To Take Inspiration
Y6	<p><b>Textiles</b> Combining different fabric shapes</p> <p><b>Electrical Systems</b> More complex switches &amp; circuits</p> <p><b>Food</b> Preparing fruit and vegetables</p>	<ul style="list-style-type: none"> <li>• Design with the user in mind, motivated by the service a product will offer (rather than simply for profit).</li> <li>• Make products through stages of prototypes, making continual refinements.</li> <li>• Ensure products have a high quality finish, using art skills where appropriate.</li> <li>• Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.</li> </ul>	<p><b>Food</b></p> <ul style="list-style-type: none"> <li>• Prepare ingredients hygienically using appropriate utensils.</li> <li>• Measure ingredients to the nearest gram accurately.</li> <li>• Follow a recipe.</li> <li>• Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking).</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• 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).</li> <li>• 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).</li> </ul> <p><b>Textiles</b></p> <ul style="list-style-type: none"> <li>• Create objects (such as a cushion) that employ a seam allowance.</li> <li>• Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration).</li> <li>• 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).</li> </ul> <p><b>Electricals and electronics</b></p> <ul style="list-style-type: none"> <li>• Create circuits using electronics kits that employ a number of components (such as LEDs, resistors, transistors and chips).</li> </ul> <p><b>Computing</b></p> <ul style="list-style-type: none"> <li>• Write code to control and monitor models or products.</li> </ul> <p><b>Construction</b></p> <ul style="list-style-type: none"> <li>• Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filling and sanding).</li> </ul> <p><b>Mechanics</b></p> <ul style="list-style-type: none"> <li>• Convert rotary motion to linear using cams.</li> <li>• Use innovative combinations of electronics (or computing) and mechanics in product designs.</li> </ul>	<ul style="list-style-type: none"> <li>• Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices.</li> <li>• Create innovative designs that improve upon existing products.</li> <li>• Evaluate the design of products so as to suggest improvements to the user experience.</li> </ul>

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