

**Skills and Knowledge Progression – Design and Technology**

<b>Year R</b>			
<b>Skills</b>	<p align="center"><b>Design</b></p> <p>Use what they have learnt about media and materials in original ways, thinking about uses and purposes. Represent their own ideas, thoughts and feelings through design and technology.</p>	<p align="center"><b>Make</b></p> <p>Show good co-ordination in large and small movements. Handle equipment and tools effectively. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Begin to cut, shape and join fabrics using simple techniques, including simple flaps and hinges. Experience use of constructions kits building towers, walls and frameworks. Assemble vehicles using constructions kits and explore vehicles through play.</p>	<p align="center"><b>Evaluate</b></p> <p>Express themselves effectively. Develop their own narratives and explanations by connecting ideas or events. Gain some experience of designing, making and evaluating products for a specified user and purpose.</p>
<b>Knowledge</b>	<p>How to use and transport a range of materials and tools safely. A range of age-appropriate construction materials/ toys and build with them effectively.</p>		
<b>Opportunities for spirituality Global and neighbours*</b>	<p>Christmas cards and gift making Diva lamps Cooking – time for reflection and sensory/spiritual moments</p>		
<b>Year 1 and 2</b>			
<b>Yr 1 Skills</b>	<p align="center"><b>Design</b></p> <p>Work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment. State what products they are designing and making. Say whether their products are for themselves or others. Design a functional and appealing product for a chosen user and purpose based on simple design criteria. Generate ideas by drawing on their own experiences. Develop and communicate ideas by talking and drawing, explaining what they could make and creating templates, mock-ups with card and paper.</p>	<p align="center"><b>Make</b></p> <p>Plan by suggesting what to do next. With support, select from a range of tools and equipment, explaining their choices. With support, select from a range of materials and components according to their characteristics. Follow procedures for safety and hygiene. Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components. With support, measure, mark out, cut and shape materials and components. With support, assemble, join and combine materials and components when needed allow for movement and finishing. Use finishing techniques, including those from art and design.</p>	<p align="center"><b>Evaluate</b></p> <p>Talk about their design ideas and what they are making. Make simple judgements about their products and ideas against design criteria. Explore and evaluate a range of existing textile products relevant to the project being undertaken. Explore a range of existing books and everyday products that use simple sliders and levers. Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings. Begin to suggest how their products could be improved. Begin to evaluate a range of existing products considering: *what products are, *who products are for, *what products are for,</p>

			<p>*how products are used,          *where products might be used,          *what materials products are made from.          When evaluating their own product consider whether it meets design criteria.</p>	
<b>Yr 2 Skills</b>	<p><b>Design</b>            Work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment.            State what products they are designing and making. Say whether their products are for themselves or others.            Design a functional and appealing product for a chosen user and purpose based on simple design criteria.            Generate ideas by drawing on their own experiences.            Develop and communicate ideas by talking and drawing, explaining what they could make and creating templates, mock-ups with card and paper.            When appropriate using information and communication technology.</p>	<p><b>Make</b>            Plan by suggesting what to do next.            Select from a range of tools and equipment, explaining their choices.            Select from a range of materials and components according to their characteristics.            Follow procedures for safety and hygiene.            Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components.            Begin to independently measure, mark out, cut and shape materials and components.            Assemble, join and combine materials and components when needed allow for movement and finishing.            Use finishing techniques, including those from art and design.</p>	<p><b>Evaluate</b>            Talk about their design ideas and what they are making.            Make simple judgements about their products and ideas against design criteria.            Explore and evaluate a range of existing textile products relevant to the project being undertaken.            Explore a range of existing books and everyday products that use simple sliders and levers.            Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings.            Suggest how their products could be improved.            Evaluate a range of existing products considering:            *what products are,            *who products are for,            *what products are for,            *how products are used,            *where products might be used,            *what materials products are made from.            When evaluating their own product consider whether it meets design criteria.</p>	
<b>Knowledge</b>	<p><b>Textiles</b>            How simple 3-D textile products are made, using a template to create two identical shapes.            How to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.            Different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.            Know and use technical vocabulary relevant to the project.</p>	<p><b>Cooking</b>            That food has to be farmed, grown elsewhere (e.g. home) or caught.            Name and sort foods into the five groups.            That everyone should eat at least five portions of fruit and vegetables every day.            How to use techniques such as cutting, peeling and grating.            That food ingredients should be combined according to their sensory characteristics.            Know and use technical and sensory vocabulary relevant to the project.</p>	<p><b>Mechanical</b>            How sliders and levers work.            That different mechanisms produce different types of movement.            How to use wheels, axles and axle holders.            The difference between fixed and freely moving axles.            Know and use technical vocabulary relevant to the project.</p>	<p><b>Structures</b>            How to make freestanding structures stronger, stiffer and more stable.            Know and use technical vocabulary relevant to the project.</p>

<b>Opportunities for spirituality Global and neighbours*</b>	Christmas card and gift making Cooking – time for reflection and sensory/spiritual moments - consider mindful eating Rockets – vastness of space Windmills – wider world Aprons – Florence Nightingale, Mary Seacole – ambassadors for change
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**Year 3 and 4**

	<p align="center"><b>Design</b></p>	<p align="center"><b>Make</b></p>	<p align="center"><b>Evaluate</b></p>
<b>Yr 3 Skills</b>	<p>Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment.</p> <p>Describe the purpose of their products.</p> <p>Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific groups or individuals.</p> <p>Indicate the design features of their products that will appeal to intended users, beginning to focus on the wants and needs of the user.</p> <p>Begin to model their ideas using prototypes and pattern pieces.</p> <p>Begin to use annotated sketches, cross-sectional drawings, exploded diagrams and final product sketches to develop and communicate their ideas.</p>	<p>With support, plan the main stages of making.</p> <p>Select tools and equipment suitable for the task.</p> <p>Select materials and components suitable for the task, including fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.</p> <p>Follow procedures for safety and hygiene.</p> <p>Use a wide range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components.</p> <p>Begin to measure, mark out, cut and shape materials and components with some accuracy.</p> <p>Begin to assemble, join and combine materials and components with some accuracy.</p> <p>Apply a range of finishing techniques (suitable for the product they are creating), including those from art and design.</p> <p>Explain their choice of materials according to functional properties and aesthetic qualities.</p>	<p>Investigate a range of products relevant to the project.</p> <p>Test their product against the original design criteria and with the intended user.</p> <p>Identify the strengths and areas for development in their ideas and products.</p> <p>Consider the views of others, including intended users, to improve their work.</p> <p>Understand how a key event/individual has influenced the development of the chosen product and/or fabric.</p> <p>With support, evaluate their own products and ideas against criteria and user needs, as they design and make, as well as using their design criteria to evaluate their completed products.</p> <p>Begin to evaluate existing products considering:</p> <ul style="list-style-type: none"> <li>*how well products have been designed,</li> <li>*how well products have been made,</li> <li>*why materials have been chosen,</li> <li>*what methods of construction have been used,</li> <li>*how well products work,</li> <li>*how well products achieve their purposes,</li> <li>*how well products meet user needs and wants,</li> <li>*who designed and made the products,</li> <li>*where products were designed and made,</li> <li>*when products were designed and made,</li> <li>*whether products can be recycled or reused.</li> </ul>
<b>Yr 4 Skills</b>	<p align="center"><b>Design</b></p> <p>Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment.</p> <p>Describe the purpose of their products.</p> <p>Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific groups or individual</p>	<p align="center"><b>Make</b></p> <p>Plan the main stages of making.</p> <p>Select tools and equipment suitable for the task.</p> <p>Select materials and components suitable for the task, including fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.</p> <p>Explain their choice of tools and equipment in</p>	<p align="center"><b>Evaluate</b></p> <p>Identify the strengths and areas for development in their ideas and products.</p> <p>Investigate a range of products relevant to the project.</p> <p>Test their product against the original design criteria and with the intended user.</p> <p>Consider the views of others, including intended</p>

	<p>Indicate the design features of their products that will appeal to intended users, focusing on the wants and needs of the user.</p> <p>Model their ideas using prototypes and pattern pieces.</p> <p>Use annotated sketches, cross-sectional drawings, exploded diagrams and final product sketches to develop and communicate their ideas.</p> <p>Generate realistic ideas, focusing on the needs of the user.</p> <p>Make design decisions that take account of the availability of resources.</p>	<p>relation to the skills and techniques they will be using.</p> <p>Explain their choice of materials and components according to functional properties and aesthetic qualities.</p> <p>Order the main stages of making.</p> <p>Follow procedures for safety and hygiene.</p> <p>Use a wide range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components.</p> <p>Measure, mark out, cut and shape materials and components with some accuracy.</p> <p>Assemble, join and combine materials and components with some accuracy.</p> <p>Refer to their design criteria as they design and make.</p> <p>Apply a range of finishing techniques, including those from art and design, with some accuracy.</p>	<p>users, to improve their work.</p> <p>Use their design criteria to evaluate their completed products.</p> <p>Understand how a key event/individual has influenced the development of the chosen product and/or fabric</p> <p>With support evaluate their own products and ideas against criteria and user needs, as they design and make.</p> <p>As well as using their design criteria to evaluate their completed products.</p> <p>Evaluate existing products considering:</p> <ul style="list-style-type: none"> <li>*how well products have been designed,</li> <li>*how well products have been made,</li> <li>*why materials have been chosen,</li> <li>*what methods of construction have been used,</li> <li>*how well products work,</li> <li>*how well products achieve their purposes,</li> <li>*how well products meet user needs and wants,</li> <li>*who designed and made the products,</li> <li>*where products were designed and made,</li> <li>*when products were designed and made,</li> <li>*whether products can be recycled or reused.</li> </ul>	
<p><b>Knowledge</b></p>	<p style="text-align: center;"><b>Textiles</b></p> <p>How to strengthen, stiffen and reinforce existing fabrics.</p> <p>How to securely join two pieces of fabric together.</p> <p>The need for patterns and seam allowances.</p> <p>Know and use technical vocabulary relevant to the project.</p>	<p style="text-align: center;"><b>Cooking</b></p> <p>That food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK.</p> <p>How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>That a healthy diet is made up from a variety and balance of different foods and drinks.</p> <p>That to be active and healthy, food is needed to provide energy for the body.</p> <p>Know and use relevant technical and sensory vocabulary appropriately.</p>	<p style="text-align: center;"><b>Mechanical/Electrical</b></p> <p>Understand and use lever and linkage mechanisms.</p> <p>Understand and use pneumatic systems to create movement.</p> <p>Know the difference between fixed and loose pivots.</p> <p>How to use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.</p> <p>How to use computer programs to control their products.</p> <p>That mechanical and electrical systems have an input, process and output.</p> <p>Know and use technical vocabulary relevant to the project.</p>	<p style="text-align: center;"><b>Structures</b></p> <p>How to construct strong, stiff shell structures.</p> <p>How to construct nets of cubes and cuboids and, where appropriate, more complex 3D shapes.</p> <p>Know and use technical vocabulary relevant to the project.</p>

<b>Opportunities for spirituality Global and neighbours*</b>	Christmas card and gift making Cooking – time for reflection and sensory/spiritual moments European tapestry – global neighbours awareness of other cultures Mexican dish – global neighbours awareness of other cultures Textiles – peace dove Brave day
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**Year 5 and 6**

	<p align="center"><b>Design</b></p>	<p align="center"><b>Make</b></p>	<p align="center"><b>Evaluate</b></p>
<b>Yr 5 Skills</b>	<p>Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment.            Describe the purpose of their products.            Begin to carry out research, using surveys, interviews, questionnaires and web-based resources.            Begin to identify the needs, wants, preferences and values of particular individuals and groups.            Share and clarify ideas through discussion.            Use annotated sketches, templates, mock-ups and prototypes, cross-sectional drawings and exploded diagrams to develop and communicate their ideas and, where appropriate, computer-aided design.            This should include pictorial representations of electrical circuits or circuit diagrams.            Develop a simple design specification to guide their thinking.            Use research to develop a design specification for a functional product that responds automatically to changes in the environment.            Take account of constraints including time, resources and cost.</p>	<p>Select tools and equipment suitable for the task.            Explain their choice of tools and equipment in relation to the skills and techniques they will be using.            Select materials and components suitable for the task.            Produce appropriate lists of tools, equipment and materials that they need.            Formulate step-by-step plans as a guide to making and, if appropriate, allocate tasks within a team.            Follow procedures for safety and hygiene.            Use a wide range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components.            Accurately measure, mark out, cut and shape materials and components.            Accurately assemble, join and combine materials and components.            Accurately apply a range of finishing techniques, including those from art and design.            Work within the constraints of time, resources and cost.            Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment.</p>	<p>Begin to investigate famous manufacturing and engineering companies, individuals including famous inventors.            Identify the strengths and areas for development in their ideas and products.            Consider the views of others, including intended users, to improve their work.            Begin to critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make.            Begin to evaluate their ideas and products against their original design specification.            Investigate and analyse existing products considering:            *how well products have been designed,            *how well products have been made,            *why materials have been chosen,            *what methods of construction have been used,            *how well products work,            *how well products achieve their purposes,            *how well products meet user needs and wants,            *how much products cost to make,            *how innovative products are,            *how sustainable the materials in products are            *what impact products have beyond their intended purpose.</p>
<b>Yr 6 Skills</b>	<p align="center"><b>Design</b></p> <p>Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment.            Indicate the design features of their products that will appeal to intended users.</p>	<p align="center"><b>Make</b></p> <p>Select tools and equipment suitable for the task.            Explain their choice of tools and equipment in relation to the skills and techniques they will be using.            Explain their choice of materials and components</p>	<p align="center"><b>Evaluate</b></p> <p>Begin to investigate famous manufacturing and engineering companies, individuals including famous inventors.            Identify the strengths and areas for development in their ideas and products.</p>

	<p>Explain how particular parts of their products work. Carry out research, using surveys, interviews, questionnaires and web-based resources. Identify the needs, wants, preferences and values of particular individuals and groups. Develop a simple design specification to guide their thinking. Use annotated sketches, templates, mock-ups and prototypes, cross-sectional drawings and exploded diagrams to develop and communicate their ideas and, where appropriate, computer-aided design. This should include pictorial representations of electrical circuits or circuit diagrams. Model their ideas using prototypes and pattern pieces. Generate innovative ideas, drawing on research. Make design decisions, taking account of constraints such as time, resources and cost.</p>	<p>according to functional properties and aesthetic qualities. Produce appropriate lists of tools, equipment and materials that they need. Formulate step-by-step plans as a guide to making. Follow procedures for safety and hygiene. Use a wide range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. Accurately measure, mark out, cut and shape materials and components. Accurately assemble, join and combine materials and components. Accurately apply a range of finishing techniques, including those from art and design. Use techniques that involve a number of steps. Demonstrate resourcefulness when tackling practical problems. Work within the constraints of time, resources and cost. Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment.</p>	<p>Consider the views of others, including intended users, to improve their work. Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make. Evaluate their ideas and products against their original design specification. Test the system to demonstrate its effectiveness for the intended user and purpose. Continually evaluate and modify Investigate and analyse existing products considering:  *how well products have been designed,  *how well products have been made,  *why materials have been chosen,  *what methods of construction have been used,  *how well products work,  *how well products achieve their purposes,  *how well products meet user needs and wants,  *how much products cost to make,  *how innovative products are,  *how sustainable the materials in products are  *what impact products have beyond their intended purpose.</p>	
<p><b>Knowledge</b></p>	<p><b>Textiles</b>  A 3D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics. Fabrics can be strengthened, stiffened and reinforced where appropriate.</p>	<p><b>Cooking</b>  That food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. Seasons may affect the food available and give examples. That food is processed into ingredients that can be eaten or used in cooking. How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. How to adapted recipes to change the</p>	<p><b>Mechanical</b>  That mechanical and electrical systems have an input, process and an output. How to use mechanical systems such as cams or pulleys or gears to create movement. How gears and pulleys can be used to speed up, slow down or change the direction of movement. How to use electrical systems in their products. How to use computer programs to program, monitor and control their products. Know and use technical vocabulary</p>	<p><b>Structures</b>  How to strengthen, stiffen and reinforce 3D frameworks. Know and use technical vocabulary relevant to the project.</p>

		appearance, taste, texture and aroma. That different foods contain different substances - nutrients, water and fibre - that are needed for health. Know and use relevant technical and sensory vocabulary.	relevant to the project.	
<b>Opportunities for spirituality Global and neighbours*</b>	Christmas card and gift making Cooking – time for reflection and sensory/spiritual moments European tapestry - global neighbours awareness of other cultures Mexican dish- global neighbours awareness of other cultures Textiles – peace dove Brave day			

\*including but not limited to.