

Design Technology Progression Document



	Reception (ELG)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Key events and individuals	<p>OVERVIEW: Children design and make products for a purpose and user using a variety of materials and engage in imaginative role-play where they create and use indoor and outdoor environments based n the designed and made world.</p> <p>Being imaginative – To create simple representations of events, people and objects. To choose particular colours to use for a purpose.</p> <p>Being imaginative – To use what they have learnt about media and materials in original ways, thinking about uses and purposes.</p>				<p>Across KS2 pupils should learn about:</p> <ul style="list-style-type: none"> Inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. (Dyson, Brunel, Gates, Heston Blumenthal - choose people that will interest your class). 		
<p>DESIGNING</p> <p>Design Understanding contexts, users and purposes.</p>		<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> Work confidently within a range of contexts, such as imaginary, story-based, home, schools, gardens, local community, industry and the wider environment. State what products they are designing and making. Say whether their products are for themselves or other users. Describe what their products are for. Say how they will work. Say how they will make their products suitable for their intended users. Use simple design criteria to help develop their ideas. 	<p>Across KS2 pupils should:</p> <ul style="list-style-type: none"> 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. Indicate the design features of their products that will appeal to intended users. Explain how particular parts of their products work. 		<p>In LKS2 pupils should also:</p> <ul style="list-style-type: none"> Gather information about the needs and wants of particular individuals and groups. Develop their own design criteria and use these to inform their ideas. 	<p>In UKS2 pupils should also:</p> <ul style="list-style-type: none"> 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. 	
Assessment Criteria	<p>Encourage children to think about: What their product is for? Who is their product for?</p>	<p>By the end of Year 2 most children should: Use simple design criteria; state what their products are, who and what they are for and how they will work.</p>	<p>By the end of Year 4 most children should: Gather information about user needs; develop their own design criteria; describe the user, purpose and design features of their products and explain how they will work.</p>	<p>By the end of Year 6 most children should: Carry out research; develop a simple design specification; describe the user, purpose and design features of their products and explain how they will work.</p>			
Generating, developing, modelling and communicating ideas.	<p>Exploring and using media and materials – To explore what happens when they mix colour. To experiment to create different textures. To understand that media can be combined to create new effects. To manipulate materials to achieve a planned effect.</p> <p>Being imaginative - They represent their own ideas, thoughts and feelings</p>	<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> Generate ideas by drawing on their own experiences. Use knowledge of existing products to help come up with ideas. Develop and communicate ideas by talking and drawing. Model ideas by exploring materials, components and construction kits and by making templates and mock-ups. Use information and communication technology, where appropriate, to develop and communicate their ideas. 		<p>Across KS2 pupils should:</p> <ul style="list-style-type: none"> Share and clarify ideas through discussion. Model their ideas using prototypes and pattern pieces. Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. Use computer-aided design to develop and communicate their ideas. 		<p>In LKS2 pupils should also:</p> <ul style="list-style-type: none"> Generate realistic ideas, focusing on the needs of the user. Make design decisions that take account of the availability of resources. 	<p>In UKS2 pupils should also:</p> <ul style="list-style-type: none"> Generate innovative ideas, drawing on research. Make design decisions, taking account of constraints such as time, resources and cost.

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<p>Assessment Criteria</p>	<p>through design and technology, art, music, dance, role play and stories.</p> <p>Designing can be retrospective by drawing what they have made.</p>	<p>By the end of Year 2 most children should: Generate ideas using their own experiences and existing products; use talk, drawing, templates, mock-ups and where appropriate computers.</p>	<p>By the end of Year 4 most children should: Generate realistic ideas based on user needs; use a range of drawing skills, discussion, prototypes, pattern pieces and computer-aided design.</p>	<p>By the end of Year 6 most children should: Generate innovative ideas drawing on research; use a range of drawing skills, discussion, prototypes, pattern pieces and computer-aided design.</p>
<p><u>MAKING</u></p> <p>Planning</p>	<p>Exploring and using media and materials- To construct with a purpose in mind, using a variety of resources. To use simple tools and techniques competently and appropriately. To select appropriate resources to adapt their work where necessary. To select tools and techniques needed to shape, assemble and join materials they are using.</p> <p>Moving and Handling – To use simple tools to effect changes in materials. To handle tools, objects, construction and malleable materials safely and with increasing control.</p>	<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> 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. 	<p>Across KS2 pupils should:</p> <ul style="list-style-type: none"> 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. Explain their choice of materials and components according to functional properties and aesthetic qualities. 	
<p>Assessment Criteria</p>	<p>Health and Self-Care – Show the understanding of the need for safety when tackling new challenges and consider and manage some risks. Show understanding of how to transport and store equipment safely. To practice appropriate safety measure without direct supervision.</p>	<p>By the end of Year 2 most children should: Plan by suggesting what to do next; select from a range of tools, equipment, materials and components.</p>	<p>By the end of Year 4 most children should: Order the main stages of making; select suitable tools, equipment, materials and components and explain their choice.</p>	<p>By the end of Year 6 most children should: Formulate lists of resources and step-by-step plans; select suitable tools, equipment, materials and components and explain their choices.</p>
<p>Practical skills and techniques.</p>	<p>Moving and Handling – To handle equipment and tools effectively, including pencils for writing.</p> <p>Expressive Arts and Design Exploring and using media and materials – To safely</p>	<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> Follow procedures for safety and hygiene. Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components. Measure, mark out, cut and shape materials and components. Assemble, join and combine materials and components. Use finishing techniques, including those from art and design. 	<p>Across KS2 pupils should:</p> <ul style="list-style-type: none"> Follow procedures for safety and hygiene. Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. 	
		<p>In early KS2 pupils should also:</p> <ul style="list-style-type: none"> Measure, mark out, cut and shape materials and components with some accuracy. Assemble, join and combine materials and components with some accuracy. Apply a range of finishing techniques, including those from art and design, with some accuracy. 		<p>In late KS2 pupils should also:</p> <ul style="list-style-type: none"> 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.

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<p>Assessment Criteria</p>	<p>use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>Opportunities to create products that have to work in some way in order to be successful.</p>	<p>By the end of Year 2 most children should: Follow procedures for safety and hygiene; measure, mark out, cut, shape, assemble, join, combine and finish a range of materials and components.</p>	<p>By the end of Year 4 most children should: Follow procedures for safety and hygiene; use a wider range of materials and components; measure, mark out, cut, shape, assemble, join, combine and finish with some accuracy.</p>	<p>By the end of Year 6 most children should: Follow procedures for safety and hygiene; use a wider range of materials and components; measure, mark out, cut, shape, assemble, join, combine and finish with accuracy.</p>
<p><u>EVALUATING</u></p> <p>Own ideas and products.</p>	<p>Think about the appearance, finish and texture of the product.</p> <p>Use senses to explore and evaluate characteristics of products.</p>	<p>Across KS1 pupils should:</p> <ul style="list-style-type: none"> • Talk about their design ideas and what they are making. • Make simple judgements about their products and ideas against design criteria. • Suggest how their products could be improved. 	<p>Across KS2 pupils should:</p> <ul style="list-style-type: none"> • Identify the strengths and areas for development in their ideas and products. • Consider the views of others, including intended users, to improve their work. <p>In LKS2 pupils should also:</p> <ul style="list-style-type: none"> • Refer to their design criteria as they design and make. • Use their design criteria to evaluate their completed products. 	<p>In UKS2 pupils should also:</p> <ul style="list-style-type: none"> • 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.
<p>Assessment Criteria</p>		<p>By the end of Year 2 most children should: Make simple judgements about their products and ideas against design criteria.</p>	<p>By the end of Year 4 most children should: Evaluate their ideas and products against their design criteria.</p>	<p>By the end of Year 6 most children should: Identify strengths and areas to develop in their ideas and products against their design specification; consider the views of others to make improvements.</p>
<p>Existing products.</p>	<p>Technology - Shows interest in technological toys with knobs or pulleys, or real objects such as cameras and mobile phones. Shows skills in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.</p> <p>Technology - Children recognise that a range of technology is used in places such as the home and schools. They select and use technology for particular purposes.</p>	<p>Across KS1 pupils should explore:</p> <ul style="list-style-type: none"> • What products are. • Who products are for. • What products are for. • How products work. • How products are used. • Where products might be used. • What materials products are made from. • What they like and dislike about products. 	<p>Across KS2 pupils should investigate and analyse:</p> <ul style="list-style-type: none"> • 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. <p>In LKS2 pupils should also investigate and analyse:</p> <ul style="list-style-type: none"> • Who designed and made the products? • Where products were designed and made. • When products were designed and made. • Whether products can be recycled or reused. 	<p>In UKS2 pupils should also investigate and analyse:</p> <ul style="list-style-type: none"> • 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.

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Assessment Criteria		By the end of Year 2 most children should: Explore who and what products are for, how they work and are used, what materials they are made from and what they like and dislike about them.	By the end of Year 4 most children should: Investigate how well products have been made, whether they are fit for purpose and meet user needs; why materials have been chosen, the methods of construction used and how well they work.	By the end of Year 6 most children should: Investigate how well products have been designed and made, whether they are fit for purpose and meet user needs; why materials have been chosen, the methods of construction used, how well they work, and how innovative and sustainable they are.			
Key events and individuals.		Across KS1 pupils should know: <ul style="list-style-type: none"> N/A 	Across KS2 pupils should know: <ul style="list-style-type: none"> About inventors, designers, engineers, chefs, and manufacturers who have developed ground-breaking products. (Dyson, Brunel, Gates, Heston Blumenthal) 				
Assessment Criteria		By the end of Year 2 most children should: N/A	By the end of Year 4 most children should: Know about inventors, designers, engineers, chefs, manufacturers who have developed ground-breaking products.	By the end of Year 6 most children should: Know about inventors, designers, engineers, chefs, manufacturers who have developed ground-breaking products.			
<u>TECHNICAL KNOWLEDGE</u> Making products work.	That products can have a function and have to work in some way to be successful (wall strong enough for humpty dumpty to sit on)	Across KS1 pupils should know: <ul style="list-style-type: none"> About the simple working characteristics of materials and components. The correct vocabulary for the projects they are undertaking. 		Across KS2 pupils should know: <ul style="list-style-type: none"> How to use learning from science to help design and make products that work. How to use learning from mathematics to help design and make products that work. That materials have both functional properties and aesthetic qualities. That materials can be combined and mixed to create more useful characteristics. That mechanical and electrical systems have an input, process and output. The correct technical vocabulary for the projects they are undertaking. 			
Mechanism	Play and explore construction kits with moving parts such as wheels, levers and hinges.	<ul style="list-style-type: none"> Movements of simple mechanisms such as levers, sliders, wheels and axles. 	<ul style="list-style-type: none"> Movements of simple mechanisms such as levers, sliders, wheels and axles. 	<ul style="list-style-type: none"> How mechanical systems such as levers and linkages or pneumatic systems create movement. 		<ul style="list-style-type: none"> How mechanical systems such as cams or pulleys or gears create movement. 	<ul style="list-style-type: none"> How mechanical systems such as cams or pulleys or gears create movement.
Structures	Play and explore a range of large and small construction kits that use different forms of joining. How can they stop structures falling over and make them stronger.	<ul style="list-style-type: none"> How freestanding structures can be made stronger, stiffer and more stable. 	<ul style="list-style-type: none"> How freestanding structures can be made stronger, stiffer and more stable. 	<ul style="list-style-type: none"> How to make strong, stiff shell structures. 		<ul style="list-style-type: none"> How to reinforce and strengthen a 3D framework. 	
Textiles	Use senses to explore and evaluate materials, fabrics and components.	<ul style="list-style-type: none"> That a 3-D textiles product can be assembled from two identical fabric shapes. 	<ul style="list-style-type: none"> That a 3-D textiles product can be assembled from two identical fabric shapes. 				<ul style="list-style-type: none"> That a 3D textiles product can be made from a combination of fabric shapes.

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<p>Electrical circuits</p>				<ul style="list-style-type: none"> • How simple electrical circuits and components can be used to create functional products. 	<ul style="list-style-type: none"> • How simple electrical circuits and components can be used to create functional products. 		<ul style="list-style-type: none"> • How more complex electrical circuits and components can be used to create functional products. 		
<p>Using computer technology</p>	<p>Begin to use computing technology.</p>			<ul style="list-style-type: none"> • How to programme a computer to control their products. <p>LKS2 – Must be included in at least one project across the phase.</p>	<ul style="list-style-type: none"> • How to program a computer to monitor changes in the environment and control their products. <p>UKS2 – Must be included in at least one project across the phase.</p>	<p>Assessment Criteria</p>	<p>By the end of Year 2 most children should: Know about the simple working characteristics of materials and components, the movement of simple mechanisms, how free-standing structures can be made stronger, stiffer, more stable; use the correct technical vocabulary.</p>	<p>By the end of Year 4 most children should: Know that systems have an input, process and output; how to programme a computer to control their products; how to make strong, stiff shell structures; use the correct technical vocabulary.</p>	<p>By the end of Year 6 most children should: Know that materials have functional and aesthetic qualities; that systems have an input, process and output; how to programme a computer to control and monitor their products; how to reinforce and strengthen a framework; use the correct vocabulary.</p>
<p><u>COOKING AND NUTRITION</u></p> <p>Technical Knowledge</p>	<p>To explore and evaluate food using senses.</p>	<p>Across KS1 pupils should know:</p> <ul style="list-style-type: none"> • That food ingredients should be combined according to their sensory characteristics. 	<p>Across LKS2 pupils should know:</p> <ul style="list-style-type: none"> • That food ingredients can be fresh, pre-cooked and processed. 	<p>Across UKS2 pupils should know:</p> <ul style="list-style-type: none"> • That a recipe can be adapted by adding or substituting one or more ingredients. 					
<p>Where food comes from.</p>	<p>They make observations of animals and plants and explain why some things occur, and talk about changes.</p>	<p>Across KS1 pupils should know:</p> <ul style="list-style-type: none"> • That all food comes from plants or animals. • That food has to be farmed, grown elsewhere (e.g. home) or caught. 	<p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> • 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. 	<p>Across UKS2 pupils should know:</p> <ul style="list-style-type: none"> • That seasons may affect the food available. • How food is processed into ingredients that can be eaten or used in cooking. 					
<p>Assessment Criteria</p>		<p>By the end of Year 2 most children should: Know that food comes from plants or animals and that it is farmed or caught.</p>	<p>By the end of Year 4 most children should: Know that food grown, reared and caught in the UK, Europe and wider world.</p>	<p>By the end of Year 6 most children should: Know that food is grown, reared and caught in the UK, Europe and the wider world; that seasons may affect the food available; how food is processed into ingredients.</p>					

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<p>Food preparation, cooking and nutrition.</p>	<p>Know the importance for good health of physical exercise and a healthy diet.</p>	<p>Across KS1 pupils should know:</p> <ul style="list-style-type: none"> • How to name and sort foods into the five groups in The eat-well plate. • That everyone should eat at least five portions of fruit and vegetables every day. • How to prepare simple dishes safely and hygienically, without using a heat source. • How to use techniques such as cutting, peeling and grating. 	<p>Across KS2 pupils should know:</p> <ul style="list-style-type: none"> • How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. • How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. 	
		<p>By the end of Year 2 most children should: Know how to prepare simple dishes safely and hygienically without a heat source, name and sort foods into groups; know that everyone should eat at least five portions of fruit and vegetables a day.</p>	<p>Across LKS2 pupils should know:</p> <ul style="list-style-type: none"> • That a healthy diet is made up from a variety and balance of different food and drink, as depicted in the eat-well plate. • That to be active and healthy, food and drink are needed to provide energy for the body. 	<p>Across UKS2 pupils should know:</p> <ul style="list-style-type: none"> • That recipes can be adapted to change the appearance, taste, texture and aroma. • That different food and drink contain different substances – nutrients, water and fibre – that are needed for health.
<p>Assessment Criteria</p>			<p>By the end of Year 4 most children should: Know how to prepare a variety of dishes safely and hygienically; that a healthy diet is made from a variety and balance of different food and drink; that food and drink are needed to provide energy for the body.</p>	<p>By the end of Year 6 most children should: Know how to prepare and cook a variety of dishes safely and hygienically using, where appropriate, a heat source; that different food and drink contain nutrients, water and fibre that are needed for health.</p>