

# Design and Technology at Orleton Primary School

Using creativity and imagination, pupils design and make products that solve real problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Through the evaluation of past and present design and technology, pupils develop a critical understanding of its impact on daily life and the wider world.

**CUMULATIVE PROGRESSION** – Pupils' learning from previous years should be revisited in teachers' planning and practice and progressively used in subsequent years.

	<b>Cooking and Nutrition</b> Understand and apply the principles of nutrition and learn how to cook	<b>Design: Developing, Planning and Communicating Ideas</b>		<b>Make</b> Work with tools, equipment, materials and components to make quality products	<b>Evaluate</b> Evaluate processes and products	<b>Technical Knowledge</b> Develop technical expertise and knowledge
		Understand context, users and purpose	Generate, develop, model and communicate ideas			
R	The child tastes a range of different foods and identifies different tastes/smells/textures. The child knows that all food comes from plants and animals. The child begins to work safely and hygienically. The child weighs and measures using non-	The child works confidently with a story-based context for their product. The child states what product they are designing and who for.	The child develops and communicates ideas by drawing and talking. The child selects materials from a limited range that will meet a simple design criterion e.g. shiny. The child discusses their work as it progresses.	The child begins to create their design using basic techniques. The child starts to build structures, joining components together. The child begins to use scissors. The child uses adhesives to join material.	The child identifies whether their construction is fit for purpose. The child says what they like and do not like about items they have made and attempt to say why. The child begins to talk about their designs as they develop and identify good and bad points.	The child chooses materials for a purpose. Eg. 'This tower needs to be strong for Teddy so I will use big sticks, not small ones.' The child selects and names the tools needed to work with the materials e.g. scissors for paper.

	<p>statutory measures. Eg. spoons/cups.</p> <p>The child stirs, spreads and kneads to shape a range of foods.</p>				<p>The child starts to talk about changes made during the making process.</p>	
1	<p>The child knows that everyone should eat at least 5 portions of fruit and vegetables every day.</p> <p>The child begins to explore the understanding that food has to be farmed, grown elsewhere (eg. home) or caught.</p> <p>The child knows that all food must be farmed, grown elsewhere (including at school), or caught</p> <p>The child starts to understand how to name and sort foods into the 'Eatwell plate'.</p> <p>The child learns how to use simple techniques of cutting/peeling/chopping safely to make food.</p> <p>The child knows how to prepare simple dishes safely and hygienically, without using a heat source.</p>	<p>The child uses knowledge of existing products to help create their own ideas.</p> <p>The child begins to draw on own experience to help generate ideas.</p> <p>The child starts to suggest ideas and explains what they are going to do.</p> <p>The child can identify a target group for what they intend to design and make based on design criteria.</p>	<p>The child describes what and who their products are for.</p> <p>The child explains how their products will work.</p> <p>The child begins to develop their ideas through talk and drawings.</p> <p>The child makes templates and mock-ups of their ideas in card and paper.</p>	<p>The child begins to make their design using appropriate techniques.</p> <p>With help, the child measures, marks out, cuts and shapes a range of materials.</p> <p>The child explores using tools e.g. scissors safely.</p> <p>The child begins to assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape.</p> <p>The child begins to use simple finishing techniques to improve the appearance of their product.</p>	<p>The child starts to evaluate their product by discussing how well it works in relation to the purpose (design criteria).</p> <p>The child begins to evaluate their products as they are developed, identifying strengths and possible changes they might make.</p>	<p>The child begins to build structures, exploring how they can be made stronger, stiffer and more stable.</p> <p>The child explores and uses mechanisms [for example, levers, sliders, wheels and axles], in their products.</p>
2	<p>The child begins to understand that all food comes from plants or animals.</p> <p>The child knows how to sort food into the five groups on the "Eatwell plate".</p> <p>The child learns how to use simple techniques such as peeling and grating safely to make food.</p> <p>The child knows how to prepare simple dishes safely and hygienically, without using a heat source.</p>	<p>The child identifies a purpose for what they intend to design and make.</p> <p>They say how they will make their products suitable for their intended users.</p> <p>The child uses simple design criteria to help develop their ideas.</p> <p>The child can identify a target group for what they intend to design and make based on a design criteria.</p>	<p>The child begins to develop their design ideas through discussion, observation, drawing and modelling.</p> <p>The child models ideas by exploring materials, by making templates and mock-ups.</p>	<p>The child, with help, measures, cuts and scores with some accuracy.</p> <p>The child learns to use hand tools safely and appropriately.</p> <p>The child starts to assemble, join and combine materials in order to make a product.</p> <p>The child demonstrates how to cut, shape and join fabric to make a simple product.</p> <p>The child uses basic sewing techniques.</p> <p>The child starts to choose and use appropriate</p>	<p>The child evaluates their work against their design criteria.</p> <p>They look at a range of existing products explain what they like and dislike about products and why.</p> <p>The child starts to evaluate their products as they are developed, identifying strengths and possible changes they might make.</p> <p>With confidence, the child talks about their ideas, saying what they like and dislike about them.</p>	<p>The child builds structures, exploring how they can be made stronger, stiffer and more stable.</p> <p>The child begins to select tools and materials; use correct vocabulary to name and describe them.</p>

				finishing techniques based on own ideas.		
KS2 including direct reference to national curriculum aims	<b>Cooking and Nutrition</b> Understand and apply the principles of nutrition and learn how to cook	<b>Design: Developing, Planning and Communicating Ideas</b>		<b>Make</b> Working with tools, equipment, materials and components to make quality products	<b>Evaluate</b> Evaluating processes and products	<b>Technical Knowledge</b> Develop technical expertise and knowledge
		<b>Understand context, users and purpose</b>	<b>Generate, develop, model and communicate ideas</b>			
3	<p>The child begins to know 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> <p>The child understands how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</p> <p>The child begins to understand how to use a range of techniques such as peeling, chopping, slicing, mixing.</p> <p>The child starts to understand that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate'</p> <p>The child begins to know that to be active and healthy, food and drink are needed to provide energy for the body.</p>	<p>The child gathers information about the needs and wants of particular individuals and groups. The child understands how well products have been designed, made, what materials have been used and the construction technique.</p> <p>The child learns about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.</p>	<p>The child, with growing confidence, generates ideas for an item, considering its purpose and the user/s. The child can explain how particular parts of their products work.</p> <p>The child starts to order the main stages of making a product.</p> <p>The child identifies a purpose and establishes criteria for a successful product.</p> <p>The child knows to make drawings with labels when designing.</p>	<p>The child selects a wider range of tools and techniques for making their product i.e. construction materials, textiles, food ingredients, mechanical components</p> <p>The child explains their choice of tools and equipment component in relation to the skills and techniques they will be using.</p> <p>The child measures, marks out, cuts, scores and assembles components with more accuracy.</p> <p>The child starts to work safely and accurately with a range of simple tools.</p> <p>The child starts to measure, tape or pin, cut and join fabric with some accuracy.</p>	<p>The child starts to think about their ideas as they make progress and is willing to change things if this helps them to improve their work.</p> <p>The child starts to evaluate their product against original design criteria e.g. how well it meets its intended purpose.</p> <p>The child begins to disassemble and evaluate familiar products and consider the views of others to improve them.</p>	<p>The child can explain how particular parts of their products work.</p> <p>The child can explain their choice of materials and components including function and aesthetics.</p> <p>The child starts to understand whether products can be recycled or reused.</p> <p>The child starts to understand that mechanical systems such as levers and pulleys and cams create movement.</p>

4	<p>The child understands 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> <p>The child understands how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</p> <p>The child knows how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>The child knows that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate'</p>	<p>The child develops their own design criteria and uses these to inform their ideas. The child can indicate the design features of their products that will appeal to intended users.</p> <p>The child identifies the strengths and areas for development in their ideas and products.</p> <p>When planning, the child considers the views of others, including intended users, to improve their work.</p> <p>The child learns about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.</p>	<p>The child confidently makes labelled drawings from different views showing specific features.</p> <p>The child develops a clear idea of what has to be done, plans how to use materials, equipment and processes, and suggests alternative methods of making, if the first attempts fail.</p>	<p>The child selects a wider range of tools and techniques for making their product safely.</p> <p>The child knows how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques.</p> <p>The child begins to use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.</p>	<p>The child evaluates their products, carrying out appropriate tests, both during and at the end of the assignment.</p> <p>The child is able to disassemble and evaluate familiar products and consider the views of others to improve them.</p> <p>The child evaluates the key designs of individuals in design and technology and how it has helped shape the world.</p>	<p>When planning the child explains their choice of materials and components according to function and aesthetic.</p> <p>The child starts to understand that electrical systems have an input, process and output.</p> <p>The child knows how simple electrical circuits and components can be used to create functional products.</p> <p>The child understands how to reinforce and strengthen a 3D framework.</p>
5	<p>The child begins to understand that seasons may affect the food available.</p> <p>The child understands how food is processed into ingredients that can be eaten or used in cooking.</p> <p>The child begins to understand that different food and drink contain different substances – nutrients, water and fibre – that are needed for health.</p>	<p>The child works confidently in wider contexts.</p> <p>The child carries out research using surveys to gather information about user needs.</p> <p>The child begins to use research and develops design criteria to inform the design of innovative, functional, appealing products that are fit for purpose.</p>	<p>The child starts to generate develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and CAD.</p> <p>The child draws up a specification for their design-link with Mathematics and Science.</p>	<p>With growing confidence, the child applies a range of finishing techniques, including those from art and design.</p> <p>The child selects appropriate materials, tools and techniques e.g. cutting, shaping, joining and finishing, accurately.</p> <p>The child selects from and uses a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.</p>	<p>The child starts to evaluate a product against the original design specification and by carrying out tests.</p> <p>The child evaluates their work both during and at the end of the assignment.</p> <p>The child begins to seek evaluation from others.</p> <p>The child evaluates the key designs of individuals in design and technology and how it has helped shape the world.</p>	<p>The child starts to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.</p> <p>With growing confidence, the child selects appropriate materials, tools and techniques.</p> <p>The child understands how mechanical systems such as cams or pulleys or gears create movement.</p>

				<p>The child begins to measure and mark out more accurately.</p> <p>The child demonstrates how to use skills in using different tools and equipment safely and accurately.</p> <p>The child measures accurately.</p>		
6	<p>The child understands that seasons may affect the food available.</p> <p>The child understands how food is processed into ingredients that can be eaten or used in cooking.</p> <p>The child knows how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</p> <p>The child understands that different food and drink contain different substances – nutrients, water and fibre – that are needed for health.</p>	<p>The child works confidently in wider contexts.</p> <p>The child carries out research using surveys to gather information about user needs.</p> <p>The child begins to use research and develops design criteria to inform the design of innovative, functional, appealing products that are fit for purpose.</p>	<p>The child generates, develops, models and communicates their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and CAD.</p> <p>The child draws up a specification for their design-link with Mathematics and Science.</p> <p>The child selects appropriate materials, tools and techniques.</p>	<p>The child confidently selects appropriate tools, materials, components and techniques and uses them safely and accurately.</p> <p>The child assembles components to make working models.</p> <p>The child aims to make and to achieve a quality product. With confidence, the child pins, sews and stitches materials together to create a product.</p> <p>The child accurately applies a range of finishing techniques, including those from art and design.</p> <p>The child constructs products using permanent joining techniques.</p>	<p>The child demonstrates when to make modifications as they go along.</p> <p>The child evaluates their products, identifying strengths and areas for development, and carrying out appropriate tests.</p> <p>The child evaluates their work, during, and at the end of the assignment.</p> <p>The child records their evaluations using drawings with labels.</p> <p>The child evaluates their product against their original criteria and suggests ways that their product could be improved.</p> <p>The child evaluates the key designs of individuals in design and technology and how it has helped shape the world.</p>	<p>The child starts to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.</p> <p>The child selects appropriate materials, tools and techniques.</p> <p>The child understands that mechanical and electrical systems have an input, process and output.</p> <p>The child uses finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.</p> <p>The child knows how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products.</p> <p>The child knows how to reinforce structures.</p>