



Design & Technology Curriculum at Batchley First School



Knowledge Progression

Our DT curriculum is designed to inform how we plan for children to grow their knowledge year by year and for us to assess how well they are improving.

Progression is a cumulative experience of developing substantive knowledge (the “know what”), whilst using and applying disciplinary and procedural knowledge (the “know how to”) gained and made secure by repeated practice in different contexts.

Learning is further embedded by the application of, and the developing forward from, what has previously been learned and remembered into new concepts and contexts, whilst also revisiting key concepts (such as structures or food) previously studied.

	Foundations <i>Under review</i>	Year 1	Year 2	Year 3	Year 4
Developing, planning and communicating ideas	Nursery - Emerging - Shows control in holding and using jugs to pour, hammers, books and mark-making tools	<i>In year 1, children will learn to design products through exploration of similar, existing products. They will develop their own ideas through experimentation.</i> Describe and explain the problem that they are trying to solve. Begin to draw on their own experience to help generate	<i>In year 2, children decide key factors that will influence their designs, in particular audience. They will study more closely the components of existing products and undertake more exploration of techniques before starting on their own products.</i> Describe and explain the problem that they are	<i>In year 3, children begin each product by creating their own design brief and focus more deeply on the functionality and aesthetics of their designs / products. They break-down the process of making their project into small steps and practise skills and techniques needed that may be unfamiliar to them.</i>	<i>In year 4, children research, particularly from target audience members, to inform their design brief and explore finishings and fixings that will enhance their products. They make more informed choices of their own at all stages of the design and making process.</i>

	<p>Developing - Uses one-handed tools and equipment, e.g. makes snips in paper with child scissors</p> <p>Explain what they are making and which materials they are using.</p> <p>Select materials from a limited range that will meet a simple design criteria e.g. shiny.</p> <p>Select and name the tools needed to work the materials e.g. scissors for paper.</p> <p>Explore ideas by rearranging materials.</p> <p>Describe simple models or drawings of ideas and intentions.</p> <p>Discuss their work as it progresses.</p>	<p>ideas and research conducted on criteria.</p> <p>When looking at existing products explain what they like and dislike about products and why.</p> <p>Begin to understand the development of existing products: What they are for, how they work, materials used, etc.</p> <p>Start to suggest ideas and explain what they are going to do.</p> <p>Understand how to identify a target group for what they intend to design and make.</p> <p>Plan how they will make their design.</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>trying to solve, including what they think will be important factors to consider in their design.</p> <p>Identify a purpose for what they intend to design and make.</p> <p>Disassemble real products, identifying what they think are the most important elements.</p> <p>Explain why they think particular materials and fixings have been chosen.</p> <p>Identify what to find out from people who will use the product to inform their plans.</p> <p>Plan how they will make their design, showing the different elements and the steps they will take.</p> <p>Experiment with ideas away from the making of a final product.</p> <p>Identify anything in their design they will need to use</p>	<p>Create a design brief for the problem that they are trying to solve.</p> <p>With growing confidence generate ideas for an item, considering its purpose and the user/s.</p> <p>List important factors to consider in their design inc. function and appearance.</p> <p>Start to understand whether products can be recycled or reused.</p> <p>Understand how well products have been designed, made, what materials have been used and the construction technique.</p> <p>Learn about inventors, designers, engineers, chefs and manufacturers who have developed similar ground-breaking products.</p> <p>When planning, explain their choice of materials and components including function and aesthetics.</p>	<p>Create a realistic, yet ambitious design brief for the problem that they are trying to solve.</p> <p>Take account of the views of people who will use the product in their design decisions.</p> <p>List important factors to consider in their design inc. function, appearance, durability and cost.</p> <p>Justify choices of materials, fixings, components and finishings.</p> <p>Identify any techniques and tool use which they will have to practise.</p> <p>Suggest alternative methods of making, if the first attempts fail.</p> <p>Identify when to make a simple prototype of specific elements of the design.</p> <p>Explore and take inspiration from inventors, designers, engineers, chefs and manufacturers who have</p>
--	--	---	--	--	--

			which they will have to practise.	Order the main stages of making a product. Know to make drawings with labels when designing.	developed similar ground-breaking products.
Working with tools, equipment, materials and components to produce quality products	<p>Begin to create their design using basic techniques.</p> <p>Start to build structures, joining components together.</p> <p>Look at simple hinges, wheels and axles. Use technical vocabulary when appropriate.</p> <p>Begin to use scissors to cut straight and curved edges and hole punches to punch holes.</p> <p>Explore using/ holding basic tools such as a saw or hammer.</p> <p>Use adhesives to join material.</p>	<p><i>In year 1, children will begin to create products, using a range of tools and materials.</i></p> <p>Make their design using appropriate techniques.</p> <p>With help measure, mark out, cut and shape a range of materials.</p> <p>Explore using tools e.g. scissors and a hole punch safely.</p> <p>Build structures, exploring how they can be made stronger, stiffer and more stable.</p> <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</p>	<p><i>In year 2, children will add mechanisms to their products and focus on selecting materials and tools for purpose.</i></p> <p>Learn to use hand tools safely and appropriately.</p> <p>Use appropriate tools to cut, shape, join, assemble and finish; use correct vocabulary to name and describe them.</p> <p>Know the importance of working safely when handling tools and materials for construction and textiles.</p> <p>Select from materials appropriate to purpose and finish, explaining their choices.</p> <p>Experiment with ideas and materials to add strength</p>	<p><i>In year 3, children will add a greater range of mechanisms to their products and choose and use tools accurately. They will begin to adapt plans as an ongoing part of the process.</i></p> <p>Select a wider range of tools and techniques for making their product i.e. construction materials and kits, textiles, food ingredients, mechanical components and electrical components.</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, including measuring, taping or pinning, cutting and joining fabric with some accuracy.</p>	<p><i>In year 4, children will focus more greatly on aesthetics and the finishings of their products. Technology could be used to control their increasingly more complex mechanisms.</i></p> <p>Work precisely and safely when handling tools and components, including electronic components, for making mechanisms and finer aspects of products</p> <p>Sew using a range of different stitches, to weave and knit.</p> <p>Use technology to control their products.</p> <p>Select suitable fabrics and threads appropriate to purpose, appearance and joins of a design.</p> <p>Select from materials appropriate to purpose and</p>

		<p>improve the appearance of their product.</p> <p>Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</p>	<p>and stability to the structure.</p> <p>Experiment with ideas and materials to add decorative qualities.</p> <p>Experiment with ideas to explore and improve the working of simple mechanisms.</p> <p>Describe, from observation, the working of a simple mechanism.</p>	<p>Demonstrate understanding that mechanical and electrical systems have an input, process and output and that mechanical systems such as levers and linkages or pneumatic systems create movement.</p> <p>Know how simple electrical circuits and components can be used to create functional products.</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>finish, explaining their choices.</p> <p>Experiment with materials and methods to improve strength and stability including joins which support the structure.</p> <p>Select from ideas to create an aesthetic finish for products, using a range of equipment including technology.</p> <p>Understand how to reinforce and strengthen a 3D framework.</p> <p>Test the working of mechanisms and identify where improvements could be made.</p> <p>Know how mechanical systems such as cams or pulleys or gears create movement.</p> <p>Understand how more complex electrical circuits and components can be used to create functional products.</p>
--	--	--	--	---	--

<p>Evaluating processes and products</p>	<p>Say what they like and do not like about items they have made and attempt to say why.</p> <p>Begin to talk about their designs as they develop and identify good and bad points.</p> <p>Start to talk about changes made during the making process.</p> <p>Discuss how closely their finished products meet their design criteria</p>	<p><i>In year 1, children gain the knowledge that evaluating existing products can aid their process. They begin reflecting on the process of designing and making their own products.</i></p> <p>Describe real products, identifying what they think are the most important elements.</p> <p>Explain why they think particular materials have been chosen.</p> <p>Start to evaluate their products by discussing how well it works in relation to the purpose (design criteria).</p> <p>Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make.</p>	<p><i>In year 2, children justify views about existing products and elements they will take into their designs. They reflect on any adaptations from their original plans.</i></p> <p>Look at a range of existing products explain what they like and dislike about Products and why.</p> <p>Describe and explain what they are designing and making, using language appropriate to purpose.</p> <p>With confidence talk about their ideas, saying what they like and dislike about them.</p> <p>Evaluate their work against their original plan.</p> <p>Test their work against the purpose of their design idea and make adaptations.</p> <p>Describe any adaptations they have made, giving reasons for what they have chosen to do.</p>	<p><i>In year 3, children begin evaluating more closely components and individual aspects of existing products. They will explore how similar designs to theirs have impacted the world. Children review how closely they have matched their design criteria.</i></p> <p>Describe real products, how they work and how they serve their purpose.</p> <p>Begin to disassemble and evaluate familiar products and consider the views of others to improve them.</p> <p>Describe materials and how their properties match the purpose and appearance of the product.</p> <p>Evaluate their product against original design criteria e.g. how well it meets its intended purpose</p> <p>Evaluate how the key designs of individuals in design and technology has helped shape the world.</p>	<p><i>In year 4, children constantly evaluate how closely they are matched their design brief at all stages of the process and justify any adaptations made to solve problems that arise. They will take influence from and innovate the work of other designers. Children will design tests to measure how well their products are fit for purpose.</i></p> <p>Describe and explain how what they are designing and making fits the design brief, using language appropriate to purpose.</p> <p>Match their work against their design criteria, identifying which elements are successful and which need adaptation.</p> <p>Describe the different steps in their design and making process, giving reasons for what they have chosen to do</p> <p>Evaluate their products carrying out appropriate</p>
---	--	--	--	---	---

			Describe what they have found straightforward and tricky in using tools and materials.		<p>tests to gauge fitness for purpose.</p> <p>Evaluate the key designs of individuals in design and technology has helped shape the world, including their influence on their own products.</p>
Food and nutrition	<p>Begin to develop a food vocabulary using taste, smell, texture and feel.</p> <p>Explore familiar food products e.g. fruit and vegetables.</p> <p>Stir, spread, knead and shape a range of food and ingredients.</p> <p>Begin to work safely and hygienically.</p> <p>Start to think about the need for a variety of foods in a diet.</p> <p>Measure and weigh food items, non statutory measures e.g. spoons, cups.</p>	<p><i>In year 1, children are introduced to food preparation techniques, where food comes from and its nutritional value.</i></p> <p>Know how to prepare simple dishes safely and hygienically</p> <p>Know how to use techniques such as cutting, peeling and grating.</p> <p>Find out which ingredients they are working with come from plants and which from animals.</p> <p>Explore the understanding that food has to be farmed, grown elsewhere (e.g. home) or caught.</p> <p>With support, name and sort some foods into the</p>	<p><i>In year 2, children hone techniques for safe preparation of food, using a wider repertoire of techniques. They further explore where ingredients come from and its nutritional value, using this to justify choices of ingredients.</i></p> <p>Know that hand hygiene and wearing clean protective clothing are important and follow safe and hygienic practice.</p> <p>Show that they can use simple tools to cut, peel, grate, spread and mix food ingredients safely.</p> <p>Understand that all food comes from plants or animals.</p>	<p><i>In year 3, children are introduced to more techniques for safe preparation of food and are encouraged to justify choices of techniques for preparing in different ways. They focus on food geography and the need for a healthy diet.</i></p> <p>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>Understand 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><i>In year 4, children refine skills with a wide range of equipment and justify choices for desired effects. They focus more deeply on food geography and the impact this can have on the environment. They research and suggest nutritional values of different components of recipes and their finished products.</i></p> <p>Understand 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 and the impact this can have on the environment.</p> <p>Find out the geographical origin of ingredients and how they are cultivated.</p>

		<p>five groups in 'The Eat well plate'</p> <p>Understand the importance of a healthy diet.</p> <p>Follow a given recipe.</p>	<p>Suggest or research where ingredients have come from, e.g. farmed, reared, processed, etc.</p> <p>Select ingredients and say why they have chosen them.</p> <p>Name and sort foods into the five groups in 'The Eat well plate'</p> <p>Know that everyone should eat at least five portions of fruit and vegetables every day.</p>	<p>Understand how and when to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>Work safely and hygienically</p> <p>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>Have a sense that to be active and healthy, food and drink are needed to provide energy for the body.</p>	<p>Select appropriate equipment to slice, chop, peel, grate, spread, mix, knead and bake food ingredients safely.</p> <p>Work safely and hygienically</p> <p>Construct a recipe for a simple dish.</p> <p>Test different ingredients for flavour and explain their choices.</p> <p>Identify the nutritional value of different ingredients and food groups.</p> <p>Know that to be active and healthy, food and drink are needed to provide energy for the body.</p>
--	--	--	--	--	---