

Progression of Skills in Design Technology

The aim of science teaching is for our children to develop an understanding of the process of how products are designed, made and evaluated and how they support us in our daily life. Through developing their technical knowledge, design technology will help them think about products, what they are made from and how and how we are on a constant journey to refine and make improvements to the world around us. This contributes to our school's overall aim of developing enquiring minds, a lifelong love of learning, respect for themselves, others and the environment so that they will have the skills, resilience and adaptability to thrive in a rapidly changing world.

INTENT							
	EYFS	Year 1/2		Year 3/4		Year 5/6	
Knowledge	<p>Pupils should be taught about:</p> <p>They represent their own ideas, thoughts and feelings through design and technology</p>	<p>Pupils should be taught about:</p> <p>Design</p> <ul style="list-style-type: none"> design purposeful, functional, appealing products for themselves and other users based on design criteria generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology <p>Make</p> <ul style="list-style-type: none"> select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics <p>Evaluate</p> <ul style="list-style-type: none"> explore and evaluate a range of existing products evaluate their ideas and products against design criteria Technical knowledge build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. Cooking and nutrition use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from. 		<p>Pupils should be taught about:</p> <p>Design</p> <ul style="list-style-type: none"> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>Make</p> <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities <p>Evaluate</p> <ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world Technical knowledge apply their understanding of how to strengthen, stiffen and reinforce more complex structures understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] apply their understanding of computing to program, monitor and control their products. Cooking and nutrition understand and apply the principles of a healthy and varied diet prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. 			
Skills	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Developing, planning and communicating ideas.	<p><u>ELGs:</u></p> <p><u>Self Confidence and Self Awareness:</u></p> <ol style="list-style-type: none"> Children are confident to try new activities. They can say why they like some activities more than others. They are confident to speak in a familiar group. They will talk about their ideas. They will choose the resources they need for their chosen activities. They say when they do or don't need help. <p><u>Understanding the World:</u></p> <ol style="list-style-type: none"> Children recognise that 	<ul style="list-style-type: none"> Draw on their own experience to help generate ideas Suggest ideas and explain what they are going to do Identify a target group for what they intend to design and make Model their ideas in card and paper Develop their design ideas applying findings from their earlier research 	<ul style="list-style-type: none"> Generate ideas by drawing on their own and other people's experiences Develop their design ideas through discussion, observation, drawing and modelling Identify a purpose for what they intend to design and make Identify simple design criteria Make simple drawings and label parts 	<ul style="list-style-type: none"> Generate ideas for an item, considering its purpose and the user/s Identify a purpose and establish criteria for a successful product. Plan the order of their work before starting Explore, develop and communicate design proposals by modelling ideas Make drawings with labels when designing 	<ul style="list-style-type: none"> Generate ideas, considering the purposes for which they are designing Make labelled drawings from different views showing specific features Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail Evaluate products and identify criteria that can be used for their own designs 	<ul style="list-style-type: none"> Generate ideas through brainstorming and identify a purpose for their product Draw up a specification for their design Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail Use results of investigations, information sources, including ICT when developing design ideas 	<ul style="list-style-type: none"> Communicate their ideas through detailed labelled drawings Develop a design specification Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways Plan the order of their work, choosing appropriate materials, tools and techniques

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Working with tools, equipment, materials and components to make quality products (inc- food)</p>	<p>a range of technology is used in places such as homes and schools. 2. They select and use technology for particular purposes.</p> <p><u>Expressive Arts and Design:</u> Children use what they have learnt about media and materials in original ways, thinking about uses and purposes.</p> <p>They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories.</p>	<p>Make their design using appropriate techniques</p> <ul style="list-style-type: none"> With help measure, mark out, cut and shape a range of materials Use tools <i>eg scissors and a hole punch</i> safely Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape Select and use appropriate fruit and vegetables, processes and tools Use basic food handling, hygienic practices and personal hygiene Use simple finishing techniques to improve the appearance of their product 	<p>Begin to select tools and materials; use vocab' to name and describe them</p> <ul style="list-style-type: none"> Measure, cut and score with some accuracy Use hand tools safely and appropriately Assemble, join and combine materials in order to make a product Cut, shape and join fabric to make a simple garment. Use basic sewing techniques Follow safe procedures for food safety and hygiene Choose and use appropriate finishing techniques 	<ul style="list-style-type: none"> Select tools and techniques for making their product Measure, mark out, cut, score and assemble components with more accuracy Work safely and accurately with a range of simple tools Think about their ideas as they make progress and be willing change things if this helps them improve their work Measure, tape or pin, cut and join fabric with some accuracy Demonstrate hygienic food preparation and storage Use finishing techniques strengthen and improve the appearance of their product using a range of equipment including ICT 	<ul style="list-style-type: none"> Select appropriate tools and techniques for making their product Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques Join and combine materials and components accurately in temporary and permanent ways Sew using a range of different stitches, weave and knit Measure, tape or pin, cut and join fabric with some accuracy Use simple graphical communication techniques 	<ul style="list-style-type: none"> Select appropriate materials, tools and techniques Measure and mark out accurately Use skills in using different tools and equipment safely and accurately Weigh and measure accurately (time, dry ingredients, liquids) Apply the rules for basic food hygiene and other safe practices <i>e.g. hazards relating to the use of ovens</i> Cut and join with accuracy to ensure a good-quality finish to the product 	<ul style="list-style-type: none"> Select appropriate tools, materials, components and techniques Assemble components make working models Use tools safely and accurately Construct products using permanent joining techniques Make modifications as they go along Pin, sew and stitch materials together create a product Achieve a quality product
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Evaluating processes and products</p>		<ul style="list-style-type: none"> Evaluate their product by discussing how well it works in relation to the purpose Evaluate their products as they are developed, identifying strengths and possible changes they might make Evaluate their product by asking questions about what they have made and how they have gone about it 	<ul style="list-style-type: none"> Evaluate against their design criteria Evaluate their products as they are developed, identifying strengths and possible changes they might make Talk about their ideas, saying what they like and dislike about them 	<ul style="list-style-type: none"> Evaluate their product against original design criteria <i>e.g. how well it meets its intended purpose</i> Disassemble and evaluate familiar products 	<ul style="list-style-type: none"> Evaluate their work both during and at the end of the assignment Evaluate their products carrying out appropriate tests 	<ul style="list-style-type: none"> Evaluate a product against the original design specification Evaluate it personally and seek evaluation from others 	<ul style="list-style-type: none"> Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests Record their evaluations using drawings with labels Evaluate against their original criteria and suggest ways that their product could be improved
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Technical knowledge</p>		<ul style="list-style-type: none"> explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. 	<ul style="list-style-type: none"> build structures, exploring how they can be made stronger, stiffer and more stable 	<ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures. understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] 	<p>Refine techniques for strengthening materials.</p> <ul style="list-style-type: none"> understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] 	<p>Refine techniques for strengthening materials.</p> <ul style="list-style-type: none"> apply their understanding of computing to program, monitor and control their products. 	<p>Understand that materials can have functional and aesthetic qualities. Know that materials can be combined to create more useful characteristics. Understand mechanical systems create movement.</p>

Cooking	Recognises that food comes from plants and animals	<ul style="list-style-type: none"> • use the basic principles of a healthy and varied diet to prepare dishes • understand where food comes from and that it is farmed or caught. Names the five food groups and know that you need 5 a day.	<ul style="list-style-type: none"> • understand where food comes from and that it is farmed or caught or imported. Starting to prepared food and use chopping, peeling, grating techniques. Know that food is needed to give us energy.	<ul style="list-style-type: none"> • Cooking and nutrition • understand and apply the principles of a healthy and varied diet • prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • understand seasonality, and know where and how a variety of Ingredients are grown, reared, caught and processed. 	<ul style="list-style-type: none"> • understand and apply the principles of a healthy and varied diet Start to create dishes using a heat source and use appropriate hygiene. Uses techniques of mixing, spreading, kneading and baking.	<ul style="list-style-type: none"> • understand where food comes from and that it is farmed or caught or imported on either a regional, national or international scale. • understand and apply the principles of a healthy and varied diet Cooks using heat and adapts recipes to make them taste better.	Understands that seasons affect food availability. Begins to understand about how food is often processed and how this and advertisements affect the cost. Understand that a healthy diet is a balance of all the food groups. Understands how to store foods and minimise waste.
	IMPLEMENTATION						
Vocabulary	Cut, make, join, scissors, tape, blu-tak, split pins.	Assemble, join, design, make, evaluate. Tools, materials, Things I like about my product..., Things I would change.... The trickiest part was making... The easiest part was making...levers, sliders, wheels, axels,		Measure, Mark out, cut, joining, sketch, diagram, score, evaluate,			
	IMPACT						
Assessment opportunities	Can the child hold scissors? Can the child snip, cut a straight line, cut a curved line, cut various materials. Can the child make own models and talk about what it is? Can the child use joining techniques to create models?	Can the child design a model using pictures and labels? Can the child follow a design brief? Can the child evaluate easy and tricky parts and say what they would change? Can the child use a variety of joining techniques? Can the child use a variety of mechanisms - levers, sliders, wheels, axels?					