



# Design and Technology

Skills progression overview at Sixpenny Handley First School and Nursery

National curriculum/EY curriculum					
Year N (ages in brackets)	Year R	Year 1	Year 2	Year 3	Year 4
<p><b>Children aged 0-3 will be learning to: (Development matters)</b> Explore different materials, using all their senses to investigate them.</p> <p>Manipulate and play with different materials. Use their imagination as they consider what they can do with different materials.</p> <p>Make simple models which express their ideas.</p> <p>Build independently with a range of appropriate resources.</p> <p>Develop manipulation and control.</p> <p>Explore different materials and tools.</p> <p><b>Children aged 3-4 will be learning to: (Development matters)</b> Explore different materials freely, in order to develop their ideas about how to use them and what to make.</p> <p>Develop their own ideas and then decide which materials to use to express them.</p> <p>Join different materials and explore different textures.</p> <p>Choose the right resources to carry out their own plan.</p>	<p><b>Reception children will be learning to: (Development matters)</b> Return to and build on their previous learning, refining ideas and developing their ability to represent them.</p> <p>Create collaboratively sharing ideas, resources and skills.</p> <p>Explore how things work (Understanding the world)</p> <p><b>ELG</b></p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>Share their creations, explaining the process they have used</p> <p>Use a range of small tools, including scissors, paint brushes and cutlery;</p>	<p><b>National curriculum objectives:</b></p> <p>DT M1 Select from and use a range of tools and equipment to perform practical tasks</p> <p>DT M2 Select from and use a wide range of materials and components including construction materials, textiles and ingredients according to their characteristics</p> <p>DT D1 Design purposeful, functional, appealing products for themselves and other users based upon the design criteria</p> <p>DT D2 generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</p> <p>DT E1 Explore and evaluate a range of existing products</p> <p>DT E2 Evaluate their ideas and products against design criteria</p> <p>DT TK 2 Explore and use mechanisms</p>	<p><b>National curriculum objectives:</b></p> <p>DT M1 Select from and use a range of tools and equipment to perform practical tasks</p> <p>DT M2 Select from and use a wide range of materials and components including construction materials, textiles and ingredients according to their characteristics</p> <p>DT D1 Design purposeful, functional, appealing products for themselves and other users based upon the design criteria</p> <p>DT D2 generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</p> <p>DT E1 Explore and evaluate a range of existing products</p> <p>DT E2 Evaluate their ideas and products against design criteria</p> <p>DT CN 1 Use the basic principles of a healthy and varied diet to prepare dishes</p>	<p><b>National curriculum objectives:</b></p> <p>DT D1 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.</p> <p>DT D2 Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>DT M1 Select from and use a wider range of tools and equipment to perform practical tasks (e.g. cutting, shaping, joining and finishing), accurately</p> <p>DT M2 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> <p>DT E1 Investigate and analyse a range of existing products</p> <p>DT E2 Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</p>	<p><b>National curriculum objectives:</b></p> <p>DT D1 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.</p> <p>DT M2 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> <p>DT M1 Select from and use a wider range of tools and equipment to perform practical tasks (e.g. cutting, shaping, joining and finishing), accurately</p> <p>DT CN2 Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</p> <p>DT D2 Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>



<p>Use one-handed tools and equipment, for example, making snips in paper with scissors.</p>		<p>DT TK1 Build structures exploring how they can be made stronger, stiffer and more stable</p> <p>DT CN2 Find out where food comes from</p> <p>DT CN 1 Use the basic principles of a healthy and varied diet to prepare dishes</p>	<p>DT CN2 Find out where food comes from</p> <p>DT TK1 Build structures exploring how they can be made stronger,</p>	<p>DT TK1 Apply their understanding of how to strengthen, stiffing and reinforce more complex structures</p> <p>DT TK2 Understand and use mechanical systems in their produces (e.g. gears, pulleys, cams, levers and linkages)</p>	<p>DT TK1 Apply their understanding of how to strengthen, stiffing and reinforce more complex structures</p> <p>DT E2 Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</p> <p>DT CN1 Understand and apply the principle of healthy and varied diet</p> <p>DT TK2 Understand and use mechanical systems in their products (e.g. gears, pulleys, cams, levers and linkages)</p> <p>DT E3 Understand how key events and individuals in design and technology have helped shape the world</p> <p>DT TK3 Understand and use electrical systems in their products (e.g. series circuits incorporating switches, bulbs, buzzers and motors)</p>
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Themes within subject	Year N (ages in brackets)	Year R	Year 1	Year 2	Year 3	Year 4
			<p>Our awesome animal planet (Dinosaurs) Victorian Life (significant events beyond living memory and links to events within living memory)</p> <p>Lives of significant individuals.</p>	<p>Fire, Fire!</p> <p>Polar Explorer</p> <p>Tales, towers and Turrets (Significant events beyond living memory, Lives of significant individuals)</p> <p>Things that grow</p>	<p>Rumble in the Rainforest</p> <p>Rockin' Romans – The Roman Empire and its impact on Britain.</p> <p>Stone Age – Changes in Britain from the Stone Age to the Iron Age.</p> <p>Healthy Me</p>	<p>Dress to Impress A study of an aspect of British history that extends pupil knowledge beyond 1066 – Fashion from 1066- present day</p> <p>Great Minds Think Alike – A non European society that provides contrasts with British history – The Mayans/ The Sumer</p>



	As a designer and food technician a nursery child can:	As a designer and food technician, a reception child can:	As a designer and food technician, a year 1 child can:	As a designer and food technician, a year 2 child can:	As a designer and food technician, a year 3 child can:	As a designer and food technician, a year 4 child can:
	<b>Designing</b>					
<b>Understanding contexts, users and purpose</b>	<p>Show curiosity about objects, events and people</p> <p>Question why things happen</p> <p>Engage in open-ended activity</p>	<p>Find ways to solve problems / find new ways to do things / test their ideas</p> <p>Use senses to explore the world around them</p> <p>Create simple representations of events, people and objects</p>	<p>Explain what their product is for, and how it will work</p> <p>Research similar existing products</p>	<p>Explain purpose of product, how it will work and how it will be suitable for the user</p> <p>Use knowledge of existing products to produce ideas</p>	<p>Begin to research others' needs</p> <p>Show design meets a range of requirements</p> <p>Describe purpose of product</p>	<p>Use research for design ideas</p> <p>Produce plan and consider how realistic it is</p>
<b>Generating, developing, modelling and communicating ideas</b>	<p>Express ideas and feelings through making marks, and sometimes give meaning to the marks they make</p>	<p>Express ideas and feelings through making marks, and sometimes give meaning to the marks they make</p> <p>Create collaboratively, sharing ideas, resources and skills.</p>	<p>Design appealing products for a particular user based on simple design criteria.</p> <p>Generate initial ideas and design criteria through own experiences.</p> <p>Develop and communicate these ideas through talk and drawings and mock ups where relevant.</p>	<p>Generate ideas based on simple design criteria and their own experiences, explaining what they could make.</p> <p>Develop, model and communicate their ideas through talking, mock-ups and drawings.</p>	<p>Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.</p> <p>Use annotated sketches, prototypes, final product sketches and pattern pieces; communication technology, such as web-based recipes, to develop and communicate ideas.</p>	<p>Generate and clarify ideas through discussion with peers to develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups.</p> <p>Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.</p> <p>Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches cross-sectional and exploded diagrams.</p>
	<b>Making</b>					
<b>Planning</b>	<p>Select tools and techniques to shape, assemble and join</p> <p>Understand that different media can be</p>	<p>Select tools and techniques to shape, assemble and join</p> <p>Understand that different media can</p>	<p>Explain what they want to make and why</p> <p>Explain what I need to do next</p>	<p>Plan by suggesting what to do next.</p> <p>Select and use tools, equipment, skills and techniques to perform</p>	<p>Plan the main stages of making and work through the plan.</p> <p>Select from and use a range of appropriate utensils,</p>	<p>Order the main stages of making.</p> <p>Select and use appropriate tools to measure, mark out, cut, score, shape and combine with some accuracy related to their products.</p>



	combined for a purpose	be combined for a purpose	Choose suitable materials and explain choices	practical tasks, explaining their choices.  Select new and used materials, components, reclaimed materials and construction kits to build and create their products.	tools and equipment with some accuracy related to their product.	Explain their choice of materials according to functional properties and aesthetic qualities.  Select from and use materials and components, including ingredients, construction and electrical components according to their function and properties.
<b>Practical skills and techniques</b>	Construct with purpose, using a variety of resources  Use simple tools and techniques  Build / construct with a wide range of objects  Make imaginative and complex 'small worlds' with blocks and construction kits, such as azoo with buildings, pens and a play area	Construct with purpose, using a variety of resources  Use simple tools and techniques  Build / construct with a wide range of objects  Make imaginative and complex 'small worlds' with blocks and construction kits, such as azoo with buildings, pens and a play area	Select and use simple utensils, tools and equipment to perform a job e.g. peel, cut, slice, squeeze, grate and chop safely; marking out, cutting, joining and finishing; cut, shape and join paper and card with support.  Select from a range of ingredients and materials according to their characteristics to create a chosen product.  Attempt to use finishing techniques to make a product look good e.g. trimming, icing, decoration to appeal to the consumer!  Work in a safe and hygienic manner.	Join materials/ components together in different ways  Describe which tools are being used and why  Use simple finishing techniques suitable for the products they are creating to improve their aesthetics.	Select from and use finishing techniques suitable for the product they are creating.	
	<b>Evaluating</b>					
<b>Own products/ideas</b>	Discuss simple models which express their ideas.  Adapt work if necessary	Adapt work if necessary  Dismantle, examine, talk about existing objects / structures	Evaluate their ideas throughout and finished products against design criteria, including intended user and purpose.	Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.	Investigate a range of 3-D textile products, ingredients and lever and linkage products relevant to their project.	Investigate and evaluate a range of products including the ingredients, materials, components and techniques that are used.



	<p>Dismantle, examine, talk about existing objects / structures</p> <p>Consider and manage some risks</p> <p>Talk about how things work</p> <p>Look at similarities and differences between existing objects / materials / tools</p> <p>Describe textures</p> <p>Show an interest in technological toys</p>	<p>Consider and manage some risks</p> <p>Talk about how things work</p> <p>Look at similarities and differences between existing objects / materials / tools</p> <p>Describe textures</p> <p>Show an interest in technological toys</p>				
<b>Existing Products</b>	Taste, explore and evaluate a range of products	Taste, explore and evaluate a range of products	Taste, explore and evaluate a range of products to determine the intended user's preferences for the product	Explore a range of existing products related to their design criteria.	<p>Test their product against the original design criteria and with the intended user.</p> <p>Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.</p>	<p>Test and evaluate their own products against design criteria and the intended user and purpose.</p> <p>Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.</p>
<b>Key designers and events</b>			<p>Learn about some inventors</p> <p>Steam Engine - Thomas Savery</p>	<p>Learn about some inventors/ designers /engineers</p> <p>St Pauls - Christopher Wren</p>	<p>Learn about some inventors/ designers /engineers /chefs/ manufacturers of ground-breaking products</p> <p>Ceramics - Clarice Cliff</p>	<p>Learn about some inventors/ designers /engineers /chefs/ manufacturers of ground-breaking products</p> <p>Bridges - Isambard Kingdom Brunel</p> <p>Hats - Philip Treacy, Stephen Jones</p>
	<b>Technical Knowledge</b>					
<b>Materials and structures</b>	Explore different materials, using all their senses to investigate them.	Explore different materials freely, in order to develop their ideas about	Begin to measure and join materials, with some support	<p>Measure materials</p> <p>Describe some different characteristics of materials</p>	<p>Use appropriate materials</p> <p>Work accurately to make cuts and holes</p>	<p>Measure carefully to avoid mistakes</p> <p>Attempt to make product strong</p>



	Manipulate and play with different materials. Use their imagination as they consider what they can do with different materials	how to use them and what to make.  Develop their own ideas and then decide which materials to use to express them.  Join different materials and explore different textures.	Describe differences in materials  Suggest ways to make materials/products stronger	Join materials in different ways  Use joining, rolling or folding to make it stronger	Join materials  Begin to make strong structures	Continue working on product even if original didn't work  Make a strong, stiff structure
<b>Electrical systems</b>					Use simple circuit in product  Learn about how to program a device to control product.	Use number of components in circuit  Program a device to control product
<b>Mechanisms</b>			Begin to use levers and slides	Use levers and slides  Begin to understand how to use wheels and axles	Select appropriate tools / techniques	Select most appropriate tools/ techniques  Refine product after testing  Understand how gears and pulleys can be used to speed up slow down or change the direction of movement.  Know and use technical vocabulary relevant to the project.
<b>Cooking and Nutrition</b>						
<b>Where food comes from</b>	Know that some food can be grown above or underground.	Know about the journey of some foods to our plates  Know how and when to plant seeds to grow our own produce	Know where food on the healthy plates comes from e.g. dairy - cows cereal - crops  Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.  Know about fairtrade products	Know about local food supplies and the idea of food miles  Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.  Know about fairtrade products	Know about the journey of some foods to our plates  Know about fairtrade products	Know about local food supplies and the idea of food miles  Know about fairtrade products



<p><b>Food preparation</b></p>	<p>Know how to prepare fruit and vegetables for snacks. Know how to measure and combine ingredients and whether they need to be cooked.</p> <p>Use technical and sensory vocabulary e.g. stir, mix, sieve, sour, sweet</p>	<p>Know and use technical and sensory vocabulary relevant to the project.</p>	<p>Know and use technical and sensory vocabulary relevant to the project.</p> <p>Describe textures</p> <p>Wash hands &amp; clean surfaces</p> <p>Think of interesting ways to decorate food Say where some foods come from, (i.e. plant or animal)</p> <p>Discuss how fruit and vegetables are healthy</p> <p>Cut, peel and grate safely, with support</p>	<p>Know and use technical and sensory vocabulary relevant to the project.</p> <p>Explain hygiene and keep a hygienic kitchen</p> <p>Describe properties of ingredients and importance of varied diet Say where food comes from (animal, underground etc.)</p> <p>Describe how food is farmed, home-grown, caught</p> <p>Draw eat well plate; explain there are groups of food</p> <p>Describe "five a day"</p> <p>Cut, peel and grate with increasing confidence</p>	<p>Know and use technical and sensory vocabulary relevant to the project.</p> <p>Begin to know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught in the Uk or wider world..</p> <p>Carefully select ingredients Use equipment safely</p> <p>Make product look attractive</p> <p>Think about how to grow plants to use in cooking</p> <p>Begin to understand food comes from UK and wider world</p> <p>Describe how healthy diet= variety/balance of food/drinks</p> <p>Explain how food and drink are needed for active/healthy bodies.</p> <p>Prepare and cook some dishes safely and hygienically</p>	<p>Know and use technical and sensory vocabulary relevant to the project.</p> <p>Know how to independently use an increased range of appropriate equipment and utensils to prepare and combine food.</p> <p>Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught in the Uk or wider world.</p> <p>Explain how to be safe / hygienic and follow own guidelines</p> <p>Present product well - interesting, attractive, fit for purpose</p> <p>Begin to understand seasonality of foods</p> <p>Describe how recipes can be adapted to change appearance, taste, texture, aroma</p> <p>Explain how there are different substances in food / drink needed for health</p> <p>Prepare and cook some savoury dishes</p>
<h2>Vocabulary</h2>						
	<p><i>plan, make, ideas, fruit and vegetable names,</i></p>	<p><i>plan, make, ideas, fruit and vegetable</i></p>	<p><i>planning, investigating</i></p>	<p><i>investigating, planning, design, make,</i></p>	<p><i>user, purpose, design, model, evaluate, prototype,</i></p>	<p><i>user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label,</i></p>



	<p><i>ingredients, mixing bowls , spoon, whisk, sweets, sour, soft, juicy, seed, pip, core</i></p> <p><i>cut, fold,join, circle, square</i></p>	<p><i>names, ingredients, mixing bowls , spoon, whisk, sweets, sour, soft, juicy, seed, pip, core, skin</i></p> <p><i>cut, fold,join, circle, square, triangle</i></p>	<p><i>design, evaluate, make, user, purpose, ideas, product, fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients</i></p> <p><i>cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder,</i></p> <p><i>joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate,finish,slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards</i></p>	<p><i>evaluate,user, purpose, ideas, design criteria, product, function, fruit and vegetable names,names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky,smooth, sharp, crisp, sour,hard flesh, skin, seed, pip, core, slicing, peeling, cutting,squeezing, healthy diet,choosing, ingredients</i></p> <p><i>cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid,cube, cylinder</i></p> <p><i>vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used</i></p>	<p><i>annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing</i></p> <p><i>name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet</i></p> <p><i>shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing</i></p>	<p><i>drawing, function, planning, design criteria, annotated sketch, appealing</i></p> <p><i>name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet</i></p> <p><i>shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing</i></p> <p><i>pulley, drive belt, gear, rotation, spindle,driver, follower, ratio, transmit, axle,motor, circuit, switch, circuit diagram,annotated drawings, exploded diagrams,mechanical system, electrical system,</i></p>
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