

## Planning and Progression: Design and Technology



FS		Y1/2		Y3/4		Y5/6			
My World, Seasons and Celebrations Where Does the Snow Go? Traditional Tales, Marvellous Mini-beasts Fun on the Farm		<u>CYCLE A</u> London Move It, Me On My Map Scented Garden, Seaside	<u>CYCLE B</u> Toys, Under the Sea Springfield to India Wriggle and Crawl	<u>CYCLE A</u> Natural Disasters Explorers, South America (Rainforest) Water (Rivers), Ancient Egypt	<u>CYCLE B</u> The Mayan Civilisation, Chocolate Grimsby's Fishing Industry, Our Local Area Prehistoric Britain, Coastlines	<u>CYCLE A</u> WW2 Extreme Environments, Shackleton Olympic Legacies	<u>CYCLE B</u> Town and Country, Guy Fawkes Viking Raiders, Fair Trade Keen To Be Green		
Understanding The World	Designing	<p>Use a range of small tools, including scissors, paint brushes and cutlery Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function Share their creations, explaining the process they have used;</p>		<p>Generate ideas based on simple design criteria and their own experiences, explaining what they could make. Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology. Design appealing products for a particular user based on simple design criteria.</p>		<p>Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. Produce annotated sketches, prototypes, final product sketches and pattern pieces. Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups.</p>		<p>Generate and develop innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. Generate innovative ideas by carrying out research including surveys, interviews, web based resources and questionnaires. Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams. Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas. Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes, exploded drawings, drawings from different views and, where appropriate, computer aided design. Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take account of constraints including time, resources and cost.</p>	
	Making	<p>Plan by suggesting what to do next. Select and use tools, skills and techniques, explaining their choices. Select new and reclaimed materials and construction kits to build their structures. Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. Select and use tools, explaining their choices, to cut, shape and join paper and card. Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. Select from and use textiles according to their characteristics. Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics. Use simple finishing techniques suitable for the structure/product they are creating. Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.</p>		<p>Plan and order the main stages of making. Plan the main stages of a recipe, listing ingredients, utensils and equipment. Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern. Select and use appropriate utensils and equipment to prepare and combine ingredients. Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. Select from and use appropriate tools with some accuracy to cut, shape and join paper and card. Select from and use finishing techniques suitable for the product they are creating. Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities. Explain their choice of materials according to functional properties and aesthetic qualities. Use finishing techniques suitable for the product they are creating.</p>		<p>Write a step-by-step recipe, including a list of ingredients, equipment and utensils Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. Make, decorate and present the food product appropriately for the intended user and purpose. Produce detailed lists of equipment and fabrics relevant to their tasks. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost. Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used. Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. Use finishing and decorative techniques suitable for the product they are designing and making. Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product. Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment. Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost.</p>			

		Evaluating	<p>Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings.</p> <p>Explore a range of existing books and everyday products that use simple sliders and levers.</p> <p>Explore and evaluate a range of existing textile products relevant to the project being undertaken. Evaluate their ideas throughout and their final products against original design criteria</p> <p>Explore and evaluate a range of products with wheels and axles.</p> <p>Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.</p> <p>Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences.</p>	<p>Investigate a range of 3-D textile products relevant to the project. Test their product against the original design criteria and with the intended user.</p> <p>Investigate and analyse books and, where available, other products with lever and linkage mechanisms.</p> <p>Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used.</p> <p>Investigate and analyse a range of existing battery-powered products. Take into account others' views.</p> <p>Understand how a key event/individual has influenced the development of the chosen product and/or fabric.</p> <p>Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.</p> <p>Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.</p> <p>Evaluate their own products and ideas against criteria and user needs, as they design and make.</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>	<p>Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams.</p> <p>Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.</p> <p>Understand how key chefs have influenced eating habits to promote varied and healthy diets.</p> <p>Investigate and analyse textile products linked to their final product.</p> <p>Compare the final product to the original design specification.</p> <p>Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</p> <p>Consider the views of others to improve their work.</p> <p>Investigate and evaluate a range of existing frame structures.</p> <p>Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.</p> <p>Research key events and individuals relevant to frame structures.</p> <p>Compare the final product to the original design specification.</p> <p>Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</p> <p>Consider the views of others to improve their work.</p> <p>Investigate famous manufacturing and engineering companies relevant to the project.</p>
			Technical Knowledge and Understanding	<p>Know how to make freestanding structures stronger, stiffer and more stable.</p> <p>Know and use technical and sensory vocabulary relevant to the project.</p> <p>Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.</p> <p>Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The eatwell plate.</p> <p>Understand that different mechanisms produce different types of movement.</p> <p>Understand how simple 3-D textile products are made, using a template to create two identical shapes.</p> <p>Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.</p> <p>Explore and use sliders and levers.</p> <p>Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.</p> <p>Explore and use wheels, axles and axle holders.</p> <p>Distinguish between fixed and freely moving axles.</p>	<p>Know how to strengthen, stiffen and reinforce existing fabrics.</p> <p>Know how to use 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.</p> <p>Know and use relevant technical and sensory vocabulary appropriately.</p> <p>Understand how to securely join two pieces of fabric together.</p> <p>Understand the need for patterns and seam allowances.</p> <p>Understand and use lever and linkage mechanisms.</p> <p>Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.</p> <p>Distinguish between fixed and loose pivots.</p> <p>Develop and use knowledge of how to construct strong, stiff shell structures.</p> <p>Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.</p> <p>Apply their understanding of computing to program and control their products.</p>