



# St Barnabas

Church of England Primary Academy

A member of **CDARI**

**'Achieving great things through learning and growing together in a love-filled Christian family' 'That they shall have life, life in all**

**its fullness!' John 10:10**

## **Design and Technology Skills Progression-2022-23**

<b>EYFS</b>	<div><b>Expressive Arts and Design</b></div> <div>ELG: Creating with Materials</div> <div><ul style="list-style-type: none"><li>● Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function<ul style="list-style-type: none"><li>● Share their creations, explaining the process they have used</li></ul></li><li>● Make use of props and materials when role playing characters in narratives and stories.</li></ul></div> <div><b>Physical Development</b></div> <div>ELG Fine motor skills:</div> <div><ul style="list-style-type: none"><li>● Use a range of small tools, including scissors, paint brushes and cutlery<ul style="list-style-type: none"><li>● Begin to show accuracy and care when drawing.</li></ul></li></ul></div>
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Year 1	Design	Make	Evaluate	Technical knowledge	Food Technology
<ul style="list-style-type: none"> <li>Christmas Fair Project: Fire Engines - Moving Vehicles</li> <li>Cooking and nutrition - Preparing and combining food</li> <li>Structures - Baby Bear's Chair</li> </ul>	<ul style="list-style-type: none"> <li>Generating and communicating ideas using sketching and modelling.</li> <li>Learning about different types of structures, found in the natural world.</li> <li>Designing a vehicle that includes wheels, axles and axle holders, that when combined, will allow the wheels to move.</li> <li>Creating clearly labelled drawings that illustrate movement every day objects.</li> <li>Carry out research to inform what they will design and make.</li> </ul>	<ul style="list-style-type: none"> <li>Making a structure according to design criteria.</li> <li>Creating joints and structures from paper/card and tape.</li> <li>Building a strong and stiff structure by folding paper.</li> <li>Adapting mechanisms, when they do not work as they should to fit their vehicle design.</li> <li>To improve how they work after testing their vehicle.</li> <li>Tasting and evaluating different food combinations.</li> <li>Describing the appearance, smell and taste.</li> </ul>	<ul style="list-style-type: none"> <li>Exploring the features of structures.</li> <li>Comparing the stability of different shapes.</li> <li>Testing the strength of your own structures.</li> <li>Identifying the weakest part of a structure.</li> <li>Evaluating the strength, stiffness and stability of one's own structure.</li> <li>Testing wheel and axle mechanisms, identifying what stops the wheels from turning, and recognising that a wheel needs an axle in order to move.</li> </ul>	<ul style="list-style-type: none"> <li>To know that shapes and structures with wide, flat bases or legs are the most stable.</li> <li>To understand that the shape of a structure affects its strength.</li> <li>To know that materials can be manipulated to improve strength and stiffness.</li> <li>To know that a structure is something which has been formed or made from parts.</li> <li>To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move.</li> <li>To know that a</li> </ul>	<ul style="list-style-type: none"> <li>Group familiar food products e.g. fruit and vegetables.</li> <li>Cut and chop a range of ingredients.</li> <li>Work safely and hygienically.</li> <li>Know about the need for a variety of foods in a diet.</li> </ul>

	<ul style="list-style-type: none"> <li>• Design a breakfast dish based on simple criteria for a user and purpose.</li> </ul>	<ul style="list-style-type: none"> <li>• Suggesting information to be included on packaging.</li> </ul>		<p>'strong' structure is one which does not break easily.</p> <ul style="list-style-type: none"> <li>• To know that a 'stiff' structure or material is one which does not bend easily</li> <li>• To know that wheels need to be round to rotate and move.</li> <li>• To understand that for a wheel to move it must be attached to a rotating axle.</li> <li>• To know that an axle moves within an axle holder which is fixed to the vehicle or toy.</li> <li>• To know that the frame of a vehicle (chassis) needs to be balanced.</li> </ul>	
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Year 2	Design	Make	Evaluate	Technical knowledge	Food Technology
<ul style="list-style-type: none"> <li>• Cooking and nutrition - Healthy Eating - Christmas Fair Project - fruit kebabs</li> <li>• Textiles: Finger puppet</li> <li>• Structure: Wacky Windmills</li> </ul>	<ul style="list-style-type: none"> <li>• Using a template to create a design for a puppet</li> <li>• Design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>• Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</li> <li>• Learning the</li> </ul>	<ul style="list-style-type: none"> <li>• Chopping fruit and vegetables safely</li> <li>• Identifying if a food is a fruit or a vegetable.</li> <li>• Learning where and how fruits grow select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> <li>• Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their</li> </ul>	<ul style="list-style-type: none"> <li>• Tasting and evaluating different food combinations.</li> <li>• Describing appearance, smell and taste.</li> <li>• Suggesting information to be included on packaging.</li> <li>• Explore and evaluate a range of existing products.</li> <li>• Evaluate their ideas and products against design criteria</li> <li>• Reflecting on a finished product, explaining likes and dislikes.</li> <li>• Evaluating a windmill according to the</li> </ul>	<ul style="list-style-type: none"> <li>• Join materials in a variety of ways.</li> <li>• Decorate using a variety of techniques.</li> <li>• Show how to stiffen some materials</li> <li>• To know that 'joining technique' means connecting two pieces of material together.</li> <li>• To know that there are various temporary methods of joining fabric by using staples, glue or pins.</li> <li>• To understand that different techniques for joining materials</li> </ul>	<ul style="list-style-type: none"> <li>• Chop a range of ingredients.</li> <li>• Work safely and hygienically.</li> <li>• Know about the Eatwell Plate.</li> <li>• Understand where food comes from.</li> </ul>

	<p>importance of a clear design criteria.</p> <ul style="list-style-type: none"> <li>• Including individual preferences and requirements in a design.</li> </ul>	<p>characteristics</p> <ul style="list-style-type: none"> <li>• Cutting fabric neatly with scissors.</li> <li>• Using joining methods to decorate a puppet.</li> <li>• Sequencing the steps taken during construction.</li> <li>• Making stable structures from card, tape and glue.</li> <li>• Following instructions to cut and assemble the supporting structure of a windmill.</li> <li>• Making functioning turbines and axles which are assembled into a main supporting structure.</li> </ul>	<p>design criteria, testing whether the structure is strong and stable and altering it if it isn't.</p> <ul style="list-style-type: none"> <li>• Suggest points for improvements.</li> </ul>	<p>can be used for different purposes.</p> <ul style="list-style-type: none"> <li>• To understand that a template (or fabric pattern) is used to cut out the same shape multiple times.</li> <li>• To know that drawing a design idea is useful to see how an idea will look.</li> <li>• Know some ways of making structures stronger.</li> <li>• To make parts turn in a circle.</li> <li>• To understand that the shape of materials can be changed to improve the strength and stiffness of structures.</li> <li>• To understand that cylinders are</li> </ul>	
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				<p>a strong type of structure (e.g. the main shape used for windmills and lighthouses).</p> <ul style="list-style-type: none"><li>• To understand that axles are used in structures and mechanisms</li><li>• To begin to understand that different structures are used for different purposes.</li><li>• To know that a structure is something that has been made and put together.</li></ul>	
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Year 3	Design	Make	Evaluate	Technical knowledge	Food Technology
<ul style="list-style-type: none"> <li>Structures: Photo frames for Christmas Fair Project</li> <li>Cooking and nutrition-Food Technology - 'Lovely Lunches'</li> <li>Mechanisms: Moving storybook to retell a fable</li> </ul>	<ul style="list-style-type: none"> <li>Explaining how to adapt mechanisms, using bridges or guides to control the movement.</li> <li>Designing a moving story book for a given audience.</li> </ul>	<ul style="list-style-type: none"> <li>Following a design to create moving models that use levers and sliders</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.</li> <li>Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed.</li> <li>Reviewing the success of a product by testing it with its intended audience.</li> </ul>	<ul style="list-style-type: none"> <li>Prototype a product.</li> <li>Strengthen frames with diagonal struts.</li> <li>Measure and mark square section, strip and dowel accurately to 1cm.</li> <li>Use an increasingly appropriate technical vocabulary</li> <li>To know that a mechanism is the parts of an object that move together.</li> <li>To know that a slider mechanism moves an object.</li> <li>To know that bridges and guides are bits of</li> </ul>	<ul style="list-style-type: none"> <li>Follow instructions / recipes.</li> <li>Join and combine a range of ingredients.</li> <li>Begin to understand the food groups on the Eatwell Plate.</li> </ul>

				<p>card that purposefully restrict the movement of the slider object from side to side.</p> <ul style="list-style-type: none"><li>• To know that a slider mechanism has a slider, slots, guides</li></ul>	
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Year 4	Design	Make	Evaluate	Technical knowledge	Food Technology
<ul style="list-style-type: none"> <li>Christmas Fair Project: Seasonal stocking</li> <li>Alarms- Electronics</li> <li>Cooking and nutrition-Food technology: 'Be a Baker'</li> </ul>	<ul style="list-style-type: none"> <li>Consider aesthetic qualities of materials chosen.</li> <li>Use CAD where appropriate.</li> <li>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> </ul>	<ul style="list-style-type: none"> <li>Prepare pattern pieces as templates for their design.</li> <li>Select from techniques for different parts of the process.</li> </ul>	<ul style="list-style-type: none"> <li>Identify the strengths and weaknesses of their design ideas in relation to purpose / user.</li> <li>Consider and explain how the finished product could be improved.</li> <li>Investigate key events and individuals in design and technology.</li> <li>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> </ul>	<ul style="list-style-type: none"> <li>Understand seam allowance.</li> <li>Prototype a product.</li> <li>Sew on buttons and make loops.</li> <li>Incorporate a circuit into a model.</li> <li>Use electrical systems such as switches, bulbs and buzzers.</li> <li>Use ICT to control products.</li> <li>Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> </ul>	<ul style="list-style-type: none"> <li>Make healthy eating choices – use the Eatwell plate.</li> <li>Understand seasonality.</li> <li>Know where and how ingredients are reared and caught.</li> <li>Prepare and cook using different cooking techniques.</li> <li>Understand and apply the principles of a healthy and varied diet.</li> </ul>

Year 5	Design	Make	Evaluate	Technical knowledge	Food Technology
<ul style="list-style-type: none"> <li>Christmas Fair Project: Textiles Christmas themed cushions</li> <li>Air-powered products-</li> <li>Cooking &amp; Nutrition: Food from Other Cultures (Greece)</li> </ul>	<ul style="list-style-type: none"> <li>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> <li>Designing and making a template from an existing cushion and applying individual design criteria.</li> </ul>	<ul style="list-style-type: none"> <li>Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>Following design criteria to create a cushion</li> <li>Selecting and cutting fabrics with ease using fabric scissors.</li> <li>Threading needles with greater independence.</li> <li>Tying knots with greater independence.</li> <li>Sewing running and blanket stitch to join fabric.</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>Analysing and evaluating an existing product.</li> <li>Analysing whether changes in configuration positively or negatively affect an existing product.</li> <li>Peer evaluating a set of instructions to build a product</li> </ul>	<ul style="list-style-type: none"> <li>Create 3D textile products using pattern pieces.</li> <li>Understand pattern layout with textiles.</li> <li>Use electrical systems such as motors and switches.</li> <li>To know that series circuits only have one direction for the electricity to flow.</li> <li>To know when there is a break in a series circuit, all components turn off.</li> <li>To know that an electric motor converts electrical energy into rotational movement, causing the motor's axle to</li> </ul>	<ul style="list-style-type: none"> <li>Know where and how ingredients are grown and processed.combine a widening range of ingredients.</li> <li>Select and prepare foods for a particular purpose.</li> </ul>

		<ul style="list-style-type: none"> <li>Decorating fabric using appliqué.</li> <li>Completing design ideas with stuffing and sewing the edges (Cushions)</li> </ul>		<p>spin.</p> <ul style="list-style-type: none"> <li>To know a motorised product is one which uses a motor to function.</li> </ul>	
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Year 6	Design	Make	Evaluate	Technical knowledge	Food Technology
<ul style="list-style-type: none"> <li>Christmas Project: Cooking and nutrition; a savoury dish</li> <li>Structure: Building Bridges</li> <li>Structure/ Electrical systems: Fairgrounds- Programming and electronics</li> </ul>	<ul style="list-style-type: none"> <li>Designing a playground featuring a variety of different structures, giving careful consideration to how the structures will be used, considering effective and ineffective designs.</li> </ul>	<ul style="list-style-type: none"> <li>Following a recipe, including using the correct quantities of each ingredient.</li> <li>Adapting a recipe based on research.</li> <li>Working to a given timescale.</li> <li>Working safely and hygienically with independence</li> </ul>	<ul style="list-style-type: none"> <li>Evaluating a recipe, considering: taste, smell, texture and origin of the food group.</li> <li>Taste testing and scoring final products.</li> <li>Suggesting and writing up points of improvements when scoring others' dishes, and when evaluating their own throughout the planning, preparation and cooking process.</li> <li>Evaluating health and safety in production to minimise cross contamination.</li> </ul>	<ul style="list-style-type: none"> <li>To know that structures can be strengthened by manipulating materials and shapes.</li> <li>Designing a stable structure that is able to support weight.</li> <li>Creating a frame structure with a focus on triangulation.</li> <li>Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> <li>Apply their understanding of</li> </ul>	<ul style="list-style-type: none"> <li>Understand and apply the principles of a healthy and varied diet.</li> <li>Choose ingredients to support healthy eating choices when designing their food products.</li> <li>Prepare and cook a variety of mostly savoury dishes using a range of cooking techniques.</li> </ul>

			<ul style="list-style-type: none"><li>• Improving a design plan based on peer evaluation.</li><li>• Testing and adapting a design to improve it as it is developed.</li><li>• Identifying what makes a successful structure.</li></ul>	computing to program, monitor and control their products.	
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