

St Breock Primary School  
Design and Technology Skills Progression Map



# EYFS

Area of Learning	Three- and Four-Year Olds (FS1)	Reception (FS2)	ELG (end of FS2)
<b>Personal, Social and Emotional Development</b>	<ul style="list-style-type: none"> <li>Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen or one which is suggested to them.</li> </ul>		
<b>Physical Development</b>	<ul style="list-style-type: none"> <li>Use large-muscle movements to wave flags and streamers, paint and make marks.</li> <li>Choose the right resources to carry out their own plan.</li> <li>Use one-handed tools and equipment, for example, making snips in paper with scissors.</li> </ul>	<ul style="list-style-type: none"> <li>Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.</li> <li>Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.</li> </ul>	<ul style="list-style-type: none"> <li>Use a range of small tools, including scissors, paintbrushes and cutlery.</li> </ul>
<b>Understanding the World</b>	<ul style="list-style-type: none"> <li>Explore how things work.</li> </ul>		
<b>Expressive Arts and Design</b>	<ul style="list-style-type: none"> <li>Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.</li> <li>Explore different materials freely, in order to develop their ideas about how to use them and what to make.</li> <li>Develop their own ideas and then decide which materials to use to express them.</li> <li>Join different materials and explore different textures.</li> <li>Create closed shapes with continuous lines and begin to use these shapes to represent objects.</li> </ul>	<ul style="list-style-type: none"> <li>Explore, use and refine a variety of artistic effects to express their ideas and feelings.</li> <li>Return to and build on their previous learning, refining ideas and developing their ability to represent them.</li> <li>Create collaboratively, sharing ideas, resources and skills.</li> </ul>	<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.</li> <li>Share their creations, explaining the process they have used.</li> </ul>

# Designing

Designing	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
<b>Understanding contexts, users and purposes</b>	<p><b>Across KS1</b> pupils should:</p> <ul style="list-style-type: none"> <li>• Work confidently within a range of contexts such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment.</li> <li>• State what products they are designing and making.</li> <li>• Say whether their products are for themselves or other users.</li> <li>• Describe what their products are for.</li> <li>• Say how their products will work.</li> <li>• Say how they will make their products suitable for intended users.</li> <li>• Use simple design criteria to help develop their ideas.</li> </ul>	<p><b>Across KS2</b> pupils should:</p> <ul style="list-style-type: none"> <li>• Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment.</li> <li>• Describe the purpose of their products.</li> <li>• Indicate the design features of their products that will appeal to intended users.</li> <li>• Explain how particular parts of their products work.</li> </ul> <p>In <b>early KS2</b> pupils should also:</p> <ul style="list-style-type: none"> <li>• Gather information about the needs and wants of particular individuals and groups.</li> <li>• Develop their own design criteria and use these to inform their ideas.</li> </ul>	<p><b>Across KS2</b> pupils should:</p> <ul style="list-style-type: none"> <li>• Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment.</li> <li>• Describe the purpose of their products.</li> <li>• Indicate the design features of their products that will appeal to intended users.</li> <li>• Explain how particular parts of their products work.</li> </ul> <p>In <b>late KS2</b> pupils should also:</p> <ul style="list-style-type: none"> <li>• Carry out research, using surveys, interviews, questionnaires and web-based resources.</li> <li>• Identify the needs, wants, preferences and values of particular individuals and groups.</li> <li>• Develop a simple design specification to guide their thinking.</li> </ul>
<b>Generating, developing, modelling and communicating ideas.</b>	<p><b>Across KS1</b> pupils should:</p> <ul style="list-style-type: none"> <li>• Generate ideas by drawing on their own experiences.</li> <li>• Use knowledge of existing products to come up with ideas.</li> <li>• Develop and communicate ideas by talking and drawing.</li> <li>• Model ideas by exploring materials, components and construction kits and by making templates and mock-ups.</li> <li>• Use information and communication technology, where appropriate, to develop and communicate their ideas.</li> </ul>	<p><b>Across KS2</b> pupils should:</p> <ul style="list-style-type: none"> <li>• Share and clarify ideas through discussion.</li> <li>• Model their ideas using prototypes and pattern pieces.</li> <li>• Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas.</li> <li>• Use computer-aided design to develop and communicate their ideas.</li> </ul> <p>In <b>early KS2</b> pupils should also:</p> <ul style="list-style-type: none"> <li>• Generate realistic ideas, focusing on the needs of the user.</li> <li>• Make design decisions that take account of the availability of resources.</li> </ul>	<p><b>Across KS2</b> pupils should:</p> <ul style="list-style-type: none"> <li>• Share and clarify ideas through discussion.</li> <li>• Model their ideas using prototypes and pattern pieces.</li> <li>• Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas.</li> <li>• Use computer-aided design to develop and communicate their ideas.</li> </ul> <p>In <b>late KS2</b> pupils should also:</p> <ul style="list-style-type: none"> <li>• Generate innovative ideas, drawing on research.</li> <li>• Make design decisions, taking account of constraints such as time, resources and cost.</li> </ul>

# Making

Making	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
<b>Planning</b>	<p><b>Across KS1</b> pupils should:</p> <ul style="list-style-type: none"> <li>Plan by suggesting what to do next.</li> <li>Select from a range of tools and equipment, explaining their choices.</li> <li>Select from a range of materials and components according to their characteristics.</li> </ul>	<p><b>Across KS2</b> pupils should:</p> <ul style="list-style-type: none"> <li>Select tools and equipment suitable for the task.</li> <li>Explain their choice of tools and equipment in relation to the skills and techniques they will be using.</li> <li>Select materials and components suitable for the task.</li> <li>Explain their choice of materials and components according to functional properties and aesthetic qualities.</li> </ul> <p>In <b>early KS2</b> pupils should also:</p> <ul style="list-style-type: none"> <li>Order the main stages of making.</li> </ul>	<p><b>Across KS2</b> pupils should:</p> <ul style="list-style-type: none"> <li>Select tools and equipment suitable for the task.</li> <li>Explain their choice of tools and equipment in relation to the skills and techniques they will be using.</li> <li>Select materials and components suitable for the task.</li> <li>Explain their choice of materials and components according to functional properties and aesthetic qualities.</li> </ul> <p>In <b>late KS2</b> pupils should also:</p> <ul style="list-style-type: none"> <li>Produce appropriate lists of tools, equipment and materials that they need.</li> <li>Formulate step-by-step plans as a guide to making.</li> </ul>
<b>Practical skills and techniques</b>	<p><b>Across KS1</b> pupils should:</p> <ul style="list-style-type: none"> <li>Follow procedures for safety and hygiene.</li> <li>Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components.</li> <li>Measure, mark out, cut and shape materials and components.</li> <li>Assemble, join and combine materials and components.</li> <li>Use finishing techniques, including those from art and design.</li> </ul>	<p><b>Across KS2</b> pupils should:</p> <ul style="list-style-type: none"> <li>Follow procedures for safety and hygiene.</li> <li>Use a wider range of materials and components that KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components.</li> </ul> <p>In <b>early KS2</b> pupils should also:</p> <ul style="list-style-type: none"> <li>Measure, mark out, cut and shape materials and components with some accuracy.</li> <li>Assemble, join and combine materials and components with some accuracy.</li> <li>Apply a range of finishing techniques, including those from art and design, with some accuracy.</li> </ul>	<p><b>Across KS2</b> pupils should:</p> <ul style="list-style-type: none"> <li>Follow procedures for safety and hygiene.</li> <li>Use a wider range of materials and components that KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components.</li> </ul> <p>In <b>late KS2</b> pupils should also:</p> <ul style="list-style-type: none"> <li>Accurately measure, mark out, cut and shape materials and components.</li> <li>Accurately assemble, join and combine materials and components.</li> <li>Accurately apply a range of finishing techniques, including those from art and design.</li> <li>Use techniques that involve a number of steps.</li> <li>Demonstrate resourcefulness when tackling practical problems.</li> </ul>

# Evaluating

Evaluating	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
<b>Own ideas and products</b>	<p><b>Across KS1</b> pupils should:</p> <ul style="list-style-type: none"> <li>• Talk about their design ideas and that they are making.</li> <li>• Make simple judgements about their products and ideas against design criteria.</li> <li>• Suggest how their products could be improved.</li> </ul>	<p><b>Across KS2</b> pupils should:</p> <ul style="list-style-type: none"> <li>• Identify the strengths and areas for development in their ideas and products.</li> <li>• Consider the views of others, including intended users, to improve their work.</li> </ul> <p>In <b>early KS2</b> pupils should also:</p> <ul style="list-style-type: none"> <li>• Refer to their design criteria as they design and make.</li> <li>• Use their design criteria to evaluate their completed products.</li> </ul>	<p><b>Across KS2</b> pupils should:</p> <ul style="list-style-type: none"> <li>• Identify the strengths and areas for development in their ideas and products.</li> <li>• Consider the views of others, including intended users, to improve their work.</li> </ul> <p>In <b>late KS2</b> pupils should also:</p> <ul style="list-style-type: none"> <li>• Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make.</li> <li>• Evaluate their ideas and products against their original design specification.</li> </ul>
<b>Existing products</b>	<p><b>Across KS1</b> pupils should explore:</p> <ul style="list-style-type: none"> <li>• What products are.</li> <li>• Who products are for.</li> <li>• What products are for.</li> <li>• How products work.</li> <li>• How products are used.</li> <li>• Where products might be used.</li> <li>• What materials products are made from.</li> <li>• What they like and dislike about products.</li> </ul>	<p><b>Across KS2</b> pupils should investigate and analyse:</p> <ul style="list-style-type: none"> <li>• How well products have been designed.</li> <li>• How well products have been made.</li> <li>• Why materials have been chosen.</li> <li>• What methods of construction have been used.</li> <li>• How well products work.</li> <li>• How well products achieve their purposes.</li> <li>• How well products meet user needs and wants.</li> </ul> <p>In <b>early KS2</b> pupils should also investigate and analyse:</p> <ul style="list-style-type: none"> <li>• Who designed and made the products.</li> <li>• Where products were designed and made.</li> <li>• When products were designed and made.</li> <li>• Whether products can be recycled or reused.</li> </ul>	<p><b>Across KS2</b> pupils should investigate and analyse:</p> <ul style="list-style-type: none"> <li>• How well products have been designed.</li> <li>• How well products have been made.</li> <li>• Why materials have been chosen.</li> <li>• What methods of construction have been used.</li> <li>• How well products work.</li> <li>• How well products achieve their purposes.</li> <li>• How well products meet user needs and wants.</li> </ul> <p>In <b>late KS2</b> pupils should also investigate and analyse:</p> <ul style="list-style-type: none"> <li>• How much products cost to make.</li> <li>• How innovative products are.</li> <li>• How sustainable the materials in products are.</li> <li>• What impact products have beyond their intended purpose.</li> </ul>
<b>Key events and individuals</b>	Not a requirement in KS1	<p>Across <b>KS2</b> pupils should know:</p> <ul style="list-style-type: none"> <li>• About inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.</li> </ul>	<p>Across <b>KS2</b> pupils should know:</p> <ul style="list-style-type: none"> <li>• About inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.</li> </ul>

# Technical Knowledge

Technical Knowledge	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
<b>Making products work</b>	<p>Across <b>KS1</b> pupils should know:</p> <ul style="list-style-type: none"> <li>• About the simple working characteristics of materials and components.</li> <li>• About the movement of simple mechanisms such as levers, sliders, wheels and axles.</li> <li>• How freestanding structures can be made stronger, stiffer and more stable.</li> <li>• That a 3-D textiles product can be assembled from two identical fabric shapes.</li> <li>• That food ingredients should be combined according to their sensory characteristics.</li> <li>• The correct technical vocabulary for the projects they are undertaking.</li> </ul>	<p>Across <b>KS2</b> pupils should know:</p> <ul style="list-style-type: none"> <li>• How to use learning from science to help design and make products that work.</li> <li>• How to use learning from mathematics to help design and make products that work.</li> <li>• That materials have both functional properties and aesthetic qualities.</li> <li>• That materials can be combined and mixed to create more useful characteristics.</li> <li>• That mechanical and electrical systems have an input, process and output.</li> <li>• The correct technical vocabulary for the projects they are undertaking.</li> </ul> <p>In <b>early KS2</b> pupils should also know:</p> <ul style="list-style-type: none"> <li>• How mechanical systems such as levers and linkages or pneumatic systems create movement.</li> <li>• How simple electrical circuits and components can be used to create functional products.</li> <li>• How to make strong, stiff shell structures.</li> <li>• That a single fabric shape can be used to make a 3-D textiles product.</li> <li>• That food ingredients can be fresh, pre-cooked and processed.</li> </ul>	<p>Across <b>KS2</b> pupils should know:</p> <ul style="list-style-type: none"> <li>• How to use learning from science to help design and make products that work.</li> <li>• How to use learning from mathematics to help design and make products that work.</li> <li>• That materials have both functional properties and aesthetic qualities.</li> <li>• That materials can be combined and mixed to create more useful characteristics.</li> <li>• That mechanical and electrical systems have an input, process and output.</li> <li>• The correct technical vocabulary for the projects they are undertaking.</li> </ul> <p>In <b>late KS2</b> pupils should also know:</p> <ul style="list-style-type: none"> <li>• How mechanical systems such as cams or pulleys or gears create movement.</li> <li>• How more complex electrical circuits and components can be used to create functional products.</li> <li>• How to program a computer to monitor changes in the environment and control their products.</li> <li>• How to reinforce and strengthen a 3-D framework.</li> <li>• That a 3-D textiles product can be made from a combination of fabric shapes.</li> <li>• That a recipe can be adapted by adding or substituting one or more ingredients.</li> </ul>

# Cooking and Nutrition

Cooking and Nutrition	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
<b>Where food comes from</b>	<p><b>Across KS1</b> pupils should know:</p> <ul style="list-style-type: none"> <li>• That all food comes from plants or animals.</li> <li>• That food has to be farmed, grown elsewhere (e.g. home) or caught.</li> </ul>	<p><b>Across KS2</b> pupils should know:</p> <ul style="list-style-type: none"> <li>• That a recipe can be adapted by adding or substituting one or more ingredients.</li> <li>• 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.</li> </ul>	<p><b>Across KS2</b> pupils should know:</p> <ul style="list-style-type: none"> <li>• That a recipe can be adapted by adding or substituting one or more ingredients.</li> <li>• 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.</li> </ul> <p>In <b>late KS2</b> pupils should also know:</p> <ul style="list-style-type: none"> <li>• That seasons may affect the food available.</li> <li>• How food is processed into ingredients that can be eaten or used in cooking.</li> </ul>
<b>Food preparation, cooking and nutrition</b>	<p><b>Across KS1</b> pupils should know:</p> <ul style="list-style-type: none"> <li>• How to name and sort foods into the five groups in the Eatwell Guide.</li> <li>• That everyone should eat at least five portions of fruit and vegetables every day.</li> <li>• How to prepare simple dishes safely and hygienically, without using a heat source.</li> <li>• How to use techniques such as cutting, peeling and grating.</li> </ul>	<p><b>Across KS2</b> pupils should know:</p> <ul style="list-style-type: none"> <li>• How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</li> <li>• How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</li> </ul> <p>In <b>early KS2</b> pupils should also know:</p> <ul style="list-style-type: none"> <li>• That a healthy diet is made up from a variety and balanced of different food and drink, as depicted in the Eatwell Guide.</li> <li>• That to be active and healthy, food and drink are needed to provide energy for the body.</li> </ul>	<p><b>Across KS2</b> pupils should know:</p> <ul style="list-style-type: none"> <li>• How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</li> <li>• How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</li> </ul> <p>In <b>late KS2</b> pupils should also know:</p> <ul style="list-style-type: none"> <li>• That recipes can be adapted to change the appearance, taste, texture and aroma.</li> <li>• That different food and drink contain different substances – nutrients, water and fibre – that are needed for health.</li> </ul>