



ST JOHN'S C OF E PRIMARY SCHOOL

DESIGN AND TECHNOLOGY PROGRESSION OVERVIEW

KS1	<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 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. <p>Technical knowledge</p> <ul style="list-style-type: none">• 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. <p>Cooking and Nutrition</p> <ul style="list-style-type: none">• Use the basic principles of a healthy and varied diet to prepare dishes.• Understand where food comes from.
KS2	<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



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	<p>purpose, aimed at particular individuals or groups.</p> <ul style="list-style-type: none"> • 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. <p>Technical knowledge</p> <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). • 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. <p>Cooking and Nutrition</p> <ul style="list-style-type: none"> • 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. 								
	Developing	Planning a	Working	Mechanisms	Stiff and	Mouldable	Food	Textiles	Evaluating a



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	Ideas	Design	with Tools, Equipment and materials	and Electrical components	Flexible sheet materials	Materials			Design
Year 1	To think of and explain own ideas.	Use words and pictures to plan a design.	Work with simple tools. <i>Children use scissors.</i>	Covered in Y2.	Measure, join or adapt materials to create a strong model or structure. <i>Make a strong model or structure using different materials.</i>	Make a strong model or structure using different materials. <i>Children make salt dough and model.</i> Measure, join or adapt materials to create a strong model or structure. <i>Children roll clay to make a strengthened object.</i>	Cut food safely, using clean tools, hands and surfaces.	Covered in Y2.	Describe how things you and others have made work.
Year 2	Think of ideas by investigating current	Plan how to make a design by choosing	Join materials in different ways.	Make a product which moves (e.g. the	Covered in Y1.	Covered in Y1.	Describe the properties of the ingredients	Make a product by gluing different	Say what went well and what you would



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	products.	suitable tools, materials and techniques. Children draw diagrams or write instructions.	<i>Children glue wooden pieces together and use dowel and peg to connect pieces.</i>	head on my toy animal moves from side to side). Join materials as part of a moving mechanism. <i>Children use split pins to make moving parts.</i>			you are using.	textiles together. Children use different glues to stick materials together. Explain your choice of textiles, and join, measure and cut them to make a product.	improve.
Year 3	Show how a design meets a range of needs. Children create own success criteria for design.	Put together a step-by-step plan of how to create a design, using accurate diagrams and labels.	Use equipment and tools accurately. <i>Children use a steel rule and hacksaw.</i>	Design a product which uses electrical components in a simple circuit. <i>Children use bulbs and buzzers.</i>	Work accurately to make cuts and holes. <i>Use a hacksaw to cut wood and a drill to create holes for the joins.</i>	Use a range of techniques to shape, mould and finish a product. Refine or improve your product by remoulding	Explain your choice of ingredients and explain how you combine them.	Covered in Yr4.	Identify improvements you made following reflections on your design during the making process.

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		Children write step-by-step instructions.				and reshaping materials. <i>Children use tools to create patterns on clay.</i>			
Year 4	Take a user's view into account when designing. Children think about their target audience.	Come up with a range of ideas and identify good points and drawbacks of each.	Use a range of tools and equipment to ensure a high quality finish. Children use sandpaper to smooth edges and a glue gun for joints.	Incorporate a switch into a design. Consider hydraulics and pneumatics. Children use switches as part of a circuit and syringes with water to make parts move.	Measure and join materials accurately to ensure precision and that a product is as strong as possible.	Covered in Y3.	Present your product to a high standard, showing a good understanding of hygiene and safety.	Choose textiles based on appearance and quality, and join them in different ways. <i>Children use buttons to join materials.</i>	Solve problems as you go to ensure appearance and function meets the original design criteria.
Year 5	Develop ideas by using a range of resources of information,	Work with constraints (aesthetic and economic) when	Work with precision and adapt techniques and tools as	Use different types of circuit in a design. Combine electrical and	Hide joints to make a product that is aesthetically pleasing.	Covered in Y6.	Know how food should be stored and give reasons.	Covered in Y6.	Test and evaluate your product to show it is fit for purpose.



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	including market research. Include cultural and societal influences in a design. Children interview target audience.	planning a design.	necessary. <i>Children introduced to bigger tools such as a jigsaw.</i>	mechanical components. <i>Children use a cam mechanism to make a toy move plus a parallel circuit with a buzzer.</i>	<i>Glue MDF, hiding joins.</i>				
Year 6	As above.	As above.	As above.	As above.	As above.	Show how your choice of materials and moulding techniques meet the design criteria.	As above.	Explain how you could improve your product even further to be worthy of being sold.	As above.