



'Life in all its fullness'
John 10:10

Christ Church C.E.(VC) Primary School

Design and Technology Long Term Plan Year A 2024/25 Year B 2023/24

Design and Technology at Christ Church School

At Christ Church School, we want children to be able to make the most of their imagination and creativity. We want them to be resourceful, enterprising and innovative problem solvers, able to take risks whilst still working within a brief. Design and technology (DT) provides an opportunity for children to combine these skills with knowledge and understanding in order to create quality products. Children will have opportunities to experience creating products using a range of different materials and tools. Design and Technology also shares skills with a wide range of subjects such as literacy, mathematics, science, art, PSHE and computing and is a really practical way to practise and reinforce these skills.

Key Stage 1

Structures



Food



Textiles



Mechanisms



Key Stage 2

Mechanical Systems



Textiles



Structures



Food



Electrical Systems



Structure of the units

Design

- Children research and design purposeful, functional, appealing products for themselves and other users based on design criteria, communicating their ideas in sketchbooks, verbally presenting ideas or by creating a mock-up.

Make

- We want children to enjoy the designing and making process. They will make their own decisions about the shape, function and aesthetic of their product as well as selecting the tools and materials that they will need to create their product from their design.

Evaluate

- As part of their initial research, children explore and evaluate a range of existing products and then evaluate their own designs against these products and the brief. Once their product is made, they will learn to evaluate and improve their products, so that they produce a final design that is functional and that they are proud of.

SEND

Children with SEND will experience the full range of DT learning experiences. Modelling, demonstration and pictorial instructions will support their understanding. Some children may need some additional support from an adult for some of the practical parts of their projects, but will complete as much as they can themselves. All children will have opportunities to talk about their designs, including talking through their design process and their evaluations. Children will be supported to record their work through discussion, vocabulary mats and sentence stems.

Curriculum Links

Science: Nutrition – Animals, including humans

Science: Electricity (Upper KS2)

Art: Design/sketchbooks. Creative crafts (Spring, Year A) Sculpture (Spring, Year B)







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Key Stage 1

National Curriculum	<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 their 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>Structures</p> 	<p>Food</p> 	<p>Textiles</p> 	<p>Mechanisms</p> 
	<p>Technical knowledge</p> <ul style="list-style-type: none"> Build structures, exploring how they can be made stronger, stiffer and more stable 	<p>Technical knowledge</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. 	<p>Technical knowledge</p>	<p>Technical knowledge</p> <ul style="list-style-type: none"> Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.



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Key Stage 2



National Curriculum	<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 purpose, aimed at particular individuals or groups 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>Mechanical Systems</p> 	<p>Textiles</p> 	<p>Structures</p> 	<p>Food</p> 	<p>Electrical Systems</p> 
	<p>Technical knowledge</p> <ul style="list-style-type: none"> Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] Apply their understanding of computing to program, monitor and control their products. 	<p>Technical knowledge</p>	<p>Technical knowledge</p> <ul style="list-style-type: none"> Apply their understanding of how to strengthen, stiffen and reinforce more complex structures 	<p>Technical knowledge</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. 	<p>Technical knowledge</p> <ul style="list-style-type: none"> Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]



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1	Topic 1	Topic 2
Topic	<p style="text-align: center;">Structures</p> 	<p style="text-align: center;">Food</p> 
Overview	<p>Freestanding structures. Design, make and evaluate structures. Make structures stronger, stiffer and more stable.</p>	<p>Find out where food comes from, what food is healthy and design and make a healthy meal or snack.</p>
Year A	<p>Freestanding structures</p> <p>D&T Association – Whose Home? STEM – Be a Designer STEM 3 little pigs activity brief</p> <p>Make model homes using basic constructional skills. Use materials to make the freestanding structures stronger, stiffer and more stable, together with use of appropriate joining techniques. Den Day.</p>	<p>Healthy and varied diet</p> <p>NHS Change 4 Life – Healthy lunchbox / Food Detectives toolkit CBeebies – Gardening for Kids (video and activities)</p> <p>Design, make and evaluate a recipe for a healthy lunchbox. Know how vegetables are grown and grow cress or vegetables.</p>
Year B	<p>Freestanding structures</p> <p>D&T Association – Chairs for Three Bears STEM Goldilocks activity brief</p> <p>Explore chairs, developing practical skills and a designing and making a new chair for Baby Bear.</p>	<p>Healthy and varied diet</p> <p>D&T Association – Fantastic fruit</p> <p>Identify and describe different fruits before planning to make a fruit dish using different ingredients. An emphasis on healthy eating and hygiene in preparing fruits. Grow strawberries or other fruit or vegetable.</p>



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2	Topic 1	Topic 2
Topic	<p>Textiles</p> 	<p>Mechanisms</p> 
Overview	<p>Use templates and joining techniques to design, make and evaluate functional and appealing products using textiles.</p>	<p>Design, make and evaluate products with simple mechanisms that move / that have moving parts.</p>
Year A	<p>Templates and joining techniques</p> <p>D&T Association – Puppets Mark out, cut and join pieces of fabric to make a glove puppet. Use a range of joining techniques and fabrics.</p>	<p>Wheels and Axels</p> <p>D&T Association – Let's look at vehicles STEM – Roly Poly Step by step approach to creating moving vehicles involving fixed and moving axles and wheels. Or STEM – Brompton Bicycles Design, create and evaluate a bicycle or a bicycle accessory</p>
Year B	<p>Templates and joining techniques</p> <p>D&T Association – Design a sun hat for Barnaby Bear Design and make a special sunhat for Barnaby Bear that will keep him cool in the hot sun but will also keep insects at bay.</p>	<p>Sliders and Levers</p> <p>D&T Association – Moving Pictures Make simple sliders and levers to create a mechanism that makes things move. Investigate mechanisms in everyday objects and design and make a moving model to illustrate a story or as a card or display. Or STEM – Levers, wheels and axels Design an aircraft and think hard about how to create a moving propeller or a landing gear, before creating a final product.</p>



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3	Topic 1	Topic 2
Topic	<p align="center">Structures</p> 	<p align="center">Mechanical systems</p> 
Overview	<p>Design, make and evaluate structures for a purpose. Make structures stronger, stiffer and more stable.</p>	<p>Design, make and evaluate products with moving parts, working within a design brief.</p>
Year A	<p>Bridge structures</p> <p>STEM – Bridges and structures STEM – Bridge bonanza (video) Design and build bridges, then test them to see how much weight they can hold.</p>	<p>Levers and Linkages</p> <p>D&T Association – Moving History Book Produce a whole class, interactive museum guide book including levers and linkages to include moving parts. Or STEM – Catapult (video) Use levers to design, build and test a catapult.</p>
Year B	<p>Shell structures</p> <p>D&T Association – Banish the broken biscuits! Food packaging project: design and make the packaging for a fragile food product exploring the relationship between the shape and strength of shell structures.</p>	<p>Pneumatics</p> <p>D&T Association – Mighty mascots Use pneumatics to design and make a mascot suitable for an opening celebration of an event.</p>



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4	Topic 1	Topic 2
Topic	<p align="center">Electrical Systems</p> 	<p align="center">Food</p> 
Overview	<p>Children learn about switches and circuits. They work to a brief to design and make a product which are powered and controlled by electrical systems.</p>	<p>Research existing products to include personal/ cultural preferences, ensure a healthy diet, meet dietary needs and the availability of locally sourced/seasonal/organic ingredients. Design and make you own dish.</p>
Year A	<p>Simple Circuits and Switches</p> <p>D&T Association – Developing handmade switches Investigate different ways that switches work and incorporate these into circuit designs. Develop an understanding of simple electrical control through the designing and making of the alarm system</p>	<p>Celebrating culture and seasonality</p> <p>D&T Association – Soups Jamie Oliver bread recipe Preparing and cooking soups using seasonal vegetables. Optional - Bake bread to eat with the soup.</p>
Year B	<p>Simple Circuits and Switches</p> <p>D&T Association – Alarming Vehicles Investigate different ways that switches work and incorporate these into circuit designs. Develop an understanding of simple electrical control through the designing and making of the alarm system.</p>	<p>Healthy and varied diet</p> <p>D&T Association – Dips and dippers Jamie Oliver flat bread recipe Investigate healthy eating and ways of processing food through designing and making healthy dips and dippers for a party. Optional - Bake bread to eat with the soup.</p>



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5	Topic 1	Topic 2
Topic	<p>Textiles</p> 	<p>Mechanical systems</p> 
Overview	<p>Investigate, analyse and evaluate a range of existing products which have been produced by combining fabric shapes. Investigate work by designers and their impact on fabrics and products.</p>	<p>Design, make and evaluate products with moving parts, powered by a motor. Understand how the mechanisms work, evaluate and adjust where needed to improve the function of the product.</p>
Year A	<p>Combining different fabrics (+ circuits)</p> <p>STEM – Sewn Circuits </p> <p>Construct a working and wearable circuit using fabrics and conductive thread and basic stitching techniques. Experiment with building different kinds of circuits and understand how electricity flows through a circuit.</p>	<p>Pulleys or gears?</p> <p>D&T Association – Gears and pulleys</p> <p>Children use Lego motion construction kits, learn how to use gears, pulleys and motors make a moving product.</p>
Year B	<p>Combining different fabrics</p> <p>D&T Association – Designing with fabric</p> <p>Learn different stiches and ways of joining fabrics together. Design and make a useful product, for example a wallet or mobile phone case.</p>	<p>Axels (+ circuits)</p> <p>STEM – Controllable vehicles </p> <p>D&T Association – Wheels</p> <p>Construct and make a moving toy vehicle with fixed axels. It will be able to move powered by a motor and a circuit.</p>