



CHJS Curriculum Map for ____DT____



Let your light shine (Matthew 5:16) In Design and Technology, children are encouraged to let their light shine by taking delight in developing their God-given creativity and imagination of his wonderful world. By appreciating the wonder of God's creation, children know how to make positive changes to the global community-Understand how key events and individuals have helped shape the world. They are also encouraged to make beneficial changes within their classroom by sharing their knowledge with their peers and supporting each other with their learning. Pupils design and make products that solve real and relevant problems that reflect God's creativity within a variety of contexts, considering their own and others' needs, wants and values. Pupils learn how to take risks, becoming resourceful, innovative and enterprising. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world that God created.

Substantive Knowledge	Year 3/4 Cycle 2	Year 3/4 Cycle 1	Year 5	Year 6
Designing	<p>(With support)</p> <ul style="list-style-type: none"> -Describe the purpose of their products -Indicate the design features of their products that will appeal to intended users. -Explain how particular parts of their product works. -Share and clarify ideas through discussion. -Model their ideas using prototypes and pattern pieces. -Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. <ul style="list-style-type: none"> -Gather information about the needs and wants particular individuals and groups. -Develop their own design criteria and use these to inform their ideas. -Generate realistic ideas focussing on the needs of the user. -Make design decisions that take account of the availability of resources. 	<p>(With occasional support)</p> <ul style="list-style-type: none"> -Describe the purpose of their products -Indicate the design features of their products that will appeal to intended users. -Explain how particular parts of their product works. -Share and clarify ideas through discussion. -Model their ideas using prototypes and pattern pieces. -Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. <ul style="list-style-type: none"> -Gather information about the needs and wants particular individuals and groups. -Develop their own design criteria and use these to inform their ideas. -Generate realistic ideas focussing on the needs of the user. -Make design decisions that take account of the availability of resources. 	<p>(With increasing independence)</p> <ul style="list-style-type: none"> -Describe the purpose of their products -Indicate the design features of their products that will appeal to intended users. -Explain how particular parts of their product works. -Share and clarify ideas through discussion. -Model their ideas using prototypes and pattern pieces. -Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. <ul style="list-style-type: none"> -Carry out research, using surveys, interviews, questionnaires and web-based resources. -Identify the needs, wants, preferences and values of particular individuals and groups. -Develop a simple design specification to guide their thinking. -Generate innovative ideas, drawing on research 	<p>(Independently)</p> <ul style="list-style-type: none"> -Describe the purpose of their products -Indicate the design features of their products that will appeal to intended users. - Explain how particular parts of their product works. -Share and clarify ideas through discussion. -Model their ideas using prototypes and pattern pieces. -Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. -Use computer-aided design to develop and communicate their ideas. <ul style="list-style-type: none"> -Carry out research, using surveys, interviews, questionnaires and web-based resources. -Identify the needs, wants, preferences and values of particular individuals and groups. -Develop a simple design specification to guide their thinking. -Generate innovative ideas, drawing on research

			-Make design decisions, taking account of constraints such as time, resources and cost.	-Make design decisions, taking account of constraints such as time, resources and cost.
Making	<p>(With support)</p> <ul style="list-style-type: none"> -Select tools and equipment suitable for the task. -Select materials and components suitable for the task. -Explain their choice of materials and components according to functional properties and aesthetic qualities. -Follow procedures for safety and hygiene. <p>-Order the main stages of making.</p> <p>-Measure, mark out, cut and shape materials and components with some accuracy.</p> <p>-Assemble, join and combine materials and components with some accuracy.</p> <p>-Apply a range of finishing techniques, including those from art and design, with some accuracy.</p>	<p>(With occasional support)</p> <ul style="list-style-type: none"> -Select tools and equipment suitable for the task. -Select materials and components suitable for the task. -Explain their choice of materials and components according to functional properties and aesthetic qualities. -Follow procedures for safety and hygiene. <p>-Order the main stages of making.</p> <p>-Measure, mark out, cut and shape materials and components with some accuracy.</p> <p>-Assemble, join and combine materials and components with some accuracy.</p> <p>-Apply a range of finishing techniques, including those from art and design, with some accuracy.</p>	<p>(With increasing independence)</p> <ul style="list-style-type: none"> -Select tools and equipment suitable for the task. -Select materials and components suitable for the task. -Explain their choice of materials and components according to functional properties and aesthetic qualities. -Follow procedures for safety and hygiene. <p>-Produce appropriate lists of tools, equipment and materials that they need.</p> <p>-Formulate step-by-step plans as a guide to making.</p> <p>accurately measure, mark out, cut and shape materials and components.</p> <p>-Accurately assemble, join and combine materials and components.</p> <p>-Accurately apply a range of finishing techniques, including those from art and design.</p> <ul style="list-style-type: none"> • use techniques that involve a number of steps. • demonstrate resourcefulness when tackling practical problems. 	<p>(Independently)</p> <ul style="list-style-type: none"> -Select tools and equipment suitable for the task. -Select materials and components suitable for the task. -Explain their choice of materials and components according to functional properties and aesthetic qualities. -Follow procedures for safety and hygiene. <p>-Produce appropriate lists of tools, equipment and materials that they need.</p> <p>-Formulate step-by-step plans as a guide to making.</p> <p>accurately measure, mark out, cut and shape materials and components.</p> <p>-Accurately assemble, join and combine materials and components.</p> <p>-Accurately apply a range of finishing techniques, including those from art and design.</p> <ul style="list-style-type: none"> • use techniques that involve a number of steps. • demonstrate resourcefulness when tackling practical problems.

Evaluating	<p>(With support)</p> <p>-Identify the strengths and areas for development in their ideas and products.</p> <p>-Consider the views of others, including intended users, to improve their work.</p> <p>-Investigate and analyse. Including:</p> <ul style="list-style-type: none"> • how well products have been designed. • how well products have been made. • why materials have been chosen. • what methods of construction have been used. • how well products work. • how well products achieve their purposes. • how well products meet user needs and wants. • who designed and made the products. • where products were designed and made. • when products were designed and made. • whether products can be recycled or reused. <p>-Refer to their design criteria as they design and make.</p> <p>-Use their design criteria to evaluate their completed products.</p>	<p>(With occasional support)</p> <p>-Identify the strengths and areas for development in their ideas and products.</p> <p>-Consider the views of others, including intended users, to improve their work.</p> <p>-Investigate and analyse. Including:</p> <ul style="list-style-type: none"> • how well products have been designed. • how well products have been made. • why materials have been chosen. • what methods of construction have been used. • how well products work. • how well products achieve their purposes. • how well products meet user needs and wants. • who designed and made the products. • where products were designed and made. • when products were designed and made. • whether products can be recycled or reused. <p>-Refer to their design criteria as they design and make.</p> <p>-Use their design criteria to evaluate their completed products.</p>	<p>(With increasing independence)</p> <p>-Identify the strengths and areas for development in their ideas and products.</p> <p>-Consider the views of others, including intended users, to improve their work.</p> <p>-Investigate and analyse. Including:</p> <ul style="list-style-type: none"> • how well products have been designed. • how well products have been made. • why materials have been chosen. • what methods of construction have been used. • how well products work. • how well products achieve their purposes. • how well products meet user needs and wants. • how much products cost to make. • how innovative products are. • how sustainable the materials in products are. • what impact products have beyond their intended purpose. <p>-Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make.</p> <p>-Evaluate their ideas and products against their original design specification.</p>	<p>(Independently)</p> <p>-Identify the strengths and areas for development in their ideas and products.</p> <p>-Consider the views of others, including intended users, to improve their work.</p> <p>-Investigate and analyse. Including:</p> <ul style="list-style-type: none"> • how well products have been designed. • how well products have been made. • why materials have been chosen. • what methods of construction have been used. • how well products work. • how well products achieve their purposes. • how well products meet user needs and wants. • how much products cost to make. • how innovative products are. • how sustainable the materials in products are. • what impact products have beyond their intended purpose. <p>-Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make.</p> <p>-Evaluate their ideas and products against their original design specification.</p>
Key events and individuals	-About inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.	-About inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.	-About inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.	-About inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.

Disciplinary Knowledge	Year 3/4 Cycle 2	Year 3/4 Cycle 1	Year 5	Year 6
Mechanisms	<ul style="list-style-type: none"> -Cut, score materials with increasing accuracy and safely by selecting appropriate tools. -Measure and mark out to the nearest cm with improved accuracy. -Know how mechanical systems such as levers and linkages or pneumatic systems create movement. -Create products with moving mechanisms e.g. sliders or levers. -Apply appropriate cutting and shaping techniques, including cuts inside the perimeter such as slots or cut-outs. 		<ul style="list-style-type: none"> -Cut, score materials with accuracy and safely by selecting appropriate tools. -Measure and mark out to the nearest mm with improved accuracy. -Know mechanical systems such as cams or pulleys or gears create movement. -Convert rotary motion to linear using cams. -Cut, score, materials with increasing precision. -Refine the finish with appropriate tools such as sanding wood or a more precise scissor cut after roughly cutting out. 	
Textiles	<ul style="list-style-type: none"> -Join textiles using appropriate methods including running stitch and glue. -Cut out textile shapes using templates. -Attach decorative objects such as beads, felt or feathers. 		<ul style="list-style-type: none"> -Use the qualities of the fabrics to create suitable visual and tactile effects in the decoration. -Create objects that need a seam allowance e.g. a cushion. -Join textiles with a combination of stitching techniques such as running stitch, backstitch for seams etc. cut, pin, shape fabric. 	
Structures		<ul style="list-style-type: none"> -Assemble, join and combine materials with some degree of accuracy. -Measure and mark out to the nearest cm with improved accuracy. -Know how to make strong, stiff shell structures. -Begin to use different and appropriate finishing techniques to improve the appearance of a product. 		<ul style="list-style-type: none"> --Assemble, join and combine materials with some degree of accuracy. -Measure and mark out to the nearest mm with improved accuracy. -Know how to reinforce and strengthen a 3D framework. -Use different and appropriate finishing techniques to improve the appearance of a product.

Electrical Systems and Control		<ul style="list-style-type: none"> -Know simple electrical circuits and components can be used to create functional products. -Create circuits using electronic elements that need a number of components. 		<ul style="list-style-type: none"> -Know how to program a computer to monitor changes in the environment and control their products. -Write code to control and monitor models or products.
Food Technology	<ul style="list-style-type: none"> -Prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. -Know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell plate. -Know that to be active and healthy, food and drink are needed to provide energy for the body. -Know that food ingredients can be fresh, pre-cooked and processed. 		<ul style="list-style-type: none"> -Prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. -Adapt recipes to change the appearance, taste, texture and aroma by adding or substituting one or more ingredients. -Know that different food and drink contain different substances –nutrients, water and fibre – that are needed for health. 	
	<ul style="list-style-type: none"> -Measure ingredients with support. -Use a range of techniques such as peeling, chopping, slicing and grating. 	<ul style="list-style-type: none"> -Measure ingredients with increasing accuracy. -Use a range of techniques such as chopping, slicing, mixing and spreading. 	<ul style="list-style-type: none"> -Measure ingredients to the nearest 10g/ml. -Use a range of techniques such as peeling, chopping, slicing, mixing, spreading, kneading and baking. 	<ul style="list-style-type: none"> -Measure ingredients accurately. -Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading and baking.
Vocabulary	Design criteria, purpose, product, user, evaluate, model, materials components, assemble, finishing techniques, mechanism, slots, score, levers, linkages, slider, textile, templates, needle, thread, running stitch, decorative, inventor, designer, engineer, chef, manufacture, ingredients, peel, chop, slice, grate, recipe, healthy and savoury.	Assemble, join, combine, strengthen, stiffen, reinforce, electrical circuit, electrical components, elements, functional, hygiene, healthy diet, balanced, mix, spread, fresh, pre-cooked and processed.	Prototype, design specification, cross-sectional, mechanical systems, cams, pulleys, gears, rotary motion, linear motion, fabrics, seam allowance, backstitch, pin, knead, bake, nutrients, fibre and substitute.	Refine, precise, computer-aided design, control, programming, aesthetic, rationed, substances and aroma.

Cross-curricular reading	DK The way things work (David Macaulay) Extreme engineering (STEM Activity) Inventors (Robert Winston) DK The building boy (Ross Montgomery) Fantastic forces and incredible machines (STEM QUEST)		The Design Thinking Toolbox (Michael Leewick) Design is storytelling (Ellen Lupton) Inventors (Robert Winston) DK Adventures in architecture for kids (Vicky Chan) Thing explainer (Randall Munroe) Fantastic forces and incredible machines (STEM QUEST) How to be an engineer (Carol Vorderman) Outside the box (Molly Potter)	
Cross-curricular links	English/History – Purse/money container English/History – Storybook/page with a mechanism Healthy Eating/PSHE - Salad	Romans -Catapults, levers and pulleys Geography/Healthy Eating/PSHE – Croque Monsieur/Toasted Sandwiches. English/Science Torch	Special Days – Father’s Day – Robot card. English - mechanical moving toys Healthy Eating/PSHE - Pizzas	History - Rationing cookies RE – Christmas decoration Science – Burglar alarms
Christian Values	<p>Courage –Pupils learn how to take risks, becoming resourceful, innovative and enterprising. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world.</p> <p>Koinonia: Through their use of Design and technology, children can demonstrate understanding and respect of other cultures and beliefs. Children’s experiences help them to develop their understanding of the diverse roles and functions of design and technology in the local and wider community. Pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others’ needs, wants and values.</p> <p>Responsibility: Children develop the discipline for seeking wisdom. They know that they are caretakers of the planet and how design and technology can make a difference. Design will inspire and give our children a valuable glimpse to the wider world. know how Design and technology both reflect and shape our history, and contribute to the culture, creativity and wealth of our community and the world around us. They will develop a respect for the materials and resources that they use in their work and learn to evaluate critically their own and others’ use of these; value the natural environment, including the distinctiveness of their locality, and learn to evaluate critically the role and function of design and technology within it. Value the natural environment and how materials might be recycled, and learn to evaluate critically the role and function of Design and Technology within it.</p> <p>Thankfulness: Children show thankfulness for the natural world and the wonder of creation. They develop a growing appreciation for the positive impact design and technology can have when learning about and influencing global issues. They Develop a respect for the tools, materials and resources that they use in their work and learn to evaluate critically their own and others’ use of these.</p> <p>Truthfulness: Children will consider their own attitudes and values in relation to image and function and to challenge assumptions, stereotypes and prejudice in visual and other forms.</p> <p>Kindness: Children are able to compare their own lives with others and show compassion for those in need. Consider the need of the user when designing a product.</p>			

	Fairness: Children Consider their own attitudes and values in relation to image and learning to value different strengths and interests. develop respect for their own and others’ work and learn how to offer and receive constructive feedback and praise; work with others, listening to and respecting each other’s’ ideas and learning to value different strengths and interests.
Spiritual Development	We promote a sense of wonder and fascination with the beauty and diversity of the world around us.