



St. Augustine of Canterbury Catholic Primary School

“Created by God to love and learn”

Our Design and Technology Curriculum

Our Core Values:

St Augustine of Canterbury Catholic Primary School provides an education that inspires and nurtures God’s children to succeed to their full potential as we are **Created by God to love and learn.**

We believe in the concept of lifelong learning, and in the idea that both adults and children learn new things every day. We maintain that learning should be a rewarding and enjoyable experience for everyone. Through our teaching we strive to equip children with the skills, knowledge and understanding necessary to make informed choices about the important things in their lives. We believe that effective and stimulating teaching will lead to consistent and quality learning experiences to help children to lead happy and rewarding lives.

We consider the following ten values as instrumental when framing the life of the school.

- **Respect:** of ourselves and our neighbour both near and far from every culture and faith.
- **Love:** of everyone and everything God created.
- **Humility:** knowing that we are one of many and avoid selfishness
- **Courage:** in the face of the unknown or meeting a new challenge or just having a go!
- **Responsibility:** for our actions or inaction
- **Compassion:** showing care and support to others
- **Perseverance:** never giving up
- **Service:** supporting others by giving of our time, organising charitable activities
- **Honesty:** in thought and deed
- **Curiosity:** a pre-requisite for learning about the world about us

Our Approach, Aim, and Curriculum

Our key curriculum drivers are determined by our values and the needs of our learners:

Inclusivity Creativity Curiosity Oracy

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	Area of learning	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Mechanisms/ Mechanical systems	Designing, Making and evaluating	<p>Characteristics of effective learning</p> <p>Show curiosity about objects, events and people Questions why things happen Engage in open-ended activity Thinking of ideas Find ways to solve problems / find new ways to do things / test their ideas Use senses to explore the world around them Create simple representations of events, people and objects Planning, making decisions about how to approach a task, solve a problem and reach a goal Checking how well their activities are going Changing strategy as needed Reviewing how well the approach worked.</p> <p>Early Learning Goals</p> <p>Choose the resources they need for their chosen activities Handle</p>	<p>TERM 2</p> <p>Explaining how to design mechanisms, using bridges or guides to control the movement.</p> <p>Designing a moving story book for a given audience.</p> <p>Following a design to create moving models that use levers and sliders.</p> <p>Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed.</p> <p>Reviewing the success of a product by testing it with its intended audience.</p> <p>TERM 6</p> <p>Designing a vehicle that includes wheels, axles and axle holders, that</p>			<p>TERM 2</p> <p>Designing a shape that produces air resistance.</p> <p>Drawing a net to create a structure from.</p> <p>Choosing shapes that increase or decrease speed as a result of air resistance.</p> <p>Personalising a design.</p> <p>Measuring, marking, cutting and assembling with increasing accuracy.</p> <p>Making a model based on a chosen design.</p> <p>Evaluating the speed of a final product based on: the effect of shape on speed and the</p>	<p>TERM 4</p> <p>Designing a pop-up book which uses a mixture of structures and mechanisms.</p> <p>Naming each mechanism, input and output accurately.</p> <p>Storyboarding ideas for a book.</p> <p>Following a design brief to make a pop up book, neatly and with focus on accuracy.</p> <p>Making mechanisms and/or structures using sliders, pivots and folds to produce movement.</p> <p>Using layers and spacers to hide the workings of mechanical parts</p>	



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	Skills	<p>Designing, Making and evaluating</p>	<p>equipment and tools effectively Children know the importance for good health of a healthy diet They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and Technology</p>	<p>when combined, will allow the wheels to move. Creating clearly labelled drawings that illustrate movement. Adapting mechanisms, when: they do not work as they should, to fit their vehicle design.; to improve how they work after testing their vehicle. Testing wheel and axle mechanisms, identifying what stops the wheels from turning, and recognising that a wheel needs an axle in order to move.</p>			<p>accuracy of workmanship on performance.</p> <p style="text-align: center;">YEAR 4 TERM 2</p>	<p>for an aesthetically pleasing result. Evaluating the work of others and receiving feedback on own work. Suggesting points for improvement.</p> <p style="text-align: center;">YEAR 5 TERM 4</p>	
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	Knowledge	Technical		<p>To know that a mechanism is the parts of an object that move together.</p> <p>To know that a slider mechanism moves an object from side to side.</p> <p>To know that a slider mechanism has a slider, slots, guides and an object.</p> <p>To know that bridges and guides are bits of card that purposefully restrict the movement of the slider.</p> <p>To know that in Design and technology we call a plan a 'design'.</p>			<p>To understand that all moving things have kinetic energy.</p> <p>To understand that kinetic energy is the energy that something (object/person) has by being in motion.</p> <p>To know that air resistance is the level of drag on an object as it is forced through the air.</p> <p>To understand that the shape of a moving object will affect how it moves due to air resistance.</p>	<p>To know that mechanisms control movement.</p> <p>To understand that mechanisms can be used to change one kind of motion into another.</p> <p>To understand how to use sliders, pivots and folds to create paper-based mechanisms.</p>	
		Additional							

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Structures	Skills	Designing, Making and evaluating			YEAR 2 TERM 2	YEAR 3 TERM 6	YEAR 4 TERM 4		
					<p>Generating and communicating ideas using sketching and modelling.</p> <p>Learning about different types of structures, found in the natural world and in everyday objects.</p> <p>Making a structure according to design criteria.</p> <p>Creating joints and structures from paper/card and tape.</p> <p>Building a strong and stiff structure by folding paper.</p> <p>Exploring the features of structures.</p> <p>Comparing the stability of different shapes.</p> <p>Testing the strength of own structures.</p>	<p>Designing a castle with key features to appeal to a specific person/purpose.</p> <p>Drawing and labelling a castle design using 2D shapes, labelling: - the 3D shapes that will create the features - materials needed and colours.</p> <p>Designing and/or decorating a castle tower on CAD software.</p> <p>Constructing a range of 3D geometric shapes using nets.</p> <p>Creating special features for individual designs.</p> <p>Making facades from a range of recycled materials.</p> <p>Evaluating own work and the work of others based on</p>	<p>Designing a stable pavilion structure that is aesthetically pleasing and selecting materials to create a desired effect.</p> <p>Building frame structures designed to support weight</p> <p>Creating a range of different shaped frame structures.</p> <p>Making a variety of free standing frame structures of different shapes and sizes.</p> <p>Selecting appropriate materials to build a strong structure and cladding.</p> <p>Reinforcing corners to strengthen a structure.</p> <p>Creating a design in accordance with a plan.</p>		

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					<p>Identifying the weakest part of a structure. Evaluating the strength, stiffness and stability of own structure.</p>	<p>the aesthetic of the finished product and in comparison to the original design. • Suggesting points for modification of the individual designs.</p>	<p>Learning to create different textural effects with materials. Evaluating structures made by the class. Describing what characteristics of a design and construction made it the most effective. Considering effective and ineffective designs.</p>		
	Knowledge	Technical		<p>YEAR 2 TERM 2</p> <p>To know that shapes and structures with wide, flat bases or legs are the most stable.</p> <p>To understand that the shape of a structure affects its strength.</p> <p>To know that materials can be manipulated to improve strength and stiffness.</p>	<p>YEAR 3 TERM 6</p> <p>To understand that wide and flat based objects are more stable.</p> <p>To understand the importance of strength and stiffness in structures.</p>	<p>YEAR 4 TERM 4</p> <p>To understand what a frame structure is.</p> <p>To know that a ‘free-standing’ structure is one which can stand on its own.</p>			

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					<p>To know that a structure is something which has been formed or made from parts.</p> <p>To know that a ‘stable’ structure is one which is firmly fixed and unlikely to change or move.</p> <p>To know that a ‘strong’ structure is one which does not break easily.</p> <p>To know that a ‘stiff’ structure or material is one which does not bend easily.</p> <p>To know that natural structures are those found in nature.</p> <p>To know that man-made structures are those made by people.</p>	<p>To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse - and their purpose.</p> <p>To know that a façade is the front of a structure.</p> <p>To understand that a castle needed to be strong and stable to withstand enemy attack.</p> <p>To know that a paper net is a flat 2D shape that can become a 3D shape once assembled.</p> <p>To know that a design specification is a list of success criteria for a product.</p>	<p>To know that a pavilion is a decorative building or structure for leisure activities.</p> <p>To know that cladding can be applied to structures for different effects.</p> <p>To know that aesthetics are how a product looks.</p> <p>To know that a product’s function means its purpose.</p> <p>To understand that the target audience means the person or group of people a product is designed for.</p> <p>To know that architects consider light, shadow and patterns when designing.</p>		
		Additional							

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Textiles	Skills	Designing, Making and evaluating	St. Augustine of Canterbury Catholic Primary School <i>“Created by God, to love and learn”</i>	YEAR 2 TERM 6	<p>Designing a pouch.</p> <p>Selecting and cutting fabrics for sewing. •</p> <p>Decorating a pouch using fabric glue or running stitch.</p> <p>Threading a needle.</p> <p>Sewing running stitch, with evenly spaced, neat, even stitches to join fabric.</p> <p>Neatly pinning and cutting fabric using a template.</p> <p>Troubleshooting scenarios posed by teacher.</p> <p>Evaluating the quality of the stitching on others' work.</p> <p>Discussing as a class, the success of their stitching against the success criteria.</p>	YEAR 3 TERM 2	<p>Designing and making a template from an existing cushion and applying individual design criteria</p> <p>Following design criteria to create a cushion</p> <p>Selecting and cutting fabrics with ease using fabric scissors.</p> <p>Threading needles with greater independence.</p> <p>Tying knots with greater independence.</p> <p>Sewing cross stitch to join fabric.</p> <p>Decorating fabric using appliqué.</p> <p>Completing design ideas with stuffing and sewing the edges</p>		
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					To understand that some products are turned inside out after sewing so the stitching is hidden.			

