The Holy Spirit Catholic Primary School
Design & Technology Knowledge and Skills Progression

Design and Technology Intent:
Our design technology curriculum promotes curiosity and a love and thirst for learning. It is ambitious and empowers our children to become independent and resilient. The DT Curriculum has been designed to offer our children a broad and balanced DT curriculum, providing them with unforgettable projects and specialised skills in woodwork, textiles, food, structures, mechanical and electrical systems.
We want to equip children with not only the minimum statutory requirements of the design technology National Curriculum but to prepare them for the opportunities, responsibilities and experiences of later life. For example, utilise our wonderful outdoor space where children can grow different fruits and vegetables each year. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. 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.

National Curriculum KS1 Subject Content; When designing and making, pupils should be taught to:

Design
- 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

Make
- 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

Evaluate
- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria Technical knowledge
- 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.

Nutrition
- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

Year 1 /2 Cycle A	Autumn	Spring	Summer
	Mechanisms **E.G: Wheels and Mechanisms** Make a toy bus to move around the classroom.	**Structures** **E.G: Windmills** Working to a design to make a Working Windmill	**Cooking and Nutrition** **E.G: Smoothies** Preparing foods by cutting and juicing and selecting fruits and vegetables to create a smoothie to meet a design brief.
Key Knowledge	• I can talk about existing products with wheels • I can generate ideas and draw a design • I can try out different wheel fastenings • I can identify a wheel, an axle and a chassis • I can create a moving vehicle • I can evaluate my design against my product.	• I can create a stable structure • I can use tools and equipment accurately to make part of a structure • I can join parts of a structure • I can evaluate a structure	• I can identify fruits. • I can describe where fruits and vegetables grow. • I can practise food preparation skills. • I can select ingredients for a recipe. • I can apply food preparation skills to a recipe. • I can evaluate against the design brief.

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Year 1/2 Cycle B	Autumn	Spring	Summer
	Cooking and Nutrition **E.G: Balanced Diet** Design 3 wraps which combine foods that combine well into a balanced meal.	**Mechanisms** **E.G: Moving Story Book** Following a design to create moving models that use levers and sliders.	**Textiles** **E.G: Puppets** Make a fairy tale character for a younger child to play with.
Key Knowledge	• I can recognise foods and their food groups. • I can identify the balance of food groups in a meal. • I can identify an appropriate piece of equipment to prepare a given food. • I can select balanced combinations of ingredients. • I can design based on criteria. • I can evaluate a dish based on design criteria.	• I can explore making mechanisms. • I can design a moving storybook. • I can construct a moving picture. • I can evaluate my finished product.	• I can join fabrics together using different methods. • I can use a template to create my design. • I can join two fabrics together accurately. • I can embellish my design using joining methods.

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Make

- 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

Evaluate

- 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

Technical knowledge

- 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. Design and technology

Cooking and nutrition

- 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.

Year 3/4 Cycle A	Autumn	Spring	Summer
	Mechanical Systems **E.G: Pneumatics** Design and make a Pneumatic toy to match a design brief.	**Cooking and Nutrition** **E.G: Eating Seasonally** Learning about seasonal foods and using their understanding to create a seasonal food tart.	**Electrical Systems** **E.G: Torches** Making a torch with a working electrical circuit and switch.
Key Knowledge & Skills	• I can understand how pneumatic systems work. • I can design a toy that uses a pneumatic system. • I can create a pneumatic system • I can test and finalise ideas against design criteria	• I can explain why food comes from different places around the world. • I can explain the benefits of seasonal foods. • I can develop cutting and peeling skills. • I can evaluate seasonal ingredients. • I can design a mock-up using criteria. • I can evaluate a dish.	• I can learn about electrical items and how they work. • I can analyse and evaluate electrical products. • I can design a product to fit a set of specific user needs. • I can make and evaluate a torch.

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	Cooking and Nutrition **E.G: Adapting a recipe** Learning a basic biscuit recipe and adapting it.	**Structures** **E.G: Constructing a castle** Design and build a castle with key features to appeal to a specific person/purpose.	**Textiles** **E.G: Cushions** Make a cushion that includes appliqué and cross-stitch.
Key Knowledge & Skills	• I can evaluate existing biscuit products. • I can prepare and cook a dish. • I can select ingredients and follow a budget. • I can take inspiration from existing products. • I can make and test a prototype biscuit. • I can evaluate a final product.	• I can recognise how multiple shapes (2D and 3D) are combined to form a strong and stable structure. • I can design a castle. • I can construct 3D nets. • I can construct and evaluate my final product.	• I can learn how to sew cross-stitch and appliqué. • I can design a product and its template. • I can decorate fabric using appliqué and cross-stitch. • I can assemble and complete a cushion.

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Year 5/6 Cycle A	Autumn	Spring	Summer
	Electrical Systems **E.G: Doodlers** Create a functional Doodler that creates scribbles on paper with or without a switch.	**Structures** **E.G: Bridges** Design and make a bridge	**Cooking and Nutrition** **E.G: Developing a recipe** Learning a simple Bolognese recipe and developing it.
Key Knowledge & Skills	• I can understand how motors are used in electrical products • I can investigate an existing product to determine the factors that affect the product's form and function. • I can apply the findings from research to develop a unique product • I can develop a DIY kit for another individual to assemble their product.	• I can explore how to reinforce a beam (structure) to improve its strength. • I can build a spaghetti truss bridge. • I can build a wooden truss bridge. • I can complete, reinforce and evaluate my truss bridge.	• I can understand how ingredients are reared and processed. • I can make adaptations to design a recipe. • I can evaluate nutritional content. • I can practise food preparation skills. • I can design a product label. • I can follow and make an adapted recipe.

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Year 5 /6 Cycle B	Autumn	Spring	Summer
	Textiles **E.G: Stuffed Toys** Design and create a stuffed toy using a variety of stitches.	**Cooking and Nutrition** **E.G: Come dine with me** Selecting three recipes to create a three course meal.	**Mechanical Systems** **E.G: Pop-up book** Use a range of mechanisms and structures to illustrate a story.
Key Knowledge & Skills	• I can design a stuffed toy. • I can sew a blanket stitch. • I can create and add decorations to fabric. • I can use a blanket stitch to assemble the components of a stuffed toy.	• I can explain the use of complementary flavours. • I can research and design a three-course meal. • I can explain recipe choices. • I can apply culinary skills and knowledge.	• I can design a pop-up book. • I can follow my design brief to make my pop-up book. • I can use layers and spacers to cover the working of mechanisms. • I can create a high-quality product suitable for a target user.