

St Anne's Catholic Primary School

Design & Technology Long term Plan



Key concepts:

The Design and Technology curriculum is structured into five key concepts:

- Designing
- Making
- Evaluating
- Technical Knowledge
- Cooking and nutrition

Disciplinary concepts:

These will be explored and developed throughout the D&T curriculum as pupils move through the school:

- **Responsibility:** (working safely, how design can solve problems, choosing the right materials, responsibilities to customers to ensure quality / reliable products, healthy eating, quality ingredients)
- **Similarity and difference:** (making comparisons, noting differences and drawing conclusions)
- **Cause and consequence:** (identifying how things work, how an action can cause change/movement)
- **Significance:** (significant designers and designs, real world examples of effective and successful products)
- **Written and oral expression:** (Using terminology, evaluating, creating accurate designs, labelling and annotating, explaining processes, presenting)

Design & Technology –Long Term Overview

Year Group	Term 1	Term 2	Term 3
Nursery	DEVELOPMENT MATTERS. Explore different materials freely, in order to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Join different materials and explore different textures.		
	EAD Creating With Materials <ul style="list-style-type: none"> • Explore media and materials on a large and small scale using a range of colours, shapes, smells and textures. • With support use tools across the provision, safely and purposefully. • Work in both 2D and 3D, using a range of media and materials e.g. printing, cutting, rolling, sticking, moulding. • Experiment with clay and dough, rolling, cutting, pressing, moulding and rolling etc. 	EAD Creating With Materials <ul style="list-style-type: none"> • With support explore and respond to different textures. • With support use tools across the provision, safely and purposefully. • With support record their constructions with a photograph • Continue to experiment with sculpture using clay and dough, rolling, cutting coiling. • With support begin to understand some of the tools, techniques and processes involved in food preparation 	EAD Creating With Materials <ul style="list-style-type: none"> • Sort, discuss and feel different fabrics. • With support use tools across the provision, safely and purposefully. • Explore designs of real e.g. castles, vehicles etc. before making their own. • With support children to record constructions with photographs or drawings. • Continue to explore sculpture using clay and dough, • With support begin to understand some of the tools, techniques and processes involved in food preparation
	DEVELOPMENT MATTERS. Use one-handed tools and equipment, for example, making snips in paper with scissors.		
	PHYSICAL DEVELOPMENT Fine Motor Control <ul style="list-style-type: none"> • Begin to develop use of basic tools e.g. use of glue stick, scissors, mark making equipment, construction equipment, dough etc. • Observe how to use equipment and tools safely. • Begin to hold a range of tools correctly and comfortably e.g. glue stick, paint brush, cooking utensils musical instruments, etc. • Begin to develop hand-eye co-ordination through a range of activities using a variety of one-handed tools and equipment. 	PHYSICAL DEVELOPMENT Fine Motor Control <ul style="list-style-type: none"> • Continue to explore a range of small equipment to support their development of co-ordination and control. • Continue to develop small muscle co-ordination and control through holding a range of tools/mark making tool correctly or comfortably. • Manipulate a range of malleable materials using tools. • Begin to know and understand that equipment and tools have to be used safely. 	PHYSICAL DEVELOPMENT Fine Motor Control <ul style="list-style-type: none"> • Develop hand-eye co-ordination using a range of activities using fine motor control e.g. can throw and catch a bean bag or ball, use ICT, use a fork, spoon, knife to cut, building, threading, small world equipment, etc. • Use hands to manipulate, and explore effect on objects and materials. • Develop control of a variety of tools e.g. scissors, hole punch, modelling tools, sand & water equipment, pegs, gardening tools, rolling pin, ICT equipment etc. • Demonstrate increasing skill and control in the use of mark-making implements, blocks, construction sets and 'small world' activities

Reception	DEVELOPMENT MATTERS.		
	Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively sharing ideas, resources and skills.		
	<p style="text-align: center;">EAD Creating With Materials</p> <ul style="list-style-type: none"> • Explore and experiment joining of materials through use of a range of resources. • Begin to understand some of the tools, techniques and processes involved food preparation. 	<p style="text-align: center;">EAD Creating With Materials</p> <ul style="list-style-type: none"> • Select and use tools safely and purposefully across the provision. • Use designs of real objects to support their thinking about their own designs and to adapt as necessary. • Develop confidence with ways of joining materials through use of a range of resources. E.g. flap join • Record constructions with photographs and drawings. • Begin to understand some of the tools, techniques and processes involved food preparation. 	<p style="text-align: center;">EAD Creating With Materials</p> <ul style="list-style-type: none"> • Select and use tools safely and purposefully across the provision. • Use designs of real objects to support their thinking about their own designs and to adapt as necessary. • Develop confidence with ways of joining materials through use of a range of resources. E.g. flap join • Record constructions with photographs and drawings. • Begin to understand some of the tools, techniques and processes involved food preparation.
	DEVELOPMENT MATTERS.		ELG
	Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons.		<u>Children at the expected level of development will:</u> Use a range of small tools, including scissors, paint brushes and cutlery. Begin to show accuracy and care when drawing
<p style="text-align: center;">PHYSICAL DEVELOPMENT Fine Motor Control</p> <ul style="list-style-type: none"> • Use, store and transport a range of equipment safely. • Manipulate malleable materials to create a desired effect by patting, stroking, poking, squeezing etc. and use correct vocabulary. • Create lines and shapes when drawing, creating and building. • Use simple tools to effect changes to materials. 	<p style="text-align: center;">PHYSICAL DEVELOPMENT Fine Motor Control</p> <ul style="list-style-type: none"> • Use a range of media and techniques to create –shade, smudge, sprinkle, blow, sculpt, bend, print etc. • Handle tools, objects, construction and malleable materials safely with increasing control. 	<p style="text-align: center;">PHYSICAL DEVELOPMENT Fine Motor Control</p> <p>Use a wide range of tools safely and with increased accuracy. e.g. scissors, cooking utensils, woodwork tools, knife, fork, spoon, needle, clay tools, etc.</p>	

Reception	<p style="text-align: center;"><u>Structures</u> <u>Junk modelling</u></p> <p>In this unit, pupils explore and learn about various types of permanent and temporary join. They are encouraged to tinker using a combination of materials and joining techniques in the junk modelling area.</p>	<p style="text-align: center;"><u>Textiles</u> <u>Bookmarks</u></p> <p>Pupils develop and practise threading and weaving techniques using various materials and objects. They look at the history of the bookmark from Victorian times versus modern-day styles. The pupils apply their knowledge and skills to design and sew their own bookmarks.</p>	<p style="text-align: center;"><u>Structures</u> <u>Boats</u></p> <p>In this unit, children explore what is meant by ‘waterproof’, ‘floating’ and ‘sinking’, then experiment and make predictions with various materials to carry out a series of tests. They learn about the different features of boats and ships before investigating their shape and structures to build their own.</p>
Year 1	<p style="text-align: center;"><u>Cooking and Nutrition</u> <u>Exploring Fruit and vegetables</u></p> <p>Learn about the basic rules of a healthy and varied diet to create dishes. Understand where food comes from, for example plants and animals.</p> <p style="text-align: center;"><u>Stand-alone lesson - Moving Story books</u> <u>Sliders and movement</u></p> <p>Pupils learn about the direction of movements and explore the mechanisms required to make these work, by creating examples of side-to-side sliders and up-and-down sliders from templates</p>	<p style="text-align: center;"><u>Textiles</u> <u>Puppets</u></p> <p>Children explore different ways of joining fabrics before creating their own hand puppets based upon characters from a well-known fairy tale. Throughout they work to develop their technical skills of cutting, glueing, stapling and pinning.</p>	<p style="text-align: center;"><u>Structures</u> <u>Windmills</u></p> <p>Build structures such as windmills and chairs, exploring how they can be made stronger, stiffer and more stable. Recognise areas of weakness through trial and error.</p>
Year 2	<p style="text-align: center;"><u>Mechanisms</u> <u>Moving Monsters- axles</u></p> <p>Introduce and explore simple mechanisms, such as sliders, wheels and axles in their designs. Recognise where mechanisms such as these exist in toys and other familiar product</p>	<p style="text-align: center;"><u>Cooking and Nutrition</u> <u>A Balanced Diet</u></p> <p>Learn about the basic rules of a healthy and varied diet to create dishes. Understand where food comes from, for example plants and animals.</p>	<p style="text-align: center;"><u>Structures</u> <u>Baby Bear’s Chair</u></p> <p>Build structures such as windmills and chairs, exploring how they can be made stronger, stiffer and more stable. Recognise areas of weakness through trial and error.</p>
Year 3	<p style="text-align: center;"><u>Cooking and Nutrition</u> <u>Eating Seasonally</u></p> <p>Understand and apply the principles of a healthy and varied diet to prepare and cook a variety of dishes using a range of cooking techniques and methods. Understand what is meant by seasonal foods. Know where and how ingredients are sourced.</p> <p style="text-align: center;"><u>Stand-alone lesson - Textiles</u> <u>Cross stitch applique</u></p> <p>The children are introduced to cross-stitch and the decorative sewing technique appliqué and experiment with trying these stitches independently</p>	<p style="text-align: center;"><u>Structures</u> <u>Constructing a castle</u></p> <p>Children will design and make a castle with key features that satisfy a purpose. Children will utilise skills to build a complex structure from simple geometric shapes and evaluate their work by answering simple questions.</p>	<p style="text-align: center;"><u>Digital World</u> <u>Electronics Charm</u></p> <p>Design, code, make and promote a Micro:bit electronic charm to use in low-light conditions, developing their understanding of programming to monitor and control their products.</p> <p style="text-align: center;"><u>Stand-alone lesson - Mechanisms</u> <u>Explore pneumatics and design a pneumatic toy</u></p> <p>The children use their understanding of pneumatics to design their own pneumatics toys through thumbnail sketches and exploded diagrams</p>

<p>Year 4</p>	<p><u>Mechanical Systems</u> <u>Making a sling slot car</u></p> <p>Children transform lollipop sticks, wheels, dowels and straws into a moving car. They will be using a glue gun to construct the materials, making the launch mechanism, designing and also making the body of the vehicle using nets and assembling these to the chassis.</p> <p><u>Stand-alone lesson - Cooking and Nutrition</u> <u>Follow a recipe</u></p> <p>After sampling and evaluating a range of biscuits, children bake a simple biscuit recipe.</p>	<p><u>Structures</u> <u>Anglo Saxon Pavilion</u></p> <p>Continue to develop KS1 exploration skills, through more complex builds such as pavilion and bridge designs. Understand material selection and learn methods to reinforce structures</p> <p><u>Stand-alone lesson - Fastenings</u></p> <p>Children explore different fastenings around them and consider their advantages and disadvantages.</p>	<p><u>Electrical Systems</u> <u>Making Torches</u></p> <p>Create functional electrical products that use series circuits, incorporating different components such as bulbs, LEDs, switches, buzzers and motors. Consider how the materials used in these products can: ● Protect the circuitry. ● Reflect light. ● Conduct electricity. ● Insulate.</p>
<p>Year 5</p>	<p><u>Mechanisms</u> <u>Pop-Up Book</u></p> <p>Extend understanding of individual mechanisms, to form part of a functional system, for example: Automatas, that use a combination of cams, followers, axles/shaft, cranks and toppers.</p>	<p><u>Cooking and Nutrition</u> <u>What Could be Healthier</u></p> <p>Understand and apply the principles of a healthy and varied diet to prepare and cook a variety of dishes using a range of cooking techniques and methods. Understand what is meant by seasonal foods. Know where and how ingredients are sourced.</p>	<p><u>Structures</u> <u>Bridges</u></p> <p>Continue to develop KS1 exploration skills, through more complex builds such as pavilion and bridge designs. Understand material selection and learn methods to reinforce structures.</p>
<p>Year 6</p>	<p><u>Cooking and Nutrition</u> <u>Come Dine With Me</u></p> <p>Understand and apply the principles of a healthy and varied diet to prepare and cook a variety of dishes using a range of cooking techniques and methods. Understand what is meant by seasonal foods. Know where and how ingredients are sourced.</p>	<p><u>Electrical Systems</u> <u>Steady Hand Games</u></p> <p>Create functional electrical products that use series circuits, incorporating different components such as bulbs, LEDs, switches, buzzers and motors. Consider how the materials used in these products can: ● Protect the circuitry. ● Reflect light. ● Conduct electricity. ● Insulate.</p>	<p><u>Electrical Systems</u> <u>Doodlers</u></p> <p>Children program a navigation tool to produce a multifunctional device for trekkers. They combine 3d objects to form a complete product in CAD 3D modelling software. The unit accumulates with a pitch to share and “sell” the children’s final product concepts and programs.</p>

