

St Anthony's Catholic Primary School

Design & Technology

Long Term Plan

EYFS Areas of Learning
C&L
By commenting on what children are interested in or doing, and echoing back what they say with new vocabulary added, practitioners will build children's language effectively. Through
conversation children share their ideas with support and modelling from their teacher
PSED
Children should be supported to manage emotions, develop a positive sense of self, set themselves simple goals, have confidence in their own abilities, to persist and wait for what they want
and direct attention as necessary
PD
Repeated and varied opportunities to explore and play with small world activities, puzzles, arts and crafts and the practice of using small tools, with feedback and support from adults, allow
children to develop proficiency, control and confidence.
Μ
Children look for patterns and relationships, spot connections, 'have a go', talk to adults and peers about what they notice and not be afraid to make mistakes.
EA&D
The development of children's artistic and cultural awareness supports their imagination and creativity. It is important that children have regular opportunities to engage with the arts,
enabling them to explore and play with a wide range of media and materials. The quality and variety of what children see, hear and participate in is crucial for developing their
understanding, self-expression, vocabulary and ability to communicate through the arts. The frequency, repetition and depth of their experiences are fundamental to their progress in
interpreting and appreciating what they hear, respond to and observe.

	Unit	WALTs	National Curriculum Programme of Study	Vocabulary/Numeracy if appropriate
Year 1	Autumn 2: Our Fabric Faces (Textiles)	To be able to explore fabrics. To be able to explore and evaluate how hair is created using different materials. To be able to select a material and shape it To be able to fabrics together and attach different materials. To be able to cut on a line and use a template to create my fabric face shape To be able to create and follow a design criteria To be able to think of ideas, discuss them and then create a design. To be able to carefully select fabrics and materials. To be able to follow my design carefully and use different tools to make my fabric face.	Explore and evaluate a range of existing products (in the context of exploring fabrics and fabric dolls/characters). Select from and use a range of tools and equipment to perform practical tasks Design purposeful, functional, appealing products for themselves and other users based on design criteria (in the context of using a design criteria to design a fabric face). Select from and use a wide range of materials including textiles according to their characteristics (in the context of selecting fabrics and materials to match their faces and join together successfully).	Explore, fabric, textile, lace, felt, corduroy, jean, satin, silk, cotton, velvet, velour, ribbon, wool, fur Template, cut, line, shape, oval, round, square, heart, tone. Design, criteria, textiles, materials, tools, annotated drawing, evaluate Numeracy=
	Spring 2: Dips & Dippers (Food Technology)	To be able to evaluate different dips. To be able to to think about where different foods come from. To be able to explore different dippers and describe them. To be able to explain why I need to eat a balance and variety of food groups to stay healthy? To be able to make dips and dippers. To be able to plan my own appealing dip and dipper and clearly show my ideas. To be able to follow my plan to make my own dip and dipper. I can evaluate my dip and dipper.	 Explore a range of existing products (in the context of comparing different dippers). Use the basic principles of a healthy and varied diet to compare different ingredients in dips and dippers To select from and use a range of tools and equipment to perform practical tasks (for example, cutting) in the context of making a Dip and Dipper. Design purposeful, functional, appealing products for themselves and other users based on design criteria in the context of designing a new dip. Use the principles of a healthy and varied diet to prepare dishes (in the context of following a design to make a new dip and dipper) Evaluate ideas and products against design criteria 	Ingredients, dips, evaluate, senses, taste, texture, smell, appearance. Dipper, explore, sensory, evaluating, crunchy, dry, hard, sweet, juicy Protein, dairy, fruit, vegetables, carbohydrate, balanced, diet, varied. Hygiene, blend, grate, crush, mix, peel, chop, slice, layered, marbled Context, ingredients, equipment, method, design. Evaluate, design criteria, plan.

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	Summer 2: Movers and Sliders (mechanisms)	 To be able to explore and evaluate an existing product. To be able to use a mechanism in my product. To be able to make a lever and use it in my product. To be able to make a wheel mechanism and use it in my product. To be able to design a working product thinking about who it is for and what it needs. To be able to make decisions about my product design and use an annotated sketch to show them. To be able to use mechanisms to make a product. To be able to evaluate my product against design criteria. 	Explore and use mechanisms (for example levers), in products (in the context of using a wheel to make a picture move). To generate, develop, model and communicate ideas through talking, drawing, templates and mock-ups (in the context of drawing an annotated sketch to show their ideas about a moving picture).	Moving, picture, book, story, traditional tale, lever, slider, pivot, wheel, push, pull, direction, up, down, left, right, evaluate, product. Moving, mechanism, slider, evaluate, assemble, fix. Moving, mechanism, lever, assemble, split pin, pivot. Traditional tale, moving, picture, mechanism, wheel, disc, assemble, reassemble, split pin, fixed, push, cut, draw. Design criteria, annotated sketch, idea, discuss, choose, drawing, label, appealing Design Criteria, evaluate, make, improve.
Year 2	Autumn 2: Pirate Paddy's Pack Lunch Problem (3D construction)	To evaluate a product's ability to do a job well. To investigate and evaluate existing products. To explore different materials and decide which will meet the design criteria for my product. To design a new product that meets the design criteria. To build a product and think about how to make its structure meet the design criteria. To test a product and then evaluate it. To use my evaluations to make improvements to my product and then retest and evaluate it. To improve my product by making it stronger, stiffer, more stable and more waterproof.	 Explore and evaluate a range of existing products (in the context of evaluating existing lunch boxes). Design purposeful, functional, appealing products based on design criteria (in the context of designing a new lunch box that can move between the pirate ships). Build structures, exploring how they can be made stronger, stiffer and more stable (in the context of making their lunch boxes) Adapt materials to make them better meet the design criteria Evaluate ideas and products against design criteria (in the context of testing the lunch box) Evaluate a product against the design criteria. 	Evaluate, product, existing, disassemble Materials, waterproof, strong, protect, reclaimed. Select, tools, equipment, safety, area, join, tape, glue, structure, hinges. Evaluate, design criteria, specification, test, stronger, stable, stiffer. Retest, evaluate, improvements, appealing

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Spring 2: Sensational Salads (Food Technology)	To be able to name different fruits and vegetables. To be able to explain where some food grows. To be able to explore and evaluate existing products. To be able to explain why I need to eat fruit and vegetables. To be able to prepare and make a healthy salad made from root vegetables. To be able to explain where fish comes from and why it is important to eat fish. To be able to prepare a tasty fish salad. To be able to explain where different fruits come from. To be able to prepare a tasty fruit salad.	Understand where food comes from (in the context of looking at different fruits and vegetables. To explore and evaluate a range of existing products (in the context of tasting salads made mainly from root vegetables). To use the basic principles of a healthy and varied diet to prepare dishes Use the basic principles of a healthy and varied diet to prepare dishes (in the context of	Fruit, vegetable, plant, root, cauliflower, cabbage, strawberries, beetroot, onions, apples, plums, broad beans, blackberries, rhubarb, marrow, gooseberries, celery, lettuce, carrots , tomatoes, radishes, runner beans, turnips, potatoes. Evaluate, vegetable, root, salad, texture, smell, appearance, taste. Hygiene, blend, grate, mix, peel, chop, slice, The Bridge, The Claw, Fork Safe. Protein, vitamins, minerals, oily,
Summer 2: Fabric Bunting (Textiles)	To be able to evaluate bunting	preparing a salad made from root vegetables) Select from and use a range of tools and equipment to perform practical tasks Explore and evaluate a range of existing	salmon, mackerel, trout, tuna, shellfish. Hygiene, blend, grate, mix, zest, juice, chop, slice. Evaluate, product, bunting,
	To be able to design my bunting flag. To be able to a paper template to help cut out a fabric shape. To be able to use a running stitch to join fabric To be able to select fabrics that are suitable for decorating my bunting. To be able to join fabrics. To be able to evaluate my product.	products (in the context of evaluating bunting designs) Generate, develop, model and communicate ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology (in the context of using a basic graphics program to design a bunting flag). Select from and use a range of tools and	existing. Design, program, graphics, computer. Template, felt, trace, accurately, skill. Needle, thread, running stitch,
	To be able to evaluate my product.	equipment to perform practical tasks (for example joining) in the context of using running stitch to join fabric). Select from and use a wide range of materials and components, including textiles, according to their characteristics (in the context of selecting materials to join to fabric bunting).	seam, starting off, finishing off.

	Unit	WALTs	National Curriculum Programme of	Vocabulary/Numeracy if
Year 3	Autumn 2: Let's Go Fly a Kite (3D construction)	To be able to explain how key events and individuals in design and technology have helped shape the world. To communicate my existing understanding about kites. To be able to name and explain the function of the different parts of a kite. To investigate kite shapes. To be able to select from and use different materials and components. To be able to develop design criteria. To develop and communicate a design for my kite. To be able to accurately measure and cut the shape of the body of the kite and join it to the frame structure. to be able to make a strong and stiff frame structure to support the kite. To be able to evaluate my kite.	StudyUnderstand how key events and individuals in design and technology have helped shape the world (in the context of how kites have helped shape the world).Generate, develop and communicate their ideas through discussion (in the context of discussing existing ideas about kites).Investigate and analyse a range of existing products (in the context of investigating the different parts of a kite and their functions).Generate, develop, model and communicate their ideas through annotated sketches (in the context of sketching a design for a kite).Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing, accurately in the context of measuring and cutting the body of the kite).Evaluate ideas and products against design criteria and consider the views of others to improve their work (in the context of testing the kite and then using their own design criteria to evaluate it).	appropriate Key events, design and technology, ideas, kite Parts, function, bridle, line, tow- point, keel, sail, spars, tail. Kite, shape, delta, diamond, rokkaku, sled Design criteria, prioritise, decoration, shape, materials. Structure, frame, strength, stiffen Bridle, line, tail, design criteria, test, evaluate.
	Spring 2: Juggling Balls (Textiles)	To investigate and evaluate juggling balls. To be able to follow a design criteria to help me create and communicate my ideas. To be able to perform tie-dye as a technique for decorating my fabric. To be able to research and trial different fillings for my juggling ball and decide upon the most functional one. To be able to cut around a template and use a running stitch to create a hem. To be able to join my juggling ball using an appropriate stitch to create my finished shape.	To investigate and evaluate a range of existing products To generate, develop, model and communicate ideas through discussion and annotated sketches (in the context of designing a circus themed juggling ball). To select from and use a range of tools and equipment to perform practical tasks accurately (in the context of creating a tie dye background for a juggling ball).	Explore, textiles, evaluate, interpret, product, analysis, star profile, user, and design, brief. Design criteria, annotate. Tie-dye, technique, decorate, annotate. Cut, shape, functional, hem, template, stitch. Cut, shape, functional, hem, template, stitch. Shape, join, overcast stitch, aesthetic, evaluate, test.

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	Summer 2: Edible Garden (Food Technology)	To be able to name some herbs and know how to grow them. To explain what makes a diet healthy and varied and can cook a healthy balanced meal. To explain where, when and how strawberries are grown in the United Kingdom. To be able to use kitchen tools correctly to prepare and make a tasty and nutritious drink. To explain when tomatoes are in season in the United Kingdom and can say where and how they are grown. To be able to prepare and cook/assemble a healthy and tasty meal using tomatoes as my main ingredient.	Understand and know where and how a variety of ingredients are grown (the context of where and how herbs are grown) Understand and apply the principles of a healthy and varied diet (in the context of making a balanced meal made from herbs). Understand seasonality and know where and how a variety of ingredients are grown (in the context of where and how strawberries are grown). Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques (in the context of making a strawberry smoothie). Select from and use a wider range of tools and equipment to perform practical tasks accurately (in the context of kitchen tools).	Herb, thyme, mint, parsley, ta Balanced meal, complex carbohydrates, vitamins, minerals, dairy, fats, sugars, nutrition. tarragon, rosemary, basil, seed. Polytunnels, glass houses, seeds, plants, calyx, pollinate, seasonality Smoothie, measure, milli Seed, pinch out, sow litre Boil, simmer, seasoning, bruschetta, grate, chop, heat source, hob.
Year 4	Autumn 2: The great Bread Bake Off (Food Technology)	To find out about important people and events in the past that have shaped the way bread is made and sold today. To investigate and analyse existing products according to their characteristics To be able to develop a design criteria. To be able to shape dough. To be able to shape dough. To be able to think of original ideas for a product based on my design criteria. To be able to select ingredients and kitchen equipment to help me follow a bread making recipe. I can knead and bake.	Understand how key events and individuals in design and technology have helped shape the world Investigate and analyse a range of existing products. Use research and develop design criteria to inform the design in the context of creating a design criteria for a new type of bread Select from and use a wider range of tools and equipment to perform practical tasks Generate, develop, model and communicate their ideas through discussion and annotated sketches in the context of creating initial designs for a new bread product. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques in the context of making a new bread product. Select from and use a wider range of equipment to perform practical tasks accurately. Evaluate their ideas and products against their own Design Criteria	Pioneer, design, brand, industry. Product, market research. texture, appearance, flavour. design criteria, shape, knot. Ingredients, yeast, knead, dough, rise.

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		Study	appropriate
Spring 2: Mechanical Posters (3D Mechanisms	To investigate mechanical systems To be able to make mechanical systems which use levers and linkages. To be able to develop design criteria to help me design innovative product To be able to use sketches to develop and communicate ideas To be able to use prototypes to develop my ideas To be able to select and use the correct tools and equipment accurately. To be able to carefully select materials and use different techniques.	Investigate and analyse a range of existing products (in the context of investigating existing lever and linkage mechanisms) Understand and use mechanical systems in their products (for example levers and linkages) in the context of making a mechanism which uses levers and linkages. Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose, aimed at individuals or groups in the context of developing design criteria and design ideas for a moving poster to promote recycling Generate, develop, model and communicate ideas through discussion, annotated sketches, and prototypes in the context of generating and developing ideas to make a moving poster 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 in the context of selecting materials to produce a high-quality finish on a moving poster.	Design brief, recycle, mechanism, mechanical system, moving, lever, linkage, design brief, pivot, input, output. guide/bridge, system adapt Prototype, evaluate High- quality, finish, techniques, select, accuracy, tools, equipment, materials, components, replicate, mock- up.
Summer 2: Battery Operated Lights	To explain how key events and individuals in	Understand how key events and individuals in	STEM, science, design and
(technology)	 design and technology have helped shape the world. To be able to make and represent different types of circuits. To be able to make and use switches. To be able to develop design criteria and a design To be able to develop and communicate a design for my light. To be able to select materials and components to make my light. To be able to create a well-finished product. To be able to complete a detailed evaluation of my finished product. 	design and technology have helped shape the world Understand and use electrical systems in their products (for example, series circuits, incorporating switches, and bulbs) Generate, develop, model and communicate their ideas through annotated sketches (in the context of sketching a design for a light). 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 (in the context of choosing materials and components to make the main structure of the light)	technology, engineering, mathematics, chronological, events, individuals, changing, inventors. Mains, battery, operated, energy, electricity, conductor, insulator, connect, series, fault, parallel, circuit, components, symbol, electrical systems, design brief. Design criteria, specification, prioritise, decoration, shape, materials, annotate, sketch, cross- sectional, original, innovative, purpose.

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			Study	appropriate
Year 5	Autumn 2: Automata Animals (3D construction)	To be able to research ideas about different animals to inform my design. To be able to explain how simple cam mechanisms work. To be able to make a simple mechanism to help understand cams. To be able to select materials according to their functional properties. To be able to use research and develop design criteria to inform a design. To be able to build a framework accurately using a wider range of tools and equipment. To be able to evaluate a product To understand and use a mechanical system.	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 in the context of researching animals that will be used in their mechanical models. Understand and use mechanical systems on their products (for example cams) in the context of understanding how cams can be used to make a model move Understand and use mechanical systems in their products (for example cams) in the context of understanding how changing the shape of the cam changes the movement of the follower. Select from and use a wider range of tools and equipment to perform practical tasks (for example cutting, shaping, joining and finishing) accurately in the context of using tools and equipment to perform the job of cutting, joining and finishing wood to make a frame	Endangered, vulnerable, appearance, habitat, research, design brief. Cam, follower, mechanical systems, rotary, linear, convert, motion mechanical systems, rotary, linear, convert, movement, dwell, snail, egg shaped, eccentric, ellipse, hexagon, round, off centre, offset. Design criteria, functional, aesthetic, design features, innovative, research, fi framework, construction, finish, join, cut, saw, square section wood, hacksaw, vice, corner joints, framework, measure, accurately, smooth, finish, notch. quality join, cut, saw, prototype, evaluate, peer, feedback, off centre, axle, shaft.

Unit	WALTs	National Curriculum Programme of Study	Vocabulary/Numeracy if appropriate
Spring 2: Super Seasonal Cooking (Food Technology)	To be able to explain what seasonality means and know when different fruit and vegetables are in season in the United Kingdom. To explain where, when and how a variety of ingredients are reared, caught and processed To be able to taste and evaluate seasonal foods and recognise that sometimes we need to try a new food a few times to find out if we like it. To be able to explain the importance of protein as a proportion of a healthy varied diet. To be able to work as a group to generate, evaluate and refine recipe ideas. To be able to clearly communicate final designs To explain how to correctly store and handle meat and fish. To be able to prepare, cook and evaluate a healthy seasonal meal.	To understand seasonality in the context of tasting food that is in season Understand and apply the principles of a healthy and varied diet in the context of the importance of protein in the diet. Select from a wider range of ingredients, according to their functional properties and aesthetic qualities in the context of selecting ingredients for a seasonal meal. Consider the views of others to improve their work in the context of improving their design for a seasonal meal. Generate, develop, model and communicate their ideas through discussion and annotated sketches in the context of designing a healthy seasonal meal. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques in the context of preparing and cooking a healthy seasonal meal. Evaluate their products against their own design criteria in the context of evaluating their seasonal meal.	Seasonality, spring, summer, autumn, winter, imported, ripe, sustainable. Seasonal, reared, asparagus, kale, spinach, radishes, rocket, Jersey Royal new potatoes, spring onions, taste, texture, smell. caught, processed Balanced, protein, eatwell plate. Design criteria, specification, annotated diagram, generate, refine Blanch, fry, grill, griddle, chop, slice, peel, grate.

Unit	WALTs	National Curriculum Programme of Study	Vocabulary/Numeracy if appropriate
Summer 2: Felt Phone Cases (Textiles)	To be able to write a design criteria for a mobile phone case. To be able to generate a range of design ideas and clearly communicate my final design. To be able to make a paper template. To practise using different types of stitches and choose the best one to use on the final felt phone case. To be able to organise ideas in a step by step plan. To be able to select decorative techniques and fastenings according to their functional properties and aesthetic qualities. To be able to evaluate a product	To 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 in the context of creating a design criteria for a mobile phone case. To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams in the context of designing a felt phone case To select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities in the context of selecting decorative techniques and fastenings for felt phone cases To evaluate their ideas and products against their own design criteria in the context of evaluating a felt phone case against a design criteria created	Design criteria, aesthetics, functional, specification. Innovative, annotate, design process. Pattern, template, precisely, accurately, scale, measurements, millimetre, centimetre. Prototype, whipstitch, backstitch, running stitch, blanket stitch. Plan, fastenings, decoration, felt, design process. Fastenings, decoration, felt, design criteria, evaluate.

	Unit	WALTS	National Curriculum Programme of Study	Vocabulary/Numeracy if appropriate
Year 6	Autumn 2: Programming Adventurers (Design)	To be able to program and control floor robots To be able to generate and develop ideas through discussion To be able to research a range of materials To be able to plan an adventure map To be able to select appropriate materials based on research To be able to monitor a floor robot To be able to evaluate a finished product	Apply their understanding of computing to program, monitor and control their products by understanding what floor robots are and how they are programmed and controlled Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided by designing an adventure map. Use research and develop design criteria to inform design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups by exploring how different materials affect the movement and control of floor robots 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 by creating an adventure map using materials selected for their properties. Apply their understanding of computing to program, monitor and control their products by programming and monitoring floor robots on finalised adventure maps	Floor robot, Bee-Bot, input, output. Adventure, maps, obstacles, squares, background, start, finish Materials, properties, cotton, silk, felt, cardboard, paper obstacles, plan, evaluate, revise, bubble wrap, plastic programming, monitoring, evaluating

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		Study	appropriate
Spring 2: Marbulour Structures (3D construction)	To be able to investigate free standing structures To be able to apply understanding of structures To be able to use a wider range of tools and equipment to perform practical tasks accurately. To be able to develop a range of practical skills to create bends To be able to investigate existing products To be able to select from and use materials and components to make a marble run To be able to evaluate and improve a product	To investigate and analyse a range of existing products in the context of looking at existing free-standing structures. To apply their understanding of how to strengthen, stiffen and reinforce more complex structures in the context of strengthening, reinforcing and stabilising a cardboard tube. To select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately in the context of joining cardboard tubes accurately together. To evaluate their ideas against their own design criteria and consider the views of others to improve their work in the context of evaluating their marble run against the design criteria set in lesson 5.	Free standing, structure, support, stiffen, sturdy, stable, reposition, strengthen, reinforce Accurate, join, shape, cut aesthetics, tools, equipment, functional Bend, skills, tools, equipment, cut, shape Aesthetic, functional, iterative, process, join. Existing, product Test, evaluate, design criteria, improve
Summer 2: Global Food (Food Technology)	To be able to say where in the world ingredients come from To be able to explain that diets around the world are based on similar food groups To be able to explain why rice is a good staple food To be able to cook rice To be able to demonstrate a range of food skills and techniques To be able to demonstrate a range of basic and advanced food skills and cooking techniques. To be able to accurately and mainly independently follow a recipe demonstrating a range of cooking techniques	Understand seasonality, and know where and how a variety of ingredients are grown in the context of looking at where a variety of ingredients come from. Understand and apply the principles of a healthy and varied diet in the context of understanding how diets are varied around the world but still consist of the same food groups. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques	Ingredient, climate, taste, world, global, flourish Diet, food groups, eat well plate, protein, dairy, carbohydrates, starchy fruit, fat, vegetables storage, handling, nutritional, benefits and measure techniques, basic, fry, grate, dice, chop, slice, hygiene, salsa, guacamole, quesadillas. knead, bake, recipe, equipment,