Design and Technology

Nursery			
	Advent	**Lent**	**Pentecost**
Skills	• Show curiosity about objects, events and people • Question why things happen • Engage in open-ended activity • Find ways to solve problems and find new ways to do things • Create simple representations of events, people and objects	• Choose the resources they need for their chosen activities • They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • They represent their own ideas, thoughts and feelings through design and technology	• Planning, making decisions about how to approach a task, solve a problem and reach a goal • Checking how well their activities are going • Explore different materials freely • Develop their own ideas and then decide which materials to use to express them. • Return to and build on their previous learning, refining ideas and developing their ability to represent them • Reviewing how well the approach worked
Knowledge	• Know the senses they can use to explore the world around them • Know how to test their ideas	• To know how to construct stacking blocks vertically and horizontally, making enclosures and creating spaces. • Know how to handle equipment and tools effectively	• To know how to join construction pieces together to build and balance. • To know how to develop their ideas. • To know which objects are connected to real-life. • To know how to work safely
	Vocabulary: objects, create, taste, touch, smell, hear, see, idea, water, sand, blocks, workshop	**Vocabulary:** construct, blocks, design, tools, beads, vessel, bridge, enclosure, collage, texture	**Vocabulary:** construction, safety, planning problem, suitable, real-life objects, fastener

Design and Technology

Foundation			
	Advent	**Lent**	**Pentecost**
Skills	• Compare textures and choose material for a purpose. • To use technology to create simple representations • To choose tools which are fit for purpose	• To use different media, tools and techniques to create their own product • To use a variety of resources to enhance their products • To create a product using natural resources • To use folding and sticking to create products	• To use joining techniques, such as curling, fringing weaving and folding • To select appropriate objects that are fit for purpose, for example objects to make noise. • Talk about the process they used to create their word and how they can improve it.
Knowledge	• To know how to show interest in and describe the texture of things. • To know how to join construction pieces together to build and balance. • To familiarise with the different tools and materials in the 'Creation Station.' •To know how to use various construction materials. • To know how to begin to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces. • To understand the resources and their functions	• To create simple representations of events, people and objects using a variety of media • To explore and choose particular movements, instruments/ sounds, colours and materials for their own imaginative purposes. • To explore and use a variety of materials and techniques to improve own creations • To know how to return to and build on their previous learning, refining ideas and developing their ability to represent them. • To know how to create collaboratively sharing ideas, resources and skills.	• To know how to safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function; • To know how to share their creations, explaining the process they have used; • Learn how ideas change, grow and develop as work is produced and can talk about their own practice.
	Vocabulary: materials, textures, construction, build, balance, vertical, horizontal, stacking, collage.	**Vocabulary:** paper mâché, tools, folding, sticking, natural, colours, sounds, movement	**Vocabulary:** design, process, junk modelling, create, 3D, curl, fringe, weave, decorate, improve

Design and Technology

Year 1			
	Design	**Make**	**Evaluate**
Skills	• Design appealing products for a particular user based on simple design criteria. • Generate initial ideas and design criteria through own experiences. • Develop and communicate these ideas through talk and drawings and mock ups where relevant	• Select and use simple utensils, tools and equipment to perform a job e.g. peel, cut, slice, squeeze, grate and chop safely; marking out, cutting, joining and finishing; cut, shape and join paper and card. • Select from a range of ingredients and materials according to their characteristics to create a chosen product.	• Taste, explore and evaluate a range of products to determine the intended user's preferences for the product • Evaluate their ideas throughout and finished products against design criteria, including intended user and purpose.
Knowledge	**Mechanical Systems (Advent)**	**Structures (Lent)**	**Food (Pentecost)**
	• Explore and use sliders and levers. • Understand that different mechanisms produce different types of movement. • Know and use technical vocabulary relevant to the project.	• Know how to make freestanding structures stronger, stiffer and more stable. • Know and use technical vocabulary relevant to the project.	• Understand where a range of fruit and vegetables come from e.g. farmed or grown at home. • Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The Eatwell Plate. • Know and use technical and sensory vocabulary relevant to the project.
	Vocabulary: slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards	**Vocabulary:** cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder	**Vocabulary:** fruit and vegetable names, names of equipment and utensils, sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard, flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients

Design and Technology

Year 2			
Skills	**Design**	**Make**	**Evaluate**
	• Design appealing products for a particular user based on simple design criteria. • Generate initial ideas and design criteria through own experiences. • Develop and communicate these ideas through talk and drawings and mock ups where relevant	• Select and use simple utensils, tools and equipment to perform a job e.g. peel, cut, slice, squeeze, grate and chop safely; marking out, cutting, joining and finishing; cut, shape and join paper and card. • Select from a range of ingredients and materials according to their characteristics to create a chosen product.	• Taste, explore and evaluate a range of products to determine the intended user's preferences for the product • Evaluate their ideas throughout and finished products against design criteria, including intended user and purpose.
Knowledge	**Mechanical Systems (Advent)**	**Structures (Lent)**	**Textiles (Pentecost)**
	• Explore and use wheels, axles and axle holders. • Distinguish between fixed and freely moving axles. • Know and use technical vocabulary relevant to the project.	• Know how to make freestanding structures stronger, stiffer and more stable. • Know and use technical vocabulary relevant to the project.	• Understand how simple 3-D textile products are made, using a template to create two identical shapes. • Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling. • Explore different finishing techniques • Know and use technical vocabulary relevant to the project.
	Vocabulary: vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used	**Vocabulary:** cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, wood, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder	**Vocabulary:** joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish

Design and Technology

Year 3			
	Design	**Make**	**Evaluate**
Skills	• Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. • Use annotated sketches, prototypes, final product sketches and pattern pieces; communication technology, such as web-based recipes, to develop and communicate ideas.	• Plan the mainstages of making. • Select from and use a range of appropriate utensils, tools and equipment with some accuracy related to their product. • Select from and use finishing techniques suitable for the product they are creating.	• Investigate a range of 3-D textile products, ingredients and lever and linkage products relevant to their project. • Test their product against the original design criteria and with the intended user. • Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.
Knowledge	**Mechanical Systems (Advent)**	**Food (Lent)**	**Structures (Lent)**
	• Understand and use lever and linkage mechanisms. • Distinguish between fixed and loose pivots. • Know and use technical vocabulary relevant to the project.	• Know how to use appropriate equipment and utensils to prepare and combine food. • Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught. • Know and use relevant technical and sensory vocabulary appropriately. • Know how to prepare ingredients hygienically using appropriate utensils.	• Understand how to construct strong, stiff shell structures. • Know the nets of cubes and cuboids and, where appropriate, more complex 3D shapes. • Know and use technical vocabulary relevant to the project.
	Vocabulary: mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output, linear, rotary, oscillating, reciprocating	**Vocabulary:** name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, appearance, smell, preference, moist, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet	**Vocabulary:** shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, decision

Design and Technology

Year 4			
Skills	**Design**	**Make**	**Evaluate**
	• Generate and clarify ideas through discussion with peers to develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. • Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.	• Order the main stages of making. • Select and use appropriate tools to measure, mark out, cut, score, shape and combine with some accuracy related to their products. • Explain their choice of materials according to functional properties and aesthetic qualities. • Select from and use materials and components, including ingredients, construction and electrical components according to their function and properties.	• Investigate and evaluate a range of products including the ingredients, materials, components and techniques that are used. • Test and evaluate their own products against design criteria and the intended user and purpose. • Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.
Knowledge	**Electrical Systems (Advent)**	**Textiles (Lent)**	**Structures (Lent)**
	• Understand and use electrical systems in their products linked to science coverage. • Apply their understanding of computing to program and control their products. • Know and use technical vocabulary relevant to the project.	• Know how to strengthen, stiffen and reinforce existing fabrics. • Understand how to securely join two pieces of fabric together. • Understand the need for patterns and seam allowances. • Know and use technical vocabulary relevant to the project.	• Develop and use knowledge of how to construct strong, stiff shell structures. • Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes. • Know and use technical vocabulary relevant to the project. • Know how to strengthen materials using suitable techniques.
	Vocabulary: series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device	**Vocabulary:** fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance	**Vocabulary:** shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision

Design and Technology

Year 5			
	Design	**Make**	**Evaluate**
Skills	• Generate innovative ideas through research including surveys, interviews and questionnaires. and discussion with peers to develop a design brief and criteria for a design specification. • Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. • Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. and, where appropriate, computer-aided design.	• Produce detailed lists of equipment and fabrics relevant to their tasks .• Write a step-by step plan, including a list of resources required. • Select from and use, a range of appropriate utensils, tools and equipment accurately to measure and combine appropriate ingredients, materials and resources.	• Investigate and analyse products linked to their final product. • Compare the final product to the original design specification and record the evaluations. • Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work
Knowledge	**Textiles (Advent)**	**Mechanisms (Lent)**	**Food (Pentecost)**
	• Produce a 3-D textile product from a combination of accurately made pattern pieces, fabric shapes and different fabrics. • Understand how fabrics can be strengthened, stiffened and reinforced where appropriate. • Know and use technical vocabulary relevant to the project.	• Understand that mechanical and electrical systems have an input, process and an output. • Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement. Know and use technical vocabulary relevant to the project.	• Know how to use utensils and equipment including heat sources to prepare and cook food. • Understand about seasonality in relation to food products and the source of different food products. • Know and use relevant technical and sensory vocabulary.
	Vocabulary: seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings,	**Vocabulary:** pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output	**Vocabulary:** ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble

Design and Technology

Year 6			
Skills	**Design**	**Make**	**Evaluate**
	• Use research using surveys, interviews, questionnaires and web-based resources. to develop a design specification for a range of functional products. • Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. • Generate and develop innovative ideas and share and clarify these through discussion. • Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.	Formulate a step by-step plan to guide making, listing tools, equipment, materials and components. • Competently select from and use appropriate tools to accurately measure, mark, cut and assemble materials, and securely connect electrical components to produce reliable, functional products. • Use finishing and decorative techniques suitable for the product they are designing and making.	• Continually evaluate and modify the working features of the product to match the initial design specification. • Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. • Test the system to demonstrate its effectiveness for the intended user and purpose.
Knowledge	**Food (Advent)**	**Structures (Lent)**	**Electronics (Pentecost)**
	• Know how to use utensils and equipment including heat sources to prepare and cook food. • Understand about seasonality in relation to food products and the source of different food products. • Know how to calculate ratios of ingredients to scale up or down from recipe. • Know how to refine recipes, including ingredients, methods, cooking times and temperatures.	• Understand how to strengthen, stiffen and reinforce 3-D frameworks. • Know and use technical vocabulary relevant to the project.	• Understand and use electrical systems in their products linked to science coverage. • Apply their understanding of computing to program, monitor and control their products. • Know and use technical vocabulary relevant to the project.
	Vocabulary: ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs	**Vocabulary:** frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent	**Vocabulary:** reed switch, toggle switch, push to- make switch, push-to-break switch, light dependent resistor (LDR), tilt switch, light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB

	fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble		cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, series circuit, parallel circuit