



Subject: Design and Technology (DT)

Long Term Plan Including Key Knowledge

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Reception	<ul style="list-style-type: none"> • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • Share their creations, explaining the process they have used. • Make use of props and materials when role playing characters in narratives and stories. • Use a range of small tools, including scissors, paintbrushes and cutlery. • Begin to show accuracy and care when drawing. 					
Year 1	<p>Structures – Freestanding structures <u>General Vocabulary:</u> 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, design, make, evaluate, user, purpose, ideas, design criteria, product, function <u>Technical Vocabulary:</u> freestanding structure; frame structure; shell structure; buttress; brick bonding; mock-up</p> <ul style="list-style-type: none"> • Ask questions about structures • Measuring, marking out, cutting, shaping, joining and finishing techniques • Make freestanding structures stronger, stiffer and more stable 	<p>Food – Preparing fruit and vegetables <u>General Vocabulary:</u> fruit and vegetable names, names of equipment and utensils, sensory vocabulary <i>e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard</i>, flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria <u>Technical Vocabulary:</u> fruit; vegetable; pith; salad; sensory evaluation; kebab</p> <ul style="list-style-type: none"> • Describe healthy, balanced diet referring <i>The Eatwell Plate</i> • Describe appearance and experience of fruit and vegetables using sensory language 	<p>Mechanisms – Sliders and levers <u>General Vocabulary:</u> card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards, design, make, evaluate, user, purpose, ideas, design criteria, product, function <u>Technical Vocabulary:</u> mechanism; lever; slider; slot; pivot; mock-up</p> <ul style="list-style-type: none"> • Understand that different mechanisms produce different types of movement • Know and use the vocabulary related to project 			
Year 2	<p>Mechanisms – Wheels and axles <u>General Vocabulary:</u> vehicle, wheel, body, cab, assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism, names of tools and materials used, design, make, evaluate, purpose, user, criteria, functional <u>Technical Vocabulary:</u> axle; axle holder; chassis; friction; dowel</p> <ul style="list-style-type: none"> • Distinguish between fixed and freely moving axles • Know about and explore straws, clothes pegs and card triangles as axle holders • Know about pros and cons of paper, card, plastic and wood when choosing materials 	<p>Textiles – Templates and joining techniques <u>General Vocabulary:</u> names of existing products, joining and finishing techniques, tools, fabrics, components, mark out, join, decorate, finish, features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function <u>Technical Vocabulary:</u> applique; embroider; fray; glove puppet; seam; sew; template, pattern pieces</p> <ul style="list-style-type: none"> • Use running stitch, over stitch, glue, stapling • Know how to use template to create identical shapes • Explore different finishing techniques – paint, crayons, stitching, sequins, buttons, ribbons 	<p>Food – Preparing fruit and vegetables <u>General Vocabulary:</u> fruit and vegetable names, names of equipment and utensils, sensory vocabulary <i>e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard</i>, flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria <u>Technical Vocabulary:</u> fruit; vegetable; pith; salad; sensory evaluation; kebab</p> <ul style="list-style-type: none"> • Describe healthy, balanced diet referring <i>The Eatwell Plate</i> • Describe appearance and experience of fruit and vegetables using sensory language 			

<p>Year 3</p>	<p>Mechanical Systems – Levers and linkages <u>General Vocabulary:</u> slot, linear, rotary, input, output, oscillating, reciprocating, user, purpose, function, prototype, design criteria, innovative, appealing, design brief <u>Technical Vocabulary:</u> linkage; bridge; guide; system; process; fixed pivot; loose pivot; mechanism; lever; pivot</p> <ul style="list-style-type: none"> • Understand and use lever and linkage mechanisms • Distinguish between fixed and loose pivots • Know and use general and technical vocabulary relevant to the project 	<p>Structures – Shell structures <u>General Vocabulary:</u> three-dimensional (3-D) shape, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, lettering, text, decision, evaluating, design brief design, criteria, innovative, prototype <u>Technical Vocabulary:</u> shell structure; net; scoring; font; graphics; corrugating; ribbing; laminating</p> <ul style="list-style-type: none"> • 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 general and technical vocabulary relevant to the project. 	<p>Food – Healthy and varied diet <u>General Vocabulary:</u> name of products, names of equipment, utensils, techniques and ingredients, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, caught, frozen, tinned, harvested healthy/varied diet, planning, design criteria, purpose, user, annotated sketch, sensory evaluations <u>Technical Vocabulary:</u> grown; reared; processed; seasonal; carbohydrate; protein; fibre; dairy; nutrients</p> <ul style="list-style-type: none"> • 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
<p>Year 4</p>	<p>Textiles – 2-D shape to 3-D product <u>General Vocabulary:</u> fabric, names of fabrics, fastening, structure, finishing technique, strength, weakness, stiffening, templates, seam, user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces, compartment, zip, button <u>Technical Vocabulary:</u> stitch; seam allowance; running stitch; back stitch; backwards running stitch; over sew stitch; blanket stitch; applique; embroider</p> <ul style="list-style-type: none"> • 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 general and technical vocabulary relevant to the project 	<p>Electrical Systems – Simple circuits and switches <u>General Vocabulary:</u> fault, connection, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip control, program, system, input device, output device user, purpose, function, prototype, design criteria, innovative, appealing, design brief <u>Technical Vocabulary:</u> toggle switch; push-to-make switch; push-to-break switch; reed switch; series circuit</p> <ul style="list-style-type: none"> • Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers • Apply their understanding of computing to program and control their products • Know about the dangers of mains electricity • Know and use technical vocabulary relevant to the project 	<p>Structures – Shell structures using computer-aided design <u>General Vocabulary:</u> 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, font, lettering, text, decision, evaluating, design brief design criteria, innovative, prototype <u>Technical Vocabulary:</u> shell structure corrugating; ribbing; laminating; graphics; CAD (Computer Aided Design)</p> <ul style="list-style-type: none"> • Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes • Develop and use knowledge of how to construct strong, stiff shell structures • Use knowledge of purpose to influence graphic colour/size/style • Know and use technical vocabulary relevant to the project
<p>Year 5</p>	<p>Mechanical Systems – Pulleys or gears <u>General Vocabulary:</u> rotation, ratio, transmit, circuit, switch, circuit diagram, annotated drawings, exploded diagrams, mechanical system, electrical system, input, process, output, design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief <u>Technical Vocabulary:</u> motor spindle; mesh; pulley; drive belt; gear; spindle; driver; follower; axle; motor</p> <ul style="list-style-type: none"> • 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 	<p>Structures – Frame structures <u>General Vocabulary:</u> stiffen, strengthen, reinforce, stability, shape, join, temporary, permanent, design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, compression, tension, horizontal, vertical, diagonal <u>Technical Vocabulary:</u> triangulation; frame structure; junior hacksaws; strut; tie</p> <ul style="list-style-type: none"> • Understand how to strengthen, stiffen and reinforce 3 D frameworks • Know and use technical vocabulary relevant to the project 	<p>Textiles – Combining different fabric shapes <u>General Vocabulary:</u> reinforce, right side, wrong side, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, fastenings, design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype <u>Technical Vocabulary:</u> seam; seam allowance; wadding; hem; pinking shears; iron transfer paper; tacking</p> <ul style="list-style-type: none"> • A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics • Fabrics can be strengthened, stiffened and reinforced where appropriate

<p>Year 6</p>	<p>Mechanical Systems – Cams <u>General Vocabulary:</u> framework, rotation, rotary motion, oscillating motion, reciprocating motion, annotated sketches, mechanical system, input movement, process, output, movement, design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief <u>Technical Vocabulary:</u> cam; snail cam; off-centre cam; peg cam; pear shaped cam; follower; axle; shaft; crank; handle; housing; exploded diagrams; dowel, corrugated plastic; junior hacksaw; drill; slider; guide; spacer</p> <ul style="list-style-type: none"> • Understand that mechanical systems have an input, process and an output • Understand how cams can be used to produce different types of movement and change the direction of movement • Know and use technical vocabulary relevant to the project 	<p>Electrical Systems – More complex switches and circuits <u>General Vocabulary:</u> system, monitor, control, program, flowchart, function, innovative, design specification, design brief, user, purpose <u>Technical Vocabulary:</u> series circuit; parallel circuit; names of switches and components (bulb/buzzer etc.); input device; output device</p> <ul style="list-style-type: none"> • Understand and use electrical systems in their products • Apply their understanding of computing to program, monitor and control their products • Know and use technical vocabulary relevant to the project 	<p>Food – Celebrating culture and seasonality <u>General Vocabulary:</u> ingredients, yeast, dough, bran, flour, wholemeal, baking soda, spice, herbs, fat, sugar, healthy, varied, dairy, allergy, intolerance, savoury, source, seasonality, combine, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble, design specification, innovative, research, evaluate, design brief <u>Technical Vocabulary:</u> unleavened; carbohydrate; protein; vitamins; nutrients; nutrition; gluten; fold; knead; utensils; endosperm; germ; yeast</p> <ul style="list-style-type: none"> • 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
----------------------	---	--	---