

DT Medium Term Plan

Using Development Matters: Expressive Arts and Design						
Year Group	Term	Termly Focus	Enquiry questions	Progression within Creating with materials	Knowledge within Creating with materials	Vocabulary
EYFS	Autumn Term	Once upon a time Percy and his friends	Can I control tools? Can I join materials? Can I use tools and join materials to make a Christmas decoration? Which porridge tastes the best and why? How can we make soup?	See EYFS Planning on a Page for Expressive Arts		
	Spring Term	Terrific transport What will I be	Do all vehicles have the same size wheels? How do we go upstairs in a vehicle? Are all buildings the same height? What buildings do we have in Sandiway? How do our senses affect what we want to eat?	See EYFS Planning on a Page for Expressive Arts		
	Summer Term	Superheroes to the rescue Under the Sea		See EYFS Planning on a Page for Expressive Arts		

Using the D and T Association Planning on a Page

Year Group	Term	Key question	Enquiry questions	Progression of DT skills	Progression of DT knowledge	Vocabulary
Year One	Autumn Term	Food <u>Preparing Fruit and Vegetables</u>	1)Can I examine, handle and evaluate a range of fruits and vegetables? (IEAs) 2)Can I hygienically practise food-processing skills? (FTs)	Designing • Design appealing products for a particular user based on simple design criteria.	Children know: • that all food comes from plants or animals • that food has to be farmed, grown elsewhere (e.g. home)	fruit and vegetable names, names of equipment and utensils sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky,

	<p>Can I design, make and evaluate a fruit salad for our reading buddies for sharing as a thank you?</p> <p>Prior Learning</p> <ul style="list-style-type: none"> • Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell. • Experience of cutting soft fruit and vegetables using appropriate utensils. 	<p>3) Can I design a fruit salad based on design criteria? 4) Can I prepare my fruit salad? 5) Can I evaluate my fruit salad?</p>	<ul style="list-style-type: none"> • Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. • Communicate these ideas through talk and drawings. <p>Making</p> <ul style="list-style-type: none"> • Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. • Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. <p>Evaluating</p> <ul style="list-style-type: none"> • Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. • Evaluate ideas and finished products against design criteria, including intended user and purpose. 	<p>or caught</p> <p>Children know:</p> <ul style="list-style-type: none"> • that everyone should eat at least five portions of fruit and vegetables every day • how to prepare simple dishes safely and hygienically, without using a heat source • how to use techniques such as cutting, peeling and grating 	<p>smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core,</p> <p>slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria</p>
Spring Term	<p>Mechanisms <u>Sliders and levers</u></p> <p>Can I design, make and evaluate a card for my Mum for Mother's Day)?</p> <p>Prior learning</p> <ul style="list-style-type: none"> • experiences of working with paper and card to make simple flaps and hinges. • Experience of simple cutting, shaping and joining skills using scissors, glue, 	<p>1) Can I explore and evaluate a collection of books and everyday products that have moving parts, including those with levers and sliders? (IEAs) 2) Can I make simple levers and sliders? (FTs) 3) Can I design a greeting card that contains a simple mechanism? 4) Can I make my greeting card? 5) Can I evaluate my greeting card?</p>	<p>Designing</p> <ul style="list-style-type: none"> • Generate ideas based on simple design criteria and their own experiences, explaining what they could make. • Develop, model and communicate their ideas through drawings and mock-ups with card and paper. <p>Making</p> <ul style="list-style-type: none"> • Plan by suggesting what to do next. • Select and use tools, explaining their choices, to 	<p>Children can:</p> <p>Explore and use sliders and levers.</p> <ul style="list-style-type: none"> • Understand that different mechanisms produce different types of movement. • Know and use technical vocabulary relevant to the project. 	<p>slider, lever, pivot, slot, bridge/guide card, masking tape, paper fastener, join pull, push, up, down, straight, curve, forwards, backwards design, make, evaluate, user, purpose, ideas, design criteria, product, function</p>

	paper fasteners and masking tape.		cut, shape and join paper and card. <ul style="list-style-type: none"> • Use simple finishing techniques suitable for the product they are creating. Evaluating <ul style="list-style-type: none"> • Explore a range of existing books and everyday products that use simple sliders and levers. • Evaluate their product by discussing how well it works in relation to the purpose and the user and whether it meets design criteria. 		
Summer Term	<p style="text-align: center;">Structures</p> <p style="text-align: center;"><u>Freestanding structures</u></p> <p>Can I design, make and evaluate a chair for our teddy to sit on?</p> <p>Prior learning</p> <ul style="list-style-type: none"> • Experience of using construction kits to build walls, towers and frameworks. • Experience of using of basic tools e.g. scissors or hole punches with construction materials e.g. plastic, card. • Experience of different methods of joining card and paper. 	<p>1)(IEAs) Can I explore chairs and benches?</p> <p>2)(FTs) Can I build and explore a variety of freestanding structures using construction kits?</p> <p>3)(FTs) Can I fold paper or card in different ways to make freestanding structures, using masking tape to make joins?</p> <p>4) Can I design a chair for my teddy based on our design criteria?</p> <p>5)Can I make my chair?</p> <p>6) Can I evaluate my chair?</p>	<p>Designing</p> <ul style="list-style-type: none"> • Generate ideas based on simple design criteria and their own experiences, explaining what they could make. • Develop, model and communicate their ideas through talking, mock-ups and drawings. <p>Making</p> <ul style="list-style-type: none"> • Plan by suggesting what to do next. • Select and use tools, skills and techniques, explaining their choices. • Select new and reclaimed materials and construction kits to build their structures. 	<p>Children have:</p> <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Know how to make free-standing structures stronger, stiffer and more stable. • Know and use technical vocabulary relevant to the project. 	<p>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,</p>

			<ul style="list-style-type: none"> • Use simple finishing techniques suitable for the structure they are creating. <p>Evaluating</p> <ul style="list-style-type: none"> • Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings. • Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. 		
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Year Two	Autumn Term	<p style="text-align: center;">Textiles <u>Templates and joining</u></p> <p>Can I design, make and evaluate a decoration for a parent/grandparent for their Christmas tree?</p> <p>Prior learning</p> <ul style="list-style-type: none"> • Explored and used different fabrics. • Cut and joined fabrics with simple techniques. • Thought about the user and purpose of products. 	<p>1) Can I explore and evaluate existing Christmas tree decorations? (IEAs)</p> <p>2) Can I explore marking out, joining and finishing techniques? (FTs)</p> <p>3) Can I design a Christmas decoration that I could give as a gift?</p> <p>4) Can I make my Christmas decoration?</p> <p>5) Can I evaluate my Christmas decoration?</p>	<p>Designing</p> <ul style="list-style-type: none"> • Design a functional and appealing product for a chosen user and purpose based on simple design criteria. • Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology. <p>Making</p> <ul style="list-style-type: none"> • Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing. • Select from and use textiles according to their characteristics. <p>Evaluating</p>	<p>Children:</p> <ul style="list-style-type: none"> • 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 e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons. • Know and use technical vocabulary relevant to the project. 	<p>Names of existing products e.g. bauble, joining and finishing techniques, tools, fabrics and components</p> <p>template, pattern pieces, mark out, join, decorate, finish features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function</p>

				<ul style="list-style-type: none"> • Explore and evaluate a range of existing textile products relevant to the project being undertaken. • Evaluate their ideas throughout and their final products against original design criteria. 		
Spring Term	<p>Mechanisms <u>Wheels and Axels</u> Can I design, make and evaluate a toy vehicle for friends to play with?</p> <p>Prior learning</p> <ul style="list-style-type: none"> • Assembled vehicles with moving wheels using construction kits. • Explored moving vehicles through play. • Gained some experience of designing, making and evaluating products for a specified user and purpose. • Developed some cutting, joining and finishing skills with card. 	<p>1)(IEAs)Can I explore and evaluate a range of wheeled products? 2)(FTs) Can I use construction kits with wheels and axles, to make a product that moves? 3) (FTs) Can I explore how wheels and axles may be assembled as either fixed axles or free axles? 4) Using simple success criteria , can I design my vehicle? 5) Can I make my vehicle 6) Can I evaluate my vehicle?</p>	<p>Designing</p> <ul style="list-style-type: none"> • Generate initial ideas and simple design criteria through talking and using own experiences. • Develop and communicate ideas through drawings and mock-ups. <p>Making</p> <ul style="list-style-type: none"> • Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing. • Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics. <p>Evaluating</p> <ul style="list-style-type: none"> • Explore and evaluate a range of products with wheels and axles. • Evaluate their ideas throughout and their products against original criteria. 	<p>Children have:</p> <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Explore and use wheels, axles and axle holders. • Distinguish between fixed and freely moving axles. • Know and use technical vocabulary relevant to the project. 	<p>vehicle, wheel, axle, axle holder, chassis, body, cab assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism names of tools, equipment and materials used design, make, evaluate, purpose, user, criteria, functional</p>	

Summer Term	<p align="center">Food <u>Preparing Fruit and Vegetables</u></p> <p>Can I design, make and evaluate a fruit yoghurt for our parents to enjoy?</p> <p>Prior Learning</p> <ul style="list-style-type: none"> • Experience of common fruit and vegetables, undertaking sensory activities i.e. appearance taste and smell. • Experience of cutting soft fruit and vegetables using appropriate utensils. 	<p>1) Can I examine, handle and evaluate a range of fruits and vegetables? (IEAs)</p> <p>2) Can I hygienically practise food-processing skills? (FTs)</p> <p>3) Can I design a fruit yoghurt based on design criteria?</p> <p>4) Can I prepare my fruit yoghurt?</p> <p>5) Can I evaluate my fruit yoghurt?</p>	<p>Designing</p> <ul style="list-style-type: none"> • Design appealing products for a particular user based on simple design criteria. • Generate initial ideas and design criteria through investigating a variety of fruit and vegetables. • Communicate these ideas through talk and drawings. <p>Making</p> <ul style="list-style-type: none"> • Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely. • Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product. <p>Evaluating</p> <ul style="list-style-type: none"> • Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences. • Evaluate ideas and finished products against design criteria, including intended user and purpose. 	<p>Children know:</p> <ul style="list-style-type: none"> • that all food comes from plants or animals • that food has to be farmed, grown elsewhere (e.g. home) or caught <p>Children know:</p> <ul style="list-style-type: none"> • that everyone should eat at least five portions of fruit and vegetables every day • how to prepare simple dishes safely and hygienically, without using a heat source • how to use techniques such as cutting, peeling and grating 	<p>fruit and vegetable names, names of equipment and utensils</p> <p>sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard flesh, skin, seed, pip, core,</p> <p>slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria</p>
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Year Three	Autumn Term	<p>Food <u>Healthy and Varied Diet</u></p> <p>Can I design, make and evaluate a sandwich for my class friends for a picnic?</p>	<p>1) Can I explore and gather information about a range of food products used for picnics? (IEAs)</p>	<p>Designing</p> <ul style="list-style-type: none"> • Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and 	<p>Children know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens)</p>	<p>Name of products e.g. wrap, pitta, sandwich, names of equipment, utensils, techniques and ingredients</p>

	<p>Prior learning</p> <ul style="list-style-type: none"> • Know some ways to prepare ingredients safely and hygienically. • Have some basic knowledge and understanding about healthy eating and <i>The eatwell plate</i>. • Have used some equipment and utensils and prepared and combined ingredients to make a product. 	<p>2) Can I prepare food using preparation techniques using existing recipes? (FTs)</p> <p>3) Can I design a festive sandwich based on design criteria?</p> <p>4) Can I prepare my festive sandwich?</p> <p>5) Can I evaluate my festive sandwich?</p>	<p>aroma for an appealing product for a particular user and purpose.</p> <ul style="list-style-type: none"> • Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas. <p>Making</p> <ul style="list-style-type: none"> • Plan the main stages of a recipe, listing ingredients, utensils and equipment. • Select and use appropriate utensils and equipment to prepare and combine ingredients. • Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. <p>Evaluating</p> <ul style="list-style-type: none"> • Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. • Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. 	<p>and cattle) and caught (such as fish) in the UK, Europe and the wider world</p> <p>Children know:</p> <ul style="list-style-type: none"> • how to prepare savoury dishes safely and hygienically. • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking • that a healthy diet is made up from a variety and balance of different food and drink, as depicted in the eatwell plate • that to be active and healthy, food and drink are needed to provide energy for the body 	<p>texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet</p> <p>planning, design criteria, purpose, user, annotated sketch, sensory</p>
Spring Term	<p>Mechanical Systems</p> <p><u>Levers and linkages</u></p> <p>Can I design, make and evaluate an information</p>	<p>1)(IEAs) Can I investigate, analyse and evaluate books which have a range of lever and linkage mechanisms?</p>	<p>Designing</p> <ul style="list-style-type: none"> • Generate realistic ideas and their own design criteria 	<p>Children have:</p> <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Understand and use lever and linkage mechanisms. 	<p>Mechanism, lever, linkage, pivot, slot, bridge, guide, system, input, process, output, linear, rotary, oscillating, reciprocating,</p>

	<p>book for a younger child to entertain them?</p> <p>Prior learning</p> <ul style="list-style-type: none"> • Explored and used mechanisms such as flaps, sliders and levers. • Gained experience of basic cutting, joining and finishing techniques with paper and card. 	<p>2)(FTs) Can I practise using and constructing lever and linkage mechanisms?</p> <p>3)Considering the purpose, Can I design a small information book to entertain young children?</p> <p>4)Can I make my information book with levers and sliders?</p> <p>5)Can I evaluate the success of my information book?</p>	<p>ria through discussion, focusing on the needs of the user.</p> <ul style="list-style-type: none"> • Use annotated sketches and prototypes to develop, model and communicate ideas. <p>Making</p> <ul style="list-style-type: none"> • Order the main stages of making. • Select from and use appropriate tools with some accuracy to cut, shape and join paper and card. • Select from and use finishing techniques suitable for the product they are creating. <p>Evaluating</p> <ul style="list-style-type: none"> • Investigate and analyse books and, where available, other products with lever and linkage mechanisms. • Evaluate their own products and ideas against criteria and user needs, as they design and make. 	<ul style="list-style-type: none"> • Distinguish between fixed and loose pivots. • Know and use technical vocabulary relevant to the project. 	<p>user, purpose, function, prototype, design criteria, innovative, appealing, design, brief</p>
Summer Term	<p>Textiles <u>2D to 3D</u> Can I design, make and evaluate a sunglasses bag for myself to use on the beach in summer?</p> <p>Prior learning</p>	<p>1)(IEAs) Can I investigate a range of sunglasses bags?</p> <p>2)(IEAs) Can I disassemble textiles products to gain an understanding of 3-D shape, patterns and seam allowances?</p> <p>3)(FTs) Can I create a paper pattern using 2-D shapes?</p>	<p>Designing</p> <ul style="list-style-type: none"> • Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s. • Produce annotated sketches, prototypes, final 	<p>Children have:</p> <p>Technical knowledge and understanding</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. 	<p>fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance</p> <p>user, purpose, design, model, evaluate, prototype, annotated sketch,</p>

	<ul style="list-style-type: none"> • Have joined fabric in simple ways by gluing and stitching. • Have used simple patterns and templates for marking out. • Have evaluated a range of textile products. 	<p>4) (FTs) Can I explore a variety of joining and finishing stitch techniques?</p> <p>5) Can I design my own sunglasses bag?</p> <p>6) Can I assemble my own sunglasses bag?</p> <p>7) Can I evaluate how effective my sunglasses bag is?</p>	<p>product sketches and pattern pieces.</p> <p>Making</p> <ul style="list-style-type: none"> • Plan the main stages of making. • Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing. • Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern. <p>Evaluating</p> <ul style="list-style-type: none"> • Investigate a range of 3-D textile products relevant to the project. • Test their product against the original design criteria and with the intended user. • Take into account others' views. • Understand how a key event/individual has influenced the development of the chosen product and/or fabric. 	<ul style="list-style-type: none"> • Understand the need for patterns and seam allowances. • Know and use technical vocabulary relevant to the project 	<p>functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces</p>
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Year Four	Autumn Term	<p>Structures</p> <p><u>Shell Structures with CAD</u></p> <p>Can I design, make and evaluate a gift box for my buddy for holding a present?</p>	<p>1) Can I investigate, explore and evaluate existing shell structures including packaging? (IEAs)</p> <p>2) Can I explore CAD to make nets? (FTs)</p>	<p>Designing</p> <ul style="list-style-type: none"> • Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and the functional and aesthetic purposes of the product. 	<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. 	<p>shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity</p>

		<p>Prior learning</p> <ul style="list-style-type: none"> • Experience of using different joining, cutting and finishing techniques with paper and card. • A basic understanding of 2-D and 3-D shapes in mathematics and the physical properties and everyday uses of materials in science. • Familiarity with general purpose software that can be used to draw accurate shapes, such as Microsoft Word, or simple computer-aided design (CAD), such as 2D Primary by Techsoft. 	<p>3? Can I practise making nets out of card? (FTs) 4)Can I design a mystery box based on a design brief? 4)Can I produce my mystery box with the support of CAD? 5) Can I evaluate my mystery box?</p>	<ul style="list-style-type: none"> • Develop ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas. <p>Making</p> <ul style="list-style-type: none"> • Plan the order of the main stages of making. • Select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy. • Explain their choice of materials according to functional properties and aesthetic qualities. • Use computer-generated finishing techniques suitable for the product they are creating. <p>Evaluating</p> <ul style="list-style-type: none"> • Investigate and evaluate a range of shell structures including the materials, components and techniques that have been used. • Test and evaluate their own products against design criteria and the intended user and purpose. 	<ul style="list-style-type: none"> • Know and use technical vocabulary relevant to the project. 	<p>marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating font, lettering, text, graphics, decision, evaluating, design brief design criteria, innovative, prototype</p>
Summer Term	<p>Food <u>Healthy and Varied Diet</u></p> <p>Can I design, make and evaluate a salad snack for our parents lunch to maintain a healthy diet?</p> <p>Prior learning</p>	<p>1)Can I explore and gather information about a range of food products used for healthy snacks? (IEAs) 2)Can I prepare food using preparation techniques using existing recipes? (FTs) 3)Can I design a salad snack based on design criteria? 4)Can I prepare my salad snack?</p>	<p>Designing</p> <ul style="list-style-type: none"> • Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose. • Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to 	<p>Children know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world</p> <p>Children know:</p> <ul style="list-style-type: none"> • how to prepare savoury dishes safely and hygienically. 	<p>Name of products e.g. wrap, pitta, sandwich, names of equipment, utensils, techniques and ingredients texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet</p>	

	<ul style="list-style-type: none"> • Know some ways to prepare ingredients safely and hygienically. • Have some basic knowledge and understanding about healthy eating and <i>The eatwell plate</i>. • Have used some equipment and utensils and prepared and combined ingredients to make a product. 	5) Can I evaluate my salad snack?	<p>develop and communicate ideas.</p> <p>Making</p> <ul style="list-style-type: none"> • Plan the main stages of a recipe, listing ingredients, utensils and equipment. • Select and use appropriate utensils and equipment to prepare and combine ingredients. • Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics. <p>Evaluating</p> <ul style="list-style-type: none"> • Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs. • Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. 	<ul style="list-style-type: none"> • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking • that a healthy diet is made up from a variety and balance of different food and drink, as depicted in the eatwell plate • that to be active and healthy, food and drink are needed to provide energy for the body 	planning, design criteria, purpose, user, annotated sketch, sensory
Spring Term	<p>Electrical Systems</p> <p><u>Simple programming and control</u></p> <p>Can I design, make and evaluate a night light to comfort a young child?</p> <p>Prior learning</p> <ul style="list-style-type: none"> • Constructed a simple series electrical circuit, using bulbs, batteries, switches and buzzers. • Cut and joined a variety of construction materials, such as wood, card, plastic, 	<p>1)(IEAs) Can I discuss, investigate and, disassemble different examples of battery-powered products?</p> <p>2)(FTs) Can I review and recap on how to make an effective simple circuit?</p> <p>3) (FTs) Can I practise the use of a simple computer control program?</p> <p>4) Can I design a night light to comfort young children?</p> <p>5) Can I make my night light?</p> <p>6)Can I evaluate the success of my nightlight?</p>	<p>Designing</p> <ul style="list-style-type: none"> • Gather information about users' needs and wants, and develop design criteria to inform the design of products that are fit for purpose. • Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams. <p>Making</p> <ul style="list-style-type: none"> • Order the main stages of making. 	<p>Children have:</p> <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Understand and use computing to program and control products containing electrical systems, such as series circuits incorporating switches, bulbs and buzzers. • Know and use technical vocabulary relevant to the project. 	<p>series circuit,fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, light emitting diode (LED), bulb, bulb holder, USB cable,wire, insulator, conductor, crocodile clip</p> <p>control, program, system, input device, output device, process</p> <p>user, purpose, function, prototype, design criteria, innovative, appealing, design brief</p>

	reclaimed materials and glue.		<ul style="list-style-type: none"> • Select from and use tools and equipment to cut, shape, join and finish with some accuracy. • Connect simple electrical components and a battery in a series circuit to achieve a functional outcome. • Program a standalone control box, microcontroller or interface box to enhance the way the product works. <p>Evaluating</p> <ul style="list-style-type: none"> • Investigate and analyse a range of existing battery-powered products, including pre-programmed and programmable products. • Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. 		
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Year Group	Term	Key question	Enquiry questions	Progression of DT skills	Progression of DT knowledge	Vocabulary
Year Five	Autumn Term	<p style="text-align: center;">Food</p> <p style="text-align: center;"><u>Celebrating seasonality</u></p> <p>Can I design, make and evaluate scones for me to share at the King's Coronation?</p> <p>Prior learning</p> <ul style="list-style-type: none"> • Have knowledge and understanding about food hygiene, 	1)Can I explore and evaluate existing food products? (IEAs) 2)Can I explore and practise food preparation techniques to enable me to effectively follow a recipe? (FTs) 3)Can I develop a design brief? 4)Can I design a scone following the design brief? 4)Can I follow my own recipe to effectively create scones? 5) Can I evaluate my scones?	<p>Designing</p> <ul style="list-style-type: none"> • Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. • Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. • Use words, annotated sketches and information and communication technology as 	Children know: <ul style="list-style-type: none"> • that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world • that seasons may affect the food available • how food is processed into ingredients that can be eaten or used in cooking 	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,

	<p>nutrition, healthy eating and a varied diet.</p> <ul style="list-style-type: none"> • Be able to use appropriate equipment and utensils, and apply a range of techniques for measuring out, preparing and combining ingredients. 	(Make links to Roberts Bakery visit)	<p>appropriate to develop and communicate ideas.</p> <p>Making</p> <ul style="list-style-type: none"> • Write a step-by-step recipe, including a list of ingredients, equipment and utensils • Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. • Make, decorate and present the food product appropriately for the intended user and purpose. <p>Evaluating</p> <ul style="list-style-type: none"> • Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams. • Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. • Understand how key chefs have influenced eating habits to promote varied and healthy diets. 	<p>Children know:</p> <ul style="list-style-type: none"> • how to prepare and cook predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking • <i>that recipes can be adapted to change the appearance, taste, texture and aroma</i> • that different food and drink contain different substances – nutrients, water and fibre – that are needed for health 	<p>whisk, beat, roll out, shape, sprinkle, crumble</p> <p>design specification, innovative, research, evaluate, design brief</p>
Spring Term	<p>Mechanical systems</p> <p><u>Pulleys and Gears</u></p> <p>Can I design, make and evaluate a controllable toy for younger children to play with?</p> <p>Prior learning</p>	<p>1)(IEAs) Can I Investigate, analyse and evaluate existing products that incorporate gear or pulley systems?</p> <p>2)(FTs) Can I investigate gears and/or pulleys?</p> <p>3)(FTs) Can I build a working circuit that incorporates a battery, a motor and a</p>	<p>Designing</p> <ul style="list-style-type: none"> • Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to guide their thinking. 	<p>Children have:</p> <p>Technical knowledge and understanding</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 	<p>pulley, drive belt, gear, rotation, spindle, driver, follower, ratio, transmit, axle, motor</p> <p>circuit, switch, circuit diagram</p> <p>annotated drawings, exploded diagrams</p>

	<ul style="list-style-type: none"> • Experience of axles, axle holders and wheels that are fixed or free moving. • Basic understanding of electrical circuits, simple switches and components. • Experience of cutting and joining techniques with a range of materials including card, plastic and wood. • An understanding of how to strengthen and stiffen structures. 	<p>handmade switch, such as a reversing switch?</p> <p>4) Using meaningful design brief, Can I design a controllable toy?</p> <p>5) Can I make a high quality controllable toy?</p> <p>6) Can I Critically evaluate the quality of the design, the manufacture, functionality, innovation shown and fitness for the intended user and <u>purpose</u>?</p>	<ul style="list-style-type: none"> • Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. <p>Making</p> <ul style="list-style-type: none"> • Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team. • Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost. <p>Evaluating</p> <ul style="list-style-type: none"> • Compare the final product to the original design specification. • 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. • Investigate famous manufacturing and engineering companies relevant to the project. 	<p>speed up, slow down or change the direction of movement.</p> <ul style="list-style-type: none"> • Know and use technical vocabulary relevant to the project. 	<p>mechanical system, electrical system, input, process, output</p> <p>design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief</p>
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<p>Summer Term</p>	<p style="text-align: center;">Structures <u>Framed Structures</u></p> <p>Can I design, make and evaluate a market stall for a summer fair?</p> <p>Prior learning</p> <ul style="list-style-type: none"> • Experience of using measuring, marking out, cutting, joining, shaping and finishing techniques with construction materials. • Basic understanding of what structures are and how they can be made stronger, stiffer and more stable. 	<p>1)(IEAs) Can I investigate and make annotated drawings of a range of portable and permanent frame structures?</p> <p>2)(IEAs) Can I research key events and individuals related to the design and building of frame structures?</p> <p>3)(FTs) Can I develop skills and techniques by practising how frame structures may be made?</p> <p>4) Following an agreed brief, Can I design my own small-scale frame structure?</p> <p>5) Can I make my product with accuracy?</p> <p>6) Can I evaluate my completed product, drawing on the design specification, and thinking about the intended purpose and user?</p>	<p>Designing</p> <ul style="list-style-type: none"> • Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources. • Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost. • Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches. <p>Making</p> <ul style="list-style-type: none"> • Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used. • Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. • Use finishing and decorative techniques suitable for the product they are designing and making. <p>Evaluating</p> <ul style="list-style-type: none"> • Investigate and evaluate a range of existing frame structures. 	<p>Children have:</p> <p>Technical knowledge and understanding</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>frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional</p>
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Year Group	Term	Key question	Enquiry questions	Progression of DT skills	Progression of DT knowledge	Vocabulary
	Autumn Term	<p style="text-align: center;">Food <u>Celebrating culture</u></p> <p>Can I design, make and evaluate a vegetarian dish appropriate for Sikh Langar?</p> <p>Cobbler/stew and dumplings etc.</p> <p>Prior learning</p> <ul style="list-style-type: none"> • Have knowledge and understanding about food hygiene, nutrition, healthy eating and a varied diet. • Be able to use appropriate equipment and utensils, and apply a range of techniques for measuring out, preparing and combining ingredients 	1) Can I explore and evaluate existing food products? (IEAs) 2) Can I explore and practise food preparation techniques to enable me to effectively follow a recipe? (FTs) 3) Can I develop a design brief? 4) Can I design a Langar stew following the design brief? 4) Can I follow my own recipe to effectively create a vegetarian Langar stew? 5) Can I evaluate my Langar stew?	<p>Designing</p> <ul style="list-style-type: none"> • Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification. • Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose. • Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas. <p>Making</p> <ul style="list-style-type: none"> • Write a step-by-step recipe, including a list of ingredients, equipment and utensils • Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. • Make, decorate and present the food product appropriately 	<p>Children know:</p> <ul style="list-style-type: none"> • that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world • that seasons may affect the food available • how food is processed into ingredients that can be eaten or used in cooking <p>Children know:</p> <ul style="list-style-type: none"> • how to prepare and cook predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source • how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking 	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 specification, innovative, research, evaluate, design brief

				<p>for the Autumn Term intended user and purpose.</p> <p>Evaluating</p> <ul style="list-style-type: none"> • Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams. • Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements. • Understand how key chefs have influenced eating habits to promote varied and healthy diets. 	<ul style="list-style-type: none"> • <i>that recipes can be adapted to change the appearance, taste, texture and aroma</i> • that different food and drink contain different substances – nutrients, water and fibre – that are needed for health 	
Year Six	Spring Term	<p>Electrical systems <u>Monitoring and control</u></p> <p>Can I design, make and evaluate a car alarm for my parents for protecting their car?'</p> <p>Prior learning</p> <ul style="list-style-type: none"> • Initial experience of using computer control software and an interface box, a standalone box or microcontroller, e.g. Crumble. • Some experience of writing and modifying a program to make a light turn on or flash on and off. • Understanding of the essential characteristics of a series circuit and experience of 	<p>1) Can I draw on my science understanding, to explore electrical systems that could be used to control products?</p> <p>2) Can I discuss and investigate a range of relevant products that respond to changes in the environment using a computer control program?</p> <p>3) Can I draw on my computing knowledge, writing and modifying computer control programs that include inputs, outputs and decision making?</p> <p>4) Can I design an electronic car alarm following our agreed design brief?</p> <p>6) Can I make a high quality computer controlled electronic car alarm?</p>	<p>Designing</p> <ul style="list-style-type: none"> • Develop a design specification for a functional product that responds automatically to changes in the environment. • Generate, develop and communicate ideas through discussion, annotated sketches and pictorial representations of electrical circuits or circuit diagrams. <p>Making</p> <ul style="list-style-type: none"> • Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components. • Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product. 	<ul style="list-style-type: none"> • Understand and use electrical systems in their products. • Understand the use of computer control systems in products. • Apply their understanding of computing to program, monitor and control their products. • Know and use technical vocabulary relevant to the project. 	<p>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 cable, wire, insulator, conductor, crocodile clip control, program, system, input device, output device, series circuit, parallel circuit function, innovative, design specification, design brief, user, purpose</p>

		creating a battery-powered, functional, electrical product.	5) Can I evaluate my electronic car alarm?	<ul style="list-style-type: none"> • Create and modify a computer control program to enable their electrical product to respond to changes in the environment. Evaluating <ul style="list-style-type: none"> • Continually evaluate and modify the working features of the product to match the initial design specification. • Test the system to demonstrate its effectiveness for the intended user and purpose. 		
Summer Term	<p align="center">Textiles</p> <p align="center"><u>Using CAD in textiles</u></p> <p>Can I design, make and evaluate a hat for myself for our end of term performance?</p> <p>Prior learning</p> <ul style="list-style-type: none"> • Experience of stitching, joining and finishing techniques in textiles. • Experience of making and using textiles pattern pieces. • Experience of simple computer-aided design applications. 	<p>1)(IEAs) Can I investigate and evaluate a range of existing textiles products and how they have been constructed using disassembly?</p> <p>2)(IEAs) Can I investigate properties of textiles through investigation? e.g. exploring insulating properties, water resistance, wear and strength of textiles.</p> <p>3)(FTs) Can I develop computer-aided design (CAD) skills by using pattern making software?</p> <p>4) (FTs)Can I develop skills of sewing techniques?</p> <p>5) Using an authentic and meaningful design brief, Can I design _____?</p> <p>6) Can I make a high quality product applying</p>	<p>Designing</p> <ul style="list-style-type: none"> • Generate innovative ideas through research including surveys, interviews and questionnaires. • Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes including using computer-aided design. • Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification. <p>Making</p> <ul style="list-style-type: none"> • Produce detailed lists of equipment and fabrics relevant to their tasks. 	<p>Children have:</p> <p>Technical knowledge and understanding</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>computer aided design (CAD), computer aided manufacture (CAM) font, lettering, text, graphics, menu, scale, modify, repeat, copy, flip design brief, design criteria, design decisions, innovative, prototype seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces names of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper annotate, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype</p>	

		<p>knowledge, understanding and skills?</p> <p>7) Can I Critically evaluate the quality of the design, the manufacture, functionality, innovation and fitness for intended user and purpose, considering others' opinions?</p>	<ul style="list-style-type: none">• Formulate step-by-step plans and, if appropriate, allocate tasks within a team.• Select from and use a range of tools and equipment, including CAD, to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost. <p>Evaluating</p> <ul style="list-style-type: none">• Investigate and analyse textile products linked to their final product.• Compare the final product to the original design specification.• Test products with intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.• Consider the views of others to improve their work.		
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