



Design and Technology Curriculum Map

2020-2021



Year 1	Autumn	Spring	Summer
Unit Title	Mechanisms: Slides and Leavers	Structures: Free Standing Structures	Taste Ed: Our Five Senses
Outcome	Children will design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose).	Children will design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose).	Children will learn how to use their senses to explore different foods and finish by making a healthy sandwich.
Key Vocabulary	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	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	Colours: red, orange, yellow, green, purple, crimson, scarlet, golden, sunset-yellow Size and comparatives: big, small, medium, bigger, biggest, smaller, smallest Shapes: blocky, round, circular, sphere, long, cone-shaped, square shaped, even, uneven, misshapen, crescent, Surface: shiny, smooth, hard, slippery, bumpy, dimpled, Pith: stringy, net-like, netted Similes like a bell, like a 3D triangle, like a square football, like a slipper (Romano), like a teardrop, like a building block Taste: sweet, sour, salty, bitter, floral, zesty, Texture: crunchy, soft, creamy, juicy, firm, watery, crispy, squelchy Sound: loud, quiet, silent, Smell: herbal, fresh, cheesy, garlicky, strong, weak Sight: red, green, yellow, purple, multi-coloured, ripe,
Knowledge Learnt	<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 cut, shape and join paper and card. • Use simple finishing techniques suitable for the product they are creating. <p>Evaluating</p> <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. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Explore and use sliders and levers. • Understand that different mechanisms produce different types of movement. 	<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. • 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. <p>Technical knowledge and understanding</p>	<p>National Curriculum</p> <p>Where food comes from</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>Food preparation, cooking and nutrition</p> <ul style="list-style-type: none"> • how to name and sort foods into the five groups in The eatwell plate • 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>Taste Ed</p> <ul style="list-style-type: none"> • Children know the names of different types of peppers and the look and taste different. • Children will be able to explain the different sensations we have when we touch different parts of a tangerine. • Children will know the names of at least 3 salad vegetables e.g. lettuce, red chicory, sugarsnap pea, radish.

	<ul style="list-style-type: none"> • Know and use technical vocabulary relevant to the project. 	<ul style="list-style-type: none"> • Know how to make freestanding structures stronger, stiffer and more stable. • Know and use technical vocabulary relevant to the project. 	<ul style="list-style-type: none"> • Children will be able to describe the different levels of crunchiness between different salad vegetables. • Children will be able to name a range of different fruits e.g. strawberries, raspberries, peach or nectarine, blueberries, apple, grapes, lemon, orange. • Children will be able to describe the small of different fruits and why they like some more than others.
Educational Visits			Children can visit the local greengrocers / super market to look at fresh fruit on display.
Key Texts			<p>Green is a Chile Pepper by Roseanne Greenfield Thong – available on Youtube (https://www.youtube.com/watch?v=vlo_wXlasw8)</p> <p>Handa’s Surprise by Eileen Browne</p> <p>Oliver’s Vegetables by Vivian French</p> <p>We’re Going on a Picnic by Pat Hutchins</p> <p>The Giant Jam Sandwich by John Vernon Lord</p> <p>Where on Earth is My Bagel by Frances Park</p>
Curriculum Links	<p>Investigative and Evaluative Activities (IEAs)</p> <ul style="list-style-type: none"> • Spoken language – participate in discussion about books and other products with moving parts, taking turns and listening to what others say. Ask relevant questions to extend their knowledge and understanding. Build technical and directional vocabulary. <p>Focused Tasks (FTs)</p> <ul style="list-style-type: none"> • Spoken language – children listen and respond appropriately to adults. Ask relevant questions to extend their knowledge and understanding. Build technical and directional vocabulary. • Mathematics – describe position, direction and movement. Use appropriate standard and non-standard measures. <p>Design, Make and Evaluate Assignment (DMEA)</p> <ul style="list-style-type: none"> • Spoken language – ask relevant questions to extend their knowledge and understanding. Build technical and directional vocabulary. Use spoken language to develop understanding through imagining and exploring ideas. • Art and design – use colour, pattern, line, shape. • Computing – digital graphics and text could be incorporated into final products as the background or moving parts. 	<p>Investigative and Evaluative Activities (IEAs)</p> <ul style="list-style-type: none"> • Geography – use simple fieldwork and observational skills to study the geography of their school and its grounds and the key physical features of its surrounding environment. • Spoken language – participate in discussion about various structures, taking turns and listening to what others say. Ask relevant questions to extend their knowledge and understanding. Build technical vocabulary. <p>Focused Tasks (FTs)</p> <ul style="list-style-type: none"> • Mathematics – use appropriate standard and non-standard measures. Recognise and name common 2-D and 3-D shapes. • Science – think about the properties of materials that make them suitable or unsuitable for particular purposes. • Spoken language – ask relevant questions to extend their knowledge and understanding. Build technical vocabulary. <p>Design, Make and Evaluate Assignment (DMEA)</p> <ul style="list-style-type: none"> • Spoken language – ask relevant questions to extend their knowledge and understanding. Build technical vocabulary. Use spoken language to develop understanding through imagining and exploring ideas. • Art and design – use colour, pattern, line, shape. Use and develop drawing skills. • Science – think about the properties of materials that make them suitable or unsuitable for particular purposes. 	<p>Writing: Composing a sentence orally before writing it. (NC p. 24).</p> <p>Cooking and Nutrition: ‘use the basic principles of a healthy and varied diet to prepare dishes’.</p> <p>PSHE - Healthy and Safer Lifestyles:</p> <ul style="list-style-type: none"> • How can I stay as healthy as possible? • What does it feel like to be healthy? • What does healthy eating mean and why is it important? • Why is it important to be active & what are the opportunities for physical activity? • What foods do I like and dislike and why? • What can help us eat healthily? • Why do we need food? • What healthy choices can I make?

Year 2	Autumn	Spring	Summer
Unit Title	Textiles: Templates and joining techniques	Taste Ed: Varieties and Tastes	Mechanisms: Wheels and Axles
Outcome	Children will design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose)	Children will be able to explain how foods taste different when combined together.	Children will design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose)
Key Vocabulary	names of existing products, joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish, features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function	Look: red, green, yellow, brown, crimson, stripy, shiny, smooth, rough, round, spherical, pointy (stalk), freckled, multi-coloured Touch: crinkly, rough, waxy, sticky, wet, dry, hard, soft, bendy, rubbery. Other senses: perfumed, floral, sweet, weak, strong, fresh, lemony, bright, crunchy, noisy, juicy, crispy, nutty, watery, sweet, sour, acid, sharp, rich, zesty, lemony, tangy, squelchy, cracking, hissing, gushing	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
Knowledge Learnt	<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> <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. <p>Technical knowledge and understanding</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>National Curriculum</p> <p>Where food comes from</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>Food preparation, cooking and nutrition</p> <ul style="list-style-type: none"> how to name and sort foods into the five groups in The eatwell plate 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>Taste Ed</p> <ul style="list-style-type: none"> Children will know the names of different apple varieties e.g. Cox, Granny Smith, Braeburn or Golden Delicious or Jazz Children will know the names of different cabbage varieties e.g. savoy, red and white or Hispi. Children will know the names of different types of citrus fruits e.g. blood oranges, Seville oranges, grapefruits, limes, lemons, oranges or clementines Children will know the names of different types of salad vegetables e.g. radish, cherry tomato, sugarsnap pea, basil or mint, carrots including different colours, peppers, baby sweetcorn, button mushrooms, cucumbers, spinach leaves, herbs, lettuce leaves such as Little Gem etc Children will be able to identify sweet and sour foods e.g. Sweet version: Many kinds of berries: strawberries (sweet and sour), gooseberries (sour), raspberries (sweet and floral), blueberries (sweet), blackberries (sweet and earthy), fresh cranberries or dried goji berries (sharp and sweet). Or Savoury version with vegetables and olives: cherry tomatoes cut in half (sweet-sour), fresh peas or 	<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>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>sugarsnap peas (sweet), cauliflower (pungent), cucumber (watery), peppers (sweet), stoneless olives cut in half (salty), lemon slices (sour), carrot slices (sweet), mushroom slices (savoury and earthy), basil leaves (herbal),</p> <ul style="list-style-type: none"> • Rocket or chicory leaves (bitter), small cubes of cheese. 	
Educational Visits		Children can visit the local greengrocers / super market to look at fresh fruit on display.	
Key Texts		<p>The Seasons of Arnold’s Apple Tree by Gail Gibbons (available on Youtube) Katie’s Cabbage by Katie Stagliano When Grandma Gives you a Lemon Tree by J. Deenihan The Pudding Like a Night on the Sea by Ann Cameron, 1981 You Smell! (and so does everything else) by Clive Gifford. Bee-Bim Bop! By Linda Sue Park Chop, Sizzle, Wow: The Silver Spoon Comic Cookbook Bread and Jam for Frances by Russell Hoban</p>	
Curriculum Links	<p>Investigative and Evaluative Activities (IEAs)</p> <ul style="list-style-type: none"> • Spoken language – ask relevant questions to build understanding and their vocabulary. • Art and design – quick drawings or detailed observational drawings of one product to develop and share ideas. <p>Focused Tasks (FTs)</p> <ul style="list-style-type: none"> • Science – everyday materials. Investigate physical properties of fabric types against suitability for the product to be made. • Spoken language – ask questions throughout the process to check understanding, develop vocabulary and build knowledge. Listen and respond to adults. • Art and design – use colour, pattern, texture, and shape as appropriate. <p>Design, Make and Evaluate Assignment (DMEA)</p> <ul style="list-style-type: none"> • Science – use knowledge of properties of everyday materials to select appropriate ones for their products. • Spoken language – ask questions throughout the process to check understanding, develop vocabulary and build knowledge. Explain and articulate their ideas orally. • Art and design – use and develop drawing skills. • Mathematics – measurement using non-standard and standard units. • Computing – use technology purposefully to create and manipulate digital content. 	<p>PSHE - Healthy Lifestyles</p> <ul style="list-style-type: none"> • How can I stay as healthy as possible? • What does it feel like to be healthy? • What does healthy eating mean and why is it important? • Why is it important to be active & what are the opportunities for physical activity? • What foods do I like and dislike and why? • What can help us eat healthily? • Why do we need food? • What healthy choices can I make? <p>Writing: Composing a sentence orally before writing it. Writing narratives about personal experiences.</p> <p>Spoken Language: Give well structured descriptions and explanations.</p>	<p>Investigative and Evaluative Activities (IEAs)</p> <ul style="list-style-type: none"> • Science – working scientifically: ask simple questions and observe closely. Explore use of everyday materials. • Mathematics – number of wheels, more than, less than, equal. • Spoken Language – use of technical vocabulary. Ask relevant questions to extend understanding and build vocabulary and knowledge. <p>Focused Tasks (FTs)</p> <ul style="list-style-type: none"> • Spoken language – give well-structured descriptions and explanations. Develop speaking and listening skills. Learn relevant technical vocabulary. • Mathematics – measuring length using non-standard and standard units. <p>Design, Make and Evaluate Assignment (DMEA)</p> <ul style="list-style-type: none"> • Spoken language – use spoken language to develop understanding through imagining and exploring ideas. • Art and Design – use a range of media and materials creatively to design and make products. • Computing – use technology purposefully to create and manipulate digital content. • Mathematics – measurement using non-standard and standard units.

Year 3	Autumn	Spring	Summer
Unit Title	Structures: Shell structures	Salads and Hummus.	Textiles: 2D shape to 3D product
Outcome	Children will design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose).	Children will learn about to balance foods to create salads and a beetroot hummus.	Children will design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose)
Key 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, evaluating, design brief design criteria, innovative, prototype	soft, hard, crunchy, crispy, loud, noisy, quiet, juicy, wet bumpy, bobbly, lumpy, wet, large, small, ridged, smooth, rough, dry, soft, hard, crunchy, crispy, squishy fresh, grassy, herbal, strong, leafy, weak, lemony, warm, sweet, light, pungent, oniony, smelly, stinky, minty, aromatic, perfumed, aniseedy, sweet, sour, salty, bitter, umami, tangy, earthy, savoury, grainy, pink, deep, strong, weak, garlicky, lemony,	fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance, user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces
Knowledge Learnt	<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 purpose of the product. • Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas. <p>Making</p> <ul style="list-style-type: none"> • Order the main stages of making. • Select and use appropriate tools 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 finishing techniques suitable for the product they are creating. <p>Evaluating</p> <ul style="list-style-type: none"> • Investigate and evaluate a range of existing 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. <p>Technical knowledge and understanding</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 technical vocabulary relevant to the project. 	<p>National Curriculum</p> <p>Where food comes from</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 <p>Food preparation, cooking and nutrition</p> <ul style="list-style-type: none"> • how to prepare and cook a variety of 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 <p>In early KS2 pupils should also know:</p> <ul style="list-style-type: none"> • 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>Taste Ed</p> <ul style="list-style-type: none"> • Children will learn about the different varieties of tomatoes e.g. cherry, big round beefsteak, larger or smaller plum or oval, yellow, orange, in some shops you may see tomatoes that are black, brown or stripy even! • Children will learn how to make simple fruit salad using the sounds fruits make to choose the ingredients. • Children will understand the different types of changes. • Children will know how to construct a herb salad using different herbs e.g. mint, basil, parsley, chives. 	<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 product sketches and pattern pieces. <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. <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. • Understand the need for patterns and seam allowances. • Know and use technical vocabulary relevant to the project.

		<ul style="list-style-type: none"> • Children will learn about different types of corn / maize. • Children will know how to make a beetroot hummus containing all five basic tastes (sweet, sour, salty, bitter and umami). 	
Educational Visits			
Key Texts			
Curriculum Links	<p>Investigative and Evaluative Activities (IEAs)</p> <ul style="list-style-type: none"> • Science – discuss the properties and suitability of materials for particular purposes. • Mathematics – compare and sort common 2-D and 3-D shapes in everyday objects. Recognise 3-D shapes in different orientations and describe them. • Spoken language – ask relevant questions to extend knowledge and understanding. Build their technical vocabulary. <p>Focused Tasks (FTs)</p> <ul style="list-style-type: none"> • Mathematics – use a ruler to measure to the nearest cm, half cm or mm. Draw 2-D shapes and make 3-D shapes using modelling materials. • Computing – design and create digital content on screen, creating nets for their products and combining text with graphics. <p>Design, Make and Evaluate Assignment (DMEA)</p> <ul style="list-style-type: none"> • Spoken language – ask relevant questions to extend knowledge and understanding. Build technical vocabulary. • Art and design – use and develop drawing skills. • Writing – write for real purposes and audiences. • Computing – design and create digital content on screen using computer-aided design (CAD) software, creating nets for their products and combining graphics with text. 		<p>Investigative and Evaluative Activities (IEAs)</p> <ul style="list-style-type: none"> • Science – physical properties of fabrics. • Spoken language – asking and answering questions to develop understanding. Through discussion, participate actively initiating and responding to comments. • Mathematics – nets of shapes and accurate measurements mm/cm. • History – investigating textiles and textile products from age being studied. <p>Focused Tasks (FTs)</p> <ul style="list-style-type: none"> • Computing – opportunity to create pattern pieces using a computer program. • Mathematics – nets of shapes and accurate measurement mm/cm. • Science - identify and compare the suitability of a variety of fabrics for particular uses. • Art and design – investigating visual and tactile qualities of fabrics and using colour and pattern appropriately. • Spoken language – develop technical vocabulary. Give well-structured descriptions of e.g. finishing techniques. <p>Design, Make and Evaluate Assignment (DMEA)</p> <ul style="list-style-type: none"> • Art and design – using a range of tools and decorative techniques. Develop sketching techniques. • Computing – using software to produce pattern pieces and possible use for decorative techniques. • Mathematics – accurate measurements mm/cm. • Spoken language – consideration and evaluation of others' viewpoint. • Writing – written evaluation of their product, organising it under e.g. headings, subheadings.

Year 4	Autumn	Spring	Summer
Unit Title	Mechanical Systems: Levers and linkages	Electrical Systems: Simple circuits and switches	The History of Food
Outcome	Children will design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose).	Children will design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose)	Children will learn how to design their own salad using food common during the Tudor period.
Key Vocabulary	mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output, linear, rotary, oscillating, reciprocating, user, purpose, function prototype, design criteria, innovative, appealing, design brief	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, user, purpose, function, prototype, design criteria, innovative, appealing, design brief	red, crimson, scarlet, purple, black, green, round, heart-shaped, seedy, shiny, spherical, squashy, bright, bumpy, soft, hard, smooth, round, knobbly, seedy, juicy, wet, dry, chewy, earthy, pointy, leafy, loud, quiet, clanking, rattling, sloshing, whirring, pinging, silent, fragrant, minty, fresh, grassy, leafy, piney, resinous, sweet, sour, salty, bitter, umami, sweet-sour, sour-salty, mouth-puckering, fresh, sharp, savoury, sickly, sugary, refreshing, carefully, slowly, finely.
Knowledge Learnt	<p>Designing</p> <ul style="list-style-type: none"> • Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user. • 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. <p>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Understand and use lever and linkage mechanisms. • Distinguish between fixed and loose pivots. • Know and use technical vocabulary relevant to the project. 	<p>Designing</p> <ul style="list-style-type: none"> • Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups. • 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. • Select from and use tools and equipment to cut, shape, join and finish with some accuracy. • Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities. <p>Evaluating</p> <ul style="list-style-type: none"> • Investigate and analyse a range of existing battery-powered products. • Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. <p>Technical knowledge and understanding</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 and use technical vocabulary relevant to the project. 	<p>National Curriculum</p> <p>Where food comes from</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 <p>Food preparation, cooking and nutrition</p> <ul style="list-style-type: none"> • how to prepare and cook a variety of 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 <p>In early KS2 pupils should also know:</p> <ul style="list-style-type: none"> • 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>Taste Ed</p> <ul style="list-style-type: none"> • Children will learn about fruits familiar during Tudor times e.g. fresh strawberries, cherries and dried barberries; vegetables such as potatoes, sweet potatoes, corn on the cob (maize), peppers, tomatoes, onions; herbs e.g. mint, parsley, lavender, juniper, rosemary, thyme, bay, sorrel, fennel. • Children will know which utensils were used in a Tudor kitchen and how to use them e.g. pestle and mortar, wooden spoons.

Educational Visits			
Key Texts			
<p>Curriculum Links</p>	<p>Investigative and Evaluative Activities (IEAs)</p> <ul style="list-style-type: none"> • Spoken language – participate in discussion and evaluation of books and, where available, other products with moving pictures. Ask relevant questions to extend knowledge and understanding. Build technical vocabulary. <p>Focused Tasks (FTs)</p> <ul style="list-style-type: none"> • Mathematics – use the vocabulary of position, direction and movement. Use a ruler to measure to the nearest cm, half cm or mm. • Spoken language – ask relevant questions to extend knowledge and understanding. Build their technical vocabulary. • Art and design – use colour, pattern, line, shape. <p>Design, Make and Evaluate Assignment (DMEA)</p> <ul style="list-style-type: none"> • Spoken language – ask relevant questions to extend knowledge and understanding. Build technical vocabulary. Consider and evaluate different viewpoints. • Computing – digital graphics and text could be incorporated into final products as the background or moving parts. • Art and design – use and develop drawing techniques. Use colour, pattern, line, shape. 	<p>Investigative and Evaluative Activities (IEAs)</p> <ul style="list-style-type: none"> • Science – know how to construct simple series circuits and have a basic understanding of conductors, insulators and open and closed switches. • Spoken language – participate in discussion and evaluation of battery-powered products. Ask relevant questions to extend knowledge and understanding. Build their technical vocabulary. <p>Focused Tasks (FTs)</p> <p>Science – know how to construct simple series circuits and have a basic understanding of conductors, insulators and open and closed switches.</p> <ul style="list-style-type: none"> • Computing – design, write and debug programs that accomplish specific goals, including controlling physical systems. • Spoken language – asking questions to check understanding, develop technical vocabulary and build knowledge. <p>Design, Make and Evaluate Assignment (DMEA)</p> <ul style="list-style-type: none"> • Spoken language – maintain attention and participate actively in collaborative conversations, staying on topic and initiating and responding to comments. Develop understanding through speculating, hypothesising, imagining and exploring ideas. • Science – know how to construct simple series circuits and have a basic understanding of conductors, insulators and open and closed switches. • Computing – design, write and debug programs that accomplish specific goals, including controlling physical systems. • Art and design – using and developing drawing skills. 	<ul style="list-style-type: none"> • History: ‘understand historical concepts such as continuity and change, cause and consequence <p>PSHE - Healthy and Safer Lifestyles</p> <ul style="list-style-type: none"> • What does healthy eating and a balanced diet mean? • What is an active lifestyle and how does it help me to be healthier? • What is mental wellbeing and how is it affected by my physical health? • How much sleep do I need & what happens if I don’t have enough? • How do nutrition and physical activity work together? • How can I plan and prepare simple, healthy meals safely? • How can I look after my teeth and why is it important? • Who is responsible for my lifestyle choices and how are these choices influenced?

Year 5	Autumn	Spring	Summer
Unit Title	Structures: Frame Structures	Variety is the Spice of Life.	Electrical Systems: More complex switches and circuits
Outcome	Children will design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose).	Children will learn about the wide varieties of fruits and vegetables that are available.	Children will design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose).
Key Vocabulary	fame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional	Colours: orange, amber, golden, sunset-yellow Size, shape and comparatives: sphere, circle, crescent, round, big, small, medium, bigger, smaller Surface: bumpy, pock-marked, dimpled, smooth, soft, slippery Pith: stringy, net-like, netted Texture: soft, juicy, firm, watery, it bursts in your mouth, an explosion of juice Taste: Sweet, sour, tart, zesty orange, yellow, red, black, purple, stripy, long, short, conical, cylindrical, dry, hard, hairy Sound: loud, quiet, silent, banging, crunchy, crispy, squelchy, juicy, whispering	series circuit, parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart, function, innovative, design specification, design brief, user, purpose
Knowledge Learnt	<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. Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests. Research key events and individuals relevant to frame structures. <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>Where food comes from</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 <p>In late KS2 pupils should also know:</p> <ul style="list-style-type: none"> that seasons may affect the food available how food is processed into ingredients that can be eaten or used in cooking <p>Food preparation, cooking and nutrition</p> <ul style="list-style-type: none"> how to prepare and cook a variety of 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 <p>In late KS2 pupils should also know:</p> <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 <p>Taste Ed</p> <ul style="list-style-type: none"> Children will learn basic kitchen skills such as peeling and cutting. Children will learn about what a healthy diet consists of. Children will learn about the different varieties of carrot e.g. purple and yellow as well as orange, large ones with green leaves on, small Chantenay ones. Children will learn about the different varieties of 	<p>Designing</p> <ul style="list-style-type: none"> Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take 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. <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. Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment. <p>Evaluating</p> <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. Investigate famous inventors who developed ground-breaking electrical systems and components. <p>Technical knowledge and understanding</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.

		<ul style="list-style-type: none"> • 3 or more other fruits with contrasting scents e.g. lime, raspberries, plum, blueberries, melon slices, orange, purple grapes • Children will learn about an increasing variety of vegetables e.g. Suggestion: little gem, lettuce, spinach leaves, celery, red chicory, peppers, sugarsnap pea, red cabbage, cucumber, radish, peppers, iceberg lettuce, celery, little gem lettuce, small cucumbers, avocados and tomatoes. • Children will learn about an increasing variety of salad vegetables with a range of crunchiness. Suggestion: little gem lettuce, spinach leaves, celery, red chicory, peppers, sugarsnap pea, red cabbage, cucumber, radish. 	
Educational Visits			
Key Texts			
Curriculum Links	<p>Investigative and Evaluative Activities (IEAs)</p> <ul style="list-style-type: none"> • Science – compare and group together everyday materials on the basis of their properties. • Mathematics – identify 3-D shapes, including cubes and other cuboids, from 2-D representations. • Spoken language – ask relevant questions, formulate and express opinions, give well-structured descriptions and explanations. Use relevant strategies to build their vocabulary. • Computing – use technologies for research purposes and be discerning when evaluating digital content. <p>Focused Tasks (FTs)</p> <ul style="list-style-type: none"> • Mathematics – recognise, describe and build simple 3-D shapes. Apply understanding and skill to carry out accurate measuring using standard units i.e. cm/mm. • Spoken language – ask relevant questions, formulate and express opinions, give well-structured descriptions and explanations. Use strategies to build their vocabulary. <p>Design, Make and Evaluate Assignment (DMEA)</p> <ul style="list-style-type: none"> • Spoken language – ask relevant questions, formulate and express opinions, give well-structured descriptions and explanations. Use strategies to build their vocabulary. • Art and design – use and develop drawing skills. • Mathematics – apply understanding and skill to carry out accurate measuring using standard units i.e. cm/mm. 		<p>Investigative and Evaluative Activities (IEAs)</p> <ul style="list-style-type: none"> • Spoken Language – ask relevant questions, give well-structured descriptions and explanations. Build technical vocabulary. • Computing – use technologies for research purposes and be discerning when evaluating digital content. • Science – apply knowledge and understanding of circuits, switches, conductors and insulators. <p>Focused Tasks (FTs)</p> <ul style="list-style-type: none"> • Mathematics – apply understanding and skill to carry out accurate measuring using standard units i.e. cm/mm. • Science – apply knowledge and understanding of circuits, switches, conductors and insulators. • Computing – design, write and debug programs that accomplish specific goals, including controlling physical systems. Use sequence, selection, and repetition in programs. Work with variables and various forms of input and output. <p>Design, Make and Evaluate Assignment (DMEA)</p> <ul style="list-style-type: none"> • Mathematics – apply understanding and skill to carry out accurate measuring using standard units i.e. cm/mm. • Science – apply knowledge and understanding of circuits, switches, conductors and insulators. • Computing – design, write and debug programs that accomplish specific goals, including controlling physical systems. Use sequence, selection, and repetition in programs. Work with variables and various forms of input and output.

Year 6	Autumn	Spring	Summer
Unit Title	Textiles: Combining different fabric shapes	Mechanical Systems: Pulleys or gears	Carrot Soup!
Outcome	Children will design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose).	Children will design, make and evaluate a _____ (product) for _____ (user) for _____ (purpose).	Children will learn how to make carrot soup.
Key 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, iron transfer paper design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-	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, design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief	red, round, spherical, orange, yellow, green, shiny, smooth, oval, pear-shaped, loud, quiet, juicy, squelchy, silent, crunchy, soft, crispy, bumpy, bobbly, lumpy, wet, large, small, ridged, smooth, rough, dry, soft, hard, crunchy, crispy, squishy, bumpy, smooth, rough, spherical, hard, soft, wet, dry, squishy, powdery, juicy, crispy, squashy, slippery, slimy, long, corrugated, seedy, spicy, fresh, minty, Christmassy, warm, peppery, sweet, sharp, sour, salty, bitter, umami, mild, strong, sweet-sour, sour-salty, mouthpuckering, fresh, sharp, savoury, sickly, sugary, refreshing,
Knowledge Learnt	<p>Designing</p> <ul style="list-style-type: none"> • Generate innovative ideas by carrying out research including surveys, interviews and questionnaires. • Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, 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. • 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 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 and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose. • Consider the views of others to improve their work. <p>Technical knowledge and understanding</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. • 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 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>Technical knowledge and understanding</p> <ul style="list-style-type: none"> • Understand that mechanical and electrical systems have an input, process and an output. 	<p>Where food comes from</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 <p>In late KS2 pupils should also know:</p> <ul style="list-style-type: none"> • that seasons may affect the food available • how food is processed into ingredients that can be eaten or used in cooking <p>Food preparation, cooking and nutrition</p> <ul style="list-style-type: none"> • how to prepare and cook a variety of 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 <p>In late KS2 pupils should also know:</p> <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 <p>Taste Ed</p> <ul style="list-style-type: none"> • Children learn about how sight can impact our taste. • Children will know what is meant by texture in relation to food. Children learn what texture means and learn

	<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. 	<ul style="list-style-type: none"> • 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>how to apply the idea to a series of fruits and vegetables.</p> <ul style="list-style-type: none"> • Children will know about the relationship between and taste and smell and memory. • Children learn how to identify the five basic tastes both separately and when combined in a soup.
Educational Visits			
Key Texts			
Curriculum Links	<p>Investigative and Evaluative Activities (IEAs)</p> <ul style="list-style-type: none"> • Spoken language – ask questions, formulate, articulate and justify answers, arguments and opinions. Consider and evaluate different viewpoints. • Science – work scientifically investigating properties of fabrics. Children plan different types of scientific enquiries to answer questions. • History – significant person/people in their locality linked to textiles and products e.g. William Morris, Amanda Wakeley. <p>Focused Tasks (FTs)</p> <ul style="list-style-type: none"> • Mathematics – apply knowledge of how 2-D nets can be formed into 3-D shapes; apply skills of accurate measuring using standard units i.e. cm/mm. • Art and design – investigate methods of adding colour, pattern and texture on to textiles and how to make their own textiles through weaving or felt making. • Computing – children express themselves and develop ideas using a range of information and communication technology resources. <p>Design, Make and Evaluate Assignment (DMEA)</p> <ul style="list-style-type: none"> • Art and design – use and apply drawing skills. • Writing and computing – write and record a radio advert, making use of persuasive writing features, sound effects and music to promote the final product or event it is advertising. • Computing – children express themselves and develop ideas using a range of information and communication technology resources. • Spoken language – consider and evaluate others’ viewpoints. Give a well-structured oral evaluation to include relevant technical vocabulary. 	<p>Investigative and Evaluative Activities (IEAs)</p> <ul style="list-style-type: none"> • Spoken language – ask relevant questions, formulate and express opinions, give well-structured descriptions and explanations. Use relevant strategies to build their vocabulary. • Computing – use search technologies for research purposes and be discerning when evaluating digital content. <p>Focused Tasks (FTs)</p> <ul style="list-style-type: none"> • Spoken language – ask relevant questions, formulate and express opinions, give well-structured descriptions and explanations. Use relevant strategies to build their vocabulary. • Mathematics – understand ratios. Apply understanding and skill to carry out accurate measuring using standard units i.e. cm/mm. • Science – apply knowledge and understanding of circuits, switches, conductors and insulators. Recognise that some mechanisms, including pulleys and gears, allow a smaller force to have a greater effect. <p>Design, Make and Evaluate Assignment (DMEA)</p> <ul style="list-style-type: none"> • Computing – use search technologies for research purposes and be discerning when evaluating digital content. • Art and design – use and apply drawing skills. Use techniques with colour, pattern, texture, line and shape. • Science – apply knowledge and understanding of circuits, switches, conductors and insulators in the design of the final product. • Mathematics – understand ratios. Apply understanding and skill to carry out accurate measuring using standard units i.e. cm/mm. 	<p>Living Things and Their Habitat</p> <ul style="list-style-type: none"> • ‘identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves ‘...