

Design and Technology Progression Document

Year group	Textiles	Structures and Construction	Mechanisms	Electrical Systems	Cooking and Nutrition	Key Vocabulary
N	<p>Physical development: The child should be able to hold and manipulate the weaving materials, such as threading beads or lacing cards. This will help to develop their hand-eye coordination and fine motor skills.</p> <p>Expressive arts and design: The child should be able to explore different materials and textures, and make choices about which materials to use. They should also be able to experiment with different patterns and colours.</p> <p>Communication and language: The child should be able to describe what they are doing and explain their choices when weaving. They should also be able to listen to and follow instructions from adults and peers.</p> <p>Understanding the world: The child should be able to explore the different materials and tools used in weaving, and understand that they are used to make different patterns and shapes.</p> <p>Personal, social and emotional development: The child should be able to develop their confidence and self-esteem by creating something through weaving. They should also be able to share their work with others, take turns, and show respect for others' work.</p>	<p>Physical Development Choose the right resources to carry out their own plan. Use one-handed tools and equipment, for example, making snips in paper with scissors.</p> <p>Expressive Arts and Design Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park. Explore different materials freely, in order to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Create closed shapes with continuous lines, and begin to use these shapes to represent objects</p> <p>Mathematics Select shapes appropriately; flat surfaces for building Combine shapes to make new ones Talk about and explore 2D and 3D shapes</p> <p>PSED Select and use activities and resources, with help when needed.</p> <p>Understanding the world Explore how things work Talk about what they see, using a wide vocabulary</p>	<p>Physical Development Choose the right resources to carry out their own plan. Use large-muscle movements</p> <p>Expressive Arts and Design Explore different materials freely, in order to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them. Use one-handed tools and equipment</p> <p>PSED Select and use activities and resources, with help when needed.</p> <p>Understanding the world Explore how things work Talk about what they see, using a wide vocabulary</p>		<p>Physical Development Use one-handed tools and equipment Choose the right resources to carry out their own plan.</p> <p>Expressive Arts and Design Explore different materials freely, in order to develop their ideas about how to use them and what to make. Develop their own ideas and then decide which materials to use to express them.</p> <p>PSED Select and use activities and resources, with help when needed. Make healthy choices about food and drink</p> <p>Understanding the world Explore how things work Talk about what they see, using a wide vocabulary</p>	<p>Construction: Structure, construct, shelter, base, thicker, thinner, 2D, 3D, cube, cuboid, triangular prism, circles, rectangles, triangles, sides, corners, straight, flat round, Make: join, cut, equipment, materials, design: plan, purpose Evaluate: strong, weak.</p> <p>Mechanisms: moving, join Make: join, cut, equipment, materials, design: plan, purpose Evaluate: strong, weak</p> <p>Cooking & Nutrition Stir, pour, oats, watch, scoop, bowl, add, heat, saucepan, liquid, milk, water, Textiles: weaving, over, under, through, weave, thread, yarn, loom</p>
R	<p>Physical development: Use their fine motor skills to manipulate the materials, such as holding and pulling the threads, and weaving them in and out of the loom or frame. They should also be able to develop their hand-eye coordination and control of their movements.</p> <p>Expressive arts and design: Explore different colours, textures and patterns in their weaving, and make choices about which materials to use. They should also be able to use their imagination to create their own designs and experiment with different techniques.</p>	<p>Physical Development Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.</p> <p>Expressive Arts and Design Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills.</p> <p>Mathematics</p>	<p>Physical Development Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.</p> <p>Expressive Arts and Design Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills</p>		<p>Physical Development: Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Use their core muscle strength to achieve a good posture when sitting at a table or sitting on the floor.</p> <p>Expressive Arts and Design Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills</p> <p>PSED Personal hygiene</p>	<p>Construction: Structure, construct, shelter, base, thicker, thinner, 2D, 3D, cube, cuboid, triangular prism, circles, rectangles, triangles, sides, corners, straight, flat round, Make: join, cut, equipment, materials, design: plan, purpose Evaluate: strong, weak</p> <p>Mechanisms: moving, materials, models, join, connect, push, pull, slow, squeeze, wind up, Make: join, cut, equipment,</p>

	<p>Communication and language: talk about their weaving, describing the colours, patterns, and textures they are using, and explaining what they are doing. They should also be able to listen to and follow instructions from adults and peers.</p> <p>Understanding the world explore different materials and tools used in weaving, and understand that textiles are made by weaving threads together. They should also be able to appreciate the value of traditional crafts and the importance of creativity in society.</p> <p>PSED: develop their confidence and self-esteem by creating something unique and beautiful through weaving. They should also be able to share their work with others, take turns, and show respect for others' work. Additionally, weaving can help to develop patience and perseverance as the child learns new skills and techniques.</p>	<p>Select, rotate and manipulate shapes to develop spatial reasoning skills</p> <p>Compose and decompose shapes so that children recognise a shape can have shapes within it.</p> <p>PSED</p> <p>Show resilience and perseverance in the face of challenge.</p> <p>Communication and Language</p> <p>Learn new vocabulary</p> <p>ELG</p> <p>Expressive Arts and Design</p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p>Share their creations, explaining the process they have used.</p> <p>Physical development</p> <p>Use a range of small tools, including scissors</p>	<p>ELG</p> <p>Expressive Arts and Design</p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • Share their creations, explaining the process they have used</p> <p>Physical Development</p> <p>Use a range of small tools</p>		<p>Know and talk about the different factors that support their overall health and wellbeing: healthy eating</p> <p>ELG:</p> <p>Physical Development: Fine Motor Skills</p> <p>Use a range of small tools, including scissors, paintbrushes and cutlery.</p> <p>Expressive Arts and Design</p> <p>Creating with Materials</p> <p>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • Share their creations, explaining the process they have used</p>	<p>materials, design: plan, purpose Evaluate: strong, weak</p> <p>Textiles: weaving, over, under, through, weave, thread, yarn, loom, weft</p> <p>Cooking and nutrition: scoop, knife, cut, spread, wash, spoon, chopping board</p>
1	<p>Fabric Faces/book mark</p> <p>Design & Evaluate: Design and plan the decoration for a particular user based on simple design criteria. Decorating with fabric paints, printing or adding buttons, sequins and beads with glue. Evaluate against the original design criteria and intended purpose.</p> <p>Skill: drawing around a template and cutting the fabric.</p> <p>Joining the fabric with glue, staples and tape</p> <p>Knowledge: To know how to join a range of fabrics</p>	<p>Autumn 1 Construction during CIL</p> <p>Making a throne for a monarch</p> <p>Design and Evaluate:</p> <p>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. Explore a range of existing freestanding structures in the school 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> <p>Key Knowledge</p> <p>Explore and experiment how to make a structure more stable. Use simple finishing techniques suitable for the structure they are creating.</p> <p>Key Skills</p> <p>Ability to design and make a chair using cardboard and paper cylinders. To assemble, join and combine materials and components.</p>	<p>Moving Picture Book</p> <p>Design & Evaluate: Generate initial ideas and design criteria through own experiences. Explore and talk about books containing flaps and moving pictures.</p> <p>Skill: Construct a simple lever with support.</p> <p>Construct a simple slider independently. Join levers to make linkages to create moving parts.</p> <p>Knowledge: Deconstruct a simple slider and describe how it works.</p>		<p>Scones/healthy muffins</p> <p>Design & Evaluate: Design appealing products for a particular user based on simple design criteria. Generate initial ideas and design criteria through investigating a variety. Taste and evaluate a range of scones to determine the intended user's preferences. Evaluate ideas and finished products against design criteria, including intended user and purpose.</p> <p>Skills: Measure or weigh using measuring cups or electronic scales with support. Combine liquid and dry ingredients safely and hygienically</p> <p>Knowledge: Explore where ingredients come from.</p> <p>Know that all food comes from plants or animals • that food has to be farmed, grown elsewhere (e.g. home) or caught</p>	<p>planning, investigating design, evaluate, make, user, purpose, ideas, product, Food: measure, weigh, mix, stir, pour, stamp, brush, knead, grate, rub.</p> <p>Textiles: join, fabric, cut, attach, glue, staple</p> <p>Mechanisms: slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards, flap</p> <p>Construction: Free standing structure, stability, strong, weak, test, stiff, cut, fold, cylinder, rectangle, square, join, fix</p>

2	<p><u>Fabric Faces/Book mark</u> Design & Evaluate: Develop, model and communicate their ideas through talking, mock-ups and drawings. Select and use tools, equipment, skills and techniques to perform practical tasks, explaining their choices. Explore a range of existing products related to their design criteria. Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. Skill: Joining and decorating fabrics with running stitch, glue, staples, over sewing, tape To select and use tools and materials appropriate to the product Knowledge: to know that running stitch can be used to join fabrics.</p>	<p><u>Making a throne for a monarch</u> Design and Evaluate: 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. Explore a range of existing freestanding structures in the school Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. Key Knowledge: Suggest how their products could be improved. To know that different joining techniques can be used for different materials and purpose. To explore and know how to make freestanding structures stronger, stiffer and more stable. Key Skills: Assemble, join and combine materials and components. . Use a range of materials to create models. Use simple finishing techniques suitable for the structure they are creating.</p>	<p><u>Moving Picture Book</u> Design & Evaluate: Generate initial ideas and design criteria through own experiences. Explore and talk about books containing flaps and moving pictures. Skill: Construct a simple lever with support. Construct a simple slider independently. Join levers to make linkages to create moving parts. Can make a wheel mechanism. Can add and join a flap. Knowledge: Deconstruct a simple slider and describe how it works Explore and use sliders and levers. Understand that different mechanisms produce different types of movement.</p>		<p><u>Scones/healthy muffin</u> Design & Evaluate: Design appealing products for a particular user based on simple design criteria. Generate initial ideas and design criteria through investigating a variety. Taste and evaluate a range of scones to determine the intended user's preferences. Evaluate ideas and finished products against design criteria, including intended user and purpose. Skills: It is important that they understand that we need certain skills and techniques to be able to make food products. Measure or weigh using measuring cups or electronic scales. Measure liquids. Combine liquid and dry ingredients. Knowledge: Explore recipes and ingredients to identify likes and dislikes. Suggest improvements to existing recipes. Explore where ingredients come from. Know that all food comes from plants or animals. That food has to be farmed, grown elsewhere (e.g. home) or caught</p>
3	<p><u>Textiles</u> Design & Evaluate: Generate, develop, model, and communicate realistic ideas through discussion, annotated sketches, and simple prototypes. Explore a range of existing textile products related to their design criteria, specifically focusing on felt decorations. Evaluate the effectiveness of their product in relation to its purpose, user, and adherence to the original design criteria. Skills: Joining fabrics using running stitch, oversewing, and backstitch (building on Year 2 skills). Using appropriate decoration techniques, such as appliqué using gluing or simple stitches, to embellish felt ornaments. Key Knowledge: Recognising and applying running stitch as a versatile joining technique for fabrics</p>	<p><u>Shelters</u> Design & Evaluate: Plan the main stages of making. Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work Skills: Deconstruct and assemble the net of basic 3D shapes. Strengthen 2D frames by adding diagonal bracing struts. Make a rectangular frame from strip wood reinforcing with cross braces. Use materials to make simple joints - glue, tape and paper clips. Join 2D frames to create 3D structures. Create shell or frame structures, strengthen frames with diagonal struts Make structures more stable by giving them a wide base Prototype frame and shell structures Measure and mark.</p>	<p><u>Levers and Linkages</u> Design & Evaluate: Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose, aimed at individuals or groups in the context of developing design criteria and design ideas for a moving poster to promote recycling. Generate, develop, model and communicate ideas through discussion, annotated sketches, and prototypes Understand and use mechanical systems in their products (for example levers and linkages) Skills: Construct a mechanism which uses levers and linkages with a fixed and loose pivot. Knowledge: Understand and use lever and linkage mechanisms. Distinguish between fixed and loose pivots.</p>	<p><u>Italian food – pasta and sauce</u> Design & Evaluate: Design appealing products for a particular user based on simple design criteria. Generate initial ideas and design criteria through investigating a variety. Evaluate ideas and finished products against design criteria, including intended user and purpose Skills: Accurately measuring using a measuring jug. Use both digital and analogue scales. Snip with greater dexterity and control. Placing the cutter in positions to make good of the food available and avoid waste. Use the claw grip to cut harder foods using a serrated vegetable knife. Crush garlic using a garlic press. Knead. Knowledge: taught what a balanced diet is, begin to understand the</p>	<p>Investigating, planning, design, make, evaluate, user, purpose, ideas, design criteria, product, function Structures: standing structure, stability, strong, weak, test, stiff, cut, fold, cylinder, rectangle, square, cut, fold, join, fix, structure, base, top, underneath, side, edge, surface, thinner, thicker, corner, straight, triangle, cuboid, cube, Textiles: join, fabric, cut, attach, glue, staple, stitch, running stitch, Food: measure, weigh, mix, stir, pour, stamp, brush, knead, grate, rub. Mechanism: slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards, rotate, flap user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch, appealing Mechanical systems - loose pivot, fixed pivot, lever, linkages, mechanism, design, brief, moving, guide/bridge, sketch, annotate, adapt, mock up Structures/construction: shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, marking out, scoring,</p>

		<p>Knowledge: To know how to draw a net for basic 3D shapes. To know how to strengthen 2D frames.</p>			<p>nutrients in food that keep the body healthy and active, know how to use the eatwell guide, understand the value of eating sociably with others and understand how to keep hydrated</p>	<p>shaping, tabs, joining, assemble, material, stiff, strong, Food :measure, mix, snip, cut, grate, peel, stir, combine, rub, beat, drain, crush, weigh, knead Textiles: join, fabric, cut, attach, glue, staple stitch, running stitch, over stitch, over sewing, back stitch. applique</p>
4	<p>Making a Christmas decoration Design & Evaluate: Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, exploded diagrams. Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. Skill: Join fabrics using running stitch, over sewing, back stitch Use appropriate decoration techniques e.g. appliqué (glued or simple stitches Knowledge: To understand the need for and know how to create patterns.</p>			<p>Making a torch Design & Evaluate: Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. Generate, develop, model and communicate their ideas through discussion, annotated sketches, prototypes, Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Key Skill: To make a product which uses both electrical and mechanical components. Key Knowledge: To know that mechanical and electrical systems have an input, process and output. To know that a battery contains stored electricity and can be used to power products. To know what electrical conductors and insulators are.</p>	<p>Bread Design & Evaluate: Design appealing products for a particular user based on simple design criteria. Generate initial ideas and design criteria through investigating a variety. Taste and evaluate a range of breads to determine the intended user's preferences. Evaluate ideas and finished products against design criteria, including intended user and purpose Skills: Combine using a sieve, flour, raising agents and/or spices together in to a bowl. Mix, stir and combine wet and dry ingredients uniformly (eg to form a dough). Knead and shape dough in to aesthetically pleasing products. Use hands to shape mixtures in to evenly sized pieces. With very close supervision, and physical guidance when necessary, handle hot food safely; once adults have removed food from the hob or oven Knowledge: Know the importance of a healthy breakfast. Understand what makes a healthy and balanced diet, and that different foods and drinks provide different substances that the body needs to be healthy and active. Understand that people have different views on how food is produced and that this influences the food they buy. Understand that there are a variety of</p>	<p>planning, investigating design, evaluate, make, user, purpose, ideas, product, Electrical circuits: 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 Food & nutrition: measure, mix, stir, combine, rub, beat, weigh, knead Textiles: join, fabric, cut, attach, glue, staple stitch, running stitch, over stitch, over sewing, back stitch. applique</p>

					influences on the food we choose to eat (eg who we are with, season, cost, health, occasion)	
5	<p>To make a reusable bag: Design & Evaluate: Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views. and, where appropriate, computer-aided design. Understanding pattern layout. Using a prototype product Investigate and evaluate a range of products including the ingredients, materials, components and techniques that are used. Skill: Create 3D products using pattern pieces and seam allowance. Pin and tack fabric pieces together. Join fabrics using over sewing, back stitch. Use fastenings and recreate some. Decorate textiles appropriately often before joining components Knowledge: To understand and use the properties of materials to achieve functioning product.</p>	<p>Construction – Making a bird house Design & Evaluate: Develop design criteria to inform the design of their bird house. Use research such as examining existing bird houses, to inform their design ideas. Generate and develop design ideas, selecting the most appropriate one for their bird house. Evaluate their bird house, identifying areas of success and areas for improvement, and suggesting modifications to their design. Skill: Create technical drawings or plans of their design, using accurate measurements and annotations. Use a range of tools and equipment, including saws, drills, and sandpaper, to shape and join materials to create their bird house. Knowledge: Know how to use a range of tools and equipment safely and correctly, including saws, drills, and sandpaper. Understand how to use and interpret technical drawings and plans to guide their making. Know how to apply a range of finishes and surface treatments to enhance the appearance and durability of their bird house.</p>	<p>Pulleys, Gears and Cams – Create a moving toy Design & Evaluate: 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. Skill: Join and assemble components accurately. Understand and use mechanical systems Key knowledge: describe the way in which a cam changes rotary motion into linear motion. The relationship between a cam and follower, an off-centre cam, a peg cam, a pear shaped cam and a snail cam. Use the correct vocabulary. understand and use mechanical systems in their products</p>			<p>design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype Mechanisms: Mechanism, lever, linkage, design brief, generate, loose/fixed pivot, guide/bridge, system, input, output, components, cams, reverse motion lever, parallel output lever, guide/bridge oscillating movement, arc movement linear movement. Textiles: join, fabric, cut, attach, glue, staple, stitch, running stitch, cross section, applique, back stitch, over sewing, back stitch, fastenings Construction: Hard/soft wood, hack saw, drill, frame structure, stiffen, strengthen, reinforce, stability, shape, join, temporary, permanent, frame structure.</p>
6	<p>Support/fidget Blanket Design & Evaluate: Develop a simple design specification to guide the development of ideas and products, taking account of constraints including time, resources and cost. Test the system to demonstrate its effectiveness for the intended user and purpose. Skill: Combine fabrics to create more useful Properties. Join fabrics using hand or machine stitching Use fastenings and recreate some that are relevant and useful to the</p>			<p>Electrical circuit Design & Evaluate: Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded</p>	<p>Greek Food Design & Evaluate: Investigate and analyse a range of existing products, expressing own opinions on these. Explore nutritional values on labels of products and use these to inform on healthy choices. Create a design criteria for own product. Cooking skills – hygiene and safe cutting skills. Make sweet and savoury dishes to produce a healthy meal Design a sweet and savoury product</p>	<p>function, innovative, design specification, design brief, user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype Textiles: join, fabric, cut, attach, glue, staple, stitch, running stitch,</p>

	<p>product. Decorate textiles appropriately often before joining components applying previous taught skills. Competently select from and use appropriate tools to accurately measure, mark, cut and assemble materials to produce reliable, functional products.</p> <p>Knowledge: To be able to create fastenings for a purpose.</p>			<p>diagrams, prototypes, pattern pieces and computer-aided design. Investigate and analyse a range of existing products. Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world.</p> <p>Key knowledge: To understand how more complex electrical circuits and components can be used to create functional products. To know that graphite is a conductor and can be used as part of a circuit understand how electromagnetic motors work and that switches are a break in the circuit. Know that batteries contain acid, which can be dangerous if they leak. Learning that when electricity enters a magnetic field it can make a motor</p> <p>Key Skill: Competently select from and use appropriate tools and assemble materials and securely connect electrical components to produce reliable, functional Products</p>	<p>to create a healthy meal. Evaluate dishes</p> <p>Skills: weighing and measuring ingredients with accuracy, confidently and independently able to follow a recipe and make simple adaptations, use cutting techniques that require them to cut food up finely and in evenly sized pieces</p> <p>Key Knowledge: They should know how use the Eatwell Guide to help them to make healthy food choices, understand the main food groups and different nutrients that are important for health, know appropriate portion sizes and the importance of not skipping meals, including breakfast..</p>	<p>cross section, applique, back stitch, over sewing, fastening, assembly, functioning,</p> <p>Food: measure, mix, snip, cut, grate, peel, stir, combine, rub, spread, beat, crack, drain, crush, sieve, bacteria, separate, claw grip, whisk, blend, mash, bridge grip, dice</p> <p>Electrical circuits: Series circuit, Parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart.</p>
--	--	--	--	--	--	--