

	Autumn	Spring	Summer
Year A			
Topic	Structures (Stone Age Structure/ Forest School)	Structures (wood joining/construction)	Electrical Systems (Alarms)
Relevant area of Programme of study	<p>*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</p> <p>* Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>*Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p> <p>*Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p> <p>*Investigate and analyse a range of existing products</p>	<p>*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</p> <p>* Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>*Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p> <p>*Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p> <p>*Investigate and analyse a range of existing products</p>	<p>*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</p> <p>* Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>*Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p> <p>*Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p> <p>*Investigate and analyse a range of existing products</p> <p>*Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p>

	<p>*Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>* Understand how key events and individuals in design and technology have helped shape the world</p> <p>*Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p>	<p>*Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>* Understand how key events and individuals in design and technology have helped shape the world</p> <p>*Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p>	<p>* Understand how key events and individuals in design and technology have helped shape the world</p> <p>*Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</p>
Vocabulary	<p>structure, strengthen, reinforce, communicate, discuss, knots, materials, tarp, secateurs, weaving, evaluate, permanent, temporary</p>	<p>Glue, product, materials, drill, screw, nail, strengthen, construct, repair, techniques, cutting, joining, shaping, aesthetic, functional evaluate, saw, vise, measure, permanent, temporary, assemble, components, mark out, accuracy, safety, wood types, 3D, 2D, stable</p>	<p>series circuit, fault, connection, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device, user, purpose, function, design criteria, innovative, alarm</p>
Key Knowledge	<p><u>Design</u> Chd will communicate their ideas through discussion</p> <p>Learn about famous inventor / designer / engineer related to topic</p> <p>They will look at a range of structures used in the stone age, considering what they were made of what made them stable. They will learn how structures developed over the Stone Age and the materials used, considering their stability.</p> <p>Chd will consider the materials they have available to assemble their structure and</p>	<p><u>Design</u> Propose realistic suggestions for how they can reach their design.</p> <p>Learn about famous inventor / designer / engineer related to topic</p> <p>Gather more than one idea for how to create a product.</p> <p>Evaluate the appearance and usability of own and pre-existing products.</p> <p>Produce a detailed plan with labelled diagrams, a</p>	<p><u>Design</u> Learn about famous inventor / designer / engineer related to topic</p> <p>Make an annotated sketch of the alarm system and how it will work.</p> <p>Investigate and analyse a range of existing alarms systems to provide chd with understanding of how they work.</p> <p>Produce appropriate lists of tools, equipment and materials they will need</p>

	<p>plan it to adapt the size of the structure for different purposes</p> <p>Produce appropriate lists of tools, equipment and materials they will need</p> <p>Writing down step by step process if applicable</p> <p><u>Make</u> Chd will use a range of materials, e.g tarp, rope, secateurs, sticks, trees, leaves to assemble their structure.</p> <p>They will learn a range of knots and weaving techniques to increase stability of structures and evaluate a range of shapes using the above materials to test out stability with different shaped structures.</p> <p><u>Evaluate</u> Chd will evaluate the stability of their structure and the waterproofness. This will be tested by tcrs and chd.</p> <p>Chd will also verbally evaluate each others' structures, reflecting on how they built their own and how it could be improved as well as improving others' structure.</p> <p><u>Technical Knowledge</u> Knowledge of how to strengthen and reinforce structures.</p>	<p>written explanation and step-by-step guide.</p> <p>Produce appropriate lists of tools, equipment and materials they will need</p> <p>Writing down step by step process if applicable</p> <p>Investigate similar products to the one being made, giving starting points for a design.</p> <p><u>Make</u> Use appropriate decorations techniques (glued)</p> <p>To join materials using permanent and temporary fixings.</p> <p>To saw under high levels of supervision.</p> <p>To use nails.</p> <p>To use a table vise</p> <p>Measure, mark out, join, assemble materials and components with accuracy.</p> <p>Select and use a range of tools and equipment with accuracy.</p> <p>Measure, mark out, join, assemble materials and components with accuracy.</p>	<p>Writing down step by step process if applicable</p> <p><u>Make</u> Select from and use tools and equipment to cut, shape, join and finish with some accuracy.</p> <p>Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities.</p> <p><u>Evaluate</u> Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.</p> <p><u>Technical Knowledge</u> Understand and use electrical systems in their products, such as series circuits incorporating buzzers.</p> <p>Experiment with applying the above in an alarm system and creating out of cardboard a shop, bank or use the alarm on the classroom door.</p> <p>Know and use technical vocabulary relevant to the project such as that found above.</p>
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Year B			
Topic	Textiles (Money Containers)	Mechanical Systems (Pneumatics)	Cooking & Nutrition
Relevant area of Programme of study	<p>*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</p> <p>* Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>*Select from and use a wider range of tools and equipment to perform practical tasks</p>	<p>*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</p> <p>* Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p> <p>*Select from and use a wider range of tools and equipment to perform practical tasks</p>	<p>*Understand and apply the principles of a healthy and varied diet</p> <p>*Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</p> <p>(Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>

	<p>[for example, cutting, shaping, joining and finishing], accurately</p> <p>*Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p> <p>*Investigate and analyse a range of existing products</p> <p>*Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>* Understand how key events and individuals in design and technology have helped shape the world</p>	<p>[for example, cutting, shaping, joining and finishing], accurately</p> <p>*Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities</p> <p>*Investigate and analyse a range of existing products</p> <p>*Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>* Understand how key events and individuals in design and technology have helped shape the world</p> <p>*Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</p>	
<p>Vocabulary</p>	<p>Fabric, names of fabrics, fastening, compartment, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance, needle, running stitch, cross stitch, back stitch, chain stitch, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces</p>	<p>components, fixing, attaching, tubing, syringe, plunger, split pin, paper fastener, pneumatic system, input movement, process, output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight, purpose, function, design criteria, innovative, appealing, design brief, research, evaluate, ideas, constraints, investigate</p>	<p>name of products, names of equipment, utensils, techniques and ingredients, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet, planning, design criteria, purpose, user, annotated sketch, sensory evaluations, peeler, recipe, rolling pin, knife, grater, hygienic, safety,</p>



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			cutlery, ingredients, measure, weigh, accuracy, scales, teaspoon, tablespoon
Key Knowledge	<p><u>Design</u></p> <p>Chd will complete an annotated sketch of their wallet.</p> <p>Learn about famous inventor / designer / engineer related to topic</p> <p>They will learn how purses were used in Ancient Egypt and how they have developed over time.</p> <p>Look at a range of purses relevant to the project.</p> <p>Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose.</p> <p>Produce detailed lists of equipment and fabrics relevant to the purse they're making</p> <p>Create a step-by-step plan of how to make it.</p> <p><u>Make</u></p> <p>Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing.</p>	<p><u>Design</u></p> <p>Generate realistic and appropriate ideas and their own design criteria through discussion, focusing on the needs of the user.</p> <p>Learn about famous inventor / designer / engineer related to topic</p> <p>Look at a range of mechanisms, building on prior learning of sliders and levers, and see movement with pneumatics.</p> <p>Write down steps they will take to make the product</p> <p><u>Make</u></p> <p>Select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons.</p> <p><u>Evaluate</u></p> <p>Investigate and analyse books, videos and products with pneumatic mechanisms.</p> <p>Evaluate their own products and ideas against criteria and user needs, as they design and make.</p>	<p><u>Design</u></p> <p>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</p> <p>Learn about famous inventor / designer / engineer related to topic</p> <p>Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.</p> <p>Plan the main stages of a recipe, listing ingredients, utensils and equipment.</p> <p><u>Make</u></p> <p>Select and use appropriate utensils and equipment to prepare and combine ingredients.</p> <p>To know what hygiene means and how to keep surfaces, utensils and hands clean.</p> <p>Use raised beds and greenhouse in forest school to grow own vegetables</p>

	<ul style="list-style-type: none"> • Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. *Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern <p><u>Evaluate</u></p> <p>Test their product against the original design criteria and with the intended user.</p> <p>Investigate and analyse textile products linked to their final product.</p> <p>Compare the final product to the original design specification.</p> <p>Test products with intended user and critically evaluate the quality of the design, functionality and fitness for purpose.</p> <p>Consider the views of others to improve their work.</p> <p><u>Technical Knowledge</u></p> <p>Know how to strengthen, stiffen and reinforce existing fabrics.</p> <p>Understand how to securely join two pieces of fabric together.</p> <p>To know what a seam and where it is</p>	<p><u>Technical Knowledge</u></p> <p>Learn how mechanical systems such as pneumatic systems work.</p> <p>Understand that mechanical systems have an input process and an output.</p>	<p>Work safely and accurately with a range of simple tools in order to slice and cut ingredients successfully</p> <p>Measure ingredients in order to develop their understanding of proportion</p> <p><u>Evaluate</u></p> <p>Carry out sensory evaluations of a variety of ingredients and products.</p> <p>Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.</p> <p><u>Technical Knowledge</u></p> <p>Know how to use appropriate equipment and utensils to prepare and combine food.</p> <p>Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.</p> <p>Know and use relevant technical and sensory vocabulary</p> <p>that a recipe can be adapted a by adding or substituting one or more ingredients</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
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Design and Technology Long Term Plan LKS2



	<p>To know how to use a needle and thread</p> <p>Learn a range of stitching techniques, e.g cross stitch, backstitch, building on knowledge of running stitch learned in KS1</p>		
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