



## Subject: Design and Technology

Year group	EYFS Framework/ National Curriculum	Sticky knowledge	Skills	Key vocabulary
EYFS	<ul style="list-style-type: none"> <li>- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</li> <li>- Share their creations, explaining the process they have used.</li> <li>- Make use of props and materials when role playing characters in narratives and stories.</li> </ul>	Children will be able to find a range of ways to express their ideas and feelings through lots of different medias.	Exploring Enjoying Creating Choosing Stimulated Testing Comparing Describing	Colour Explore Shade Light Dark Tone Red Blue Yellow Green Orange Pink Purple etc. Primary colours Secondary colours Teamwork Collaborative Resourceful Sharing
Year 1	Key stage 1: Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and	<ul style="list-style-type: none"> <li>• Explore and use sliders and levers.</li> <li>• Understand that different mechanisms produce different types of movement.</li> <li>• Know and use technical vocabulary relevant to the project</li> </ul>	<ul style="list-style-type: none"> <li>• Generate ideas based on simple design criteria and their own experiences, explaining what they could make.</li> <li>• Develop, model and communicate their ideas through drawings and mock-ups with card and paper.</li> </ul>	slider, lever, pivot, slot, bridge/guide  card, masking tape, paper fastener, join  pull, push, up, down, straight, curve, forwards, backwards



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	<p>playgrounds, the local community, industry and the wider environment].</p> <p>When designing and making, pupils should be taught to: Design:</p> <ul style="list-style-type: none"> <li>• design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>• generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</li> </ul> <p>Make:</p> <ul style="list-style-type: none"> <li>• select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> <li>• select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</li> </ul> <p>Evaluate:</p> <ul style="list-style-type: none"> <li>• explore and evaluate a range of existing products</li> <li>• evaluate their ideas and products against design criteria</li> </ul> <p>Technical knowledge:</p>		<ul style="list-style-type: none"> <li>• Plan by suggesting what to do next. • Select and use tools, explaining their choices, to cut, shape and join paper and card.</li> <li>• Use simple finishing techniques suitable for the product they are creating.</li> <li>• 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.</li> </ul>	<p>design, make, evaluate, user, purpose, ideas, design criteria, product, function</p>
	<p>Make:</p> <ul style="list-style-type: none"> <li>• select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> <li>• select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</li> </ul> <p>Evaluate:</p> <ul style="list-style-type: none"> <li>• explore and evaluate a range of existing products</li> <li>• evaluate their ideas and products against design criteria</li> </ul> <p>Technical knowledge:</p>	<ul style="list-style-type: none"> <li>• Know how to make freestanding structures stronger, stiffer and more stable.</li> <li>• Know and use technical vocabulary relevant to the project</li> </ul>	<ul style="list-style-type: none"> <li>• Generate ideas based on simple design criteria and their own experiences, explaining what they could make.</li> <li>• Develop, model and communicate their ideas through talking, mock-ups and drawings.</li> <li>• Plan by suggesting what to do next.</li> <li>• Select and use tools, skills and techniques, explaining their choices.</li> <li>• Select new and reclaimed materials and construction kits to build their structures.</li> <li>• Use simple finishing techniques suitable for the structure they are creating.</li> </ul>	<p>cut, fold, join, fix</p> <p>structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved</p> <p>metal, wood, plastic</p> <p>circle, triangle, square, rectangle, cuboid, cube, cylinder</p> <p>design, make, evaluate, user, purpose, ideas, design criteria, product, function</p>



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	<ul style="list-style-type: none"> <li>build structures, exploring how they can be made stronger, stiffer and more stable</li> <li>explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</li> </ul> <p>As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>use the basic principles of a healthy and varied diet to prepare dishes</li> <li>understand where food comes from.</li> </ul>		<ul style="list-style-type: none"> <li>Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings.</li> <li>Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.</li> </ul>	
		<ul style="list-style-type: none"> <li>Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of <i>The eat well plate</i>.</li> <li>Know and use technical and sensory vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>Generate initial ideas and design criteria through investigating a variety of fruit and vegetables.</li> <li>Communicate these ideas through talk and drawings.</li> <li>Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.</li> <li>Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences.</li> </ul>	<p>fruit and vegetable names, names of equipment and utensils</p> <p>sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard</p>
Year 2	<p>Key stage 1:</p> <p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the</p>	<ul style="list-style-type: none"> <li>Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.</li> <li>Know and use technical and sensory vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>Design appealing products for a particular user based on simple design criteria.</li> <li>Communicate these ideas through talk and drawings.</li> <li>Select from a range of fruit and vegetables according to</li> </ul>	<p>flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria</p>



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	<p>home and school, gardens and playgrounds, the local community, industry and the wider environment].</p> <p>When designing and making, pupils should be taught to: Design:</p> <ul style="list-style-type: none"> <li>• design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>• generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</li> </ul> <p>Make:</p> <ul style="list-style-type: none"> <li>• select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> <li>• select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</li> <li>• Evaluate:</li> <li>• explore and evaluate a range of existing products</li> <li>• evaluate their ideas and products against design criteria</li> </ul> <p>Technical knowledge:</p>	<p>their characteristics e.g. colour, texture and taste to create a chosen product.</p> <ul style="list-style-type: none"> <li>• Evaluate ideas and finished products against design criteria, including intended user and purpose.</li> </ul>	<p>names of existing products, joining and finishing techniques, tools, fabrics and components</p> <p>template, pattern pieces, mark out, join, decorate, finish</p> <p>features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function</p>
		<ul style="list-style-type: none"> <li>• Understand how simple 3-D textile products are made, using a template to create two identical shapes.</li> <li>• Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.</li> <li>• Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>• Design a functional and appealing product for a chosen user and purpose based on simple design criteria.</li> <li>• Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology.</li> <li>• Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing.</li> <li>• Select from and use textiles according to their characteristics.</li> <li>• Explore and evaluate a range of existing textile products relevant to the project being undertaken.</li> <li>• Evaluate their ideas throughout and their final</li> </ul>



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	<ul style="list-style-type: none"> <li>• build structures, exploring how they can be made stronger, stiffer and more stable</li> <li>• explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.</li> </ul> <p>As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to:</p> <ul style="list-style-type: none"> <li>• use the basic principles of a healthy and varied diet to prepare dishes</li> <li>• understand where food comes from.</li> </ul>	<ul style="list-style-type: none"> <li>• Explore and use wheels, axles and axle holders.</li> <li>• Distinguish between fixed and freely moving axles.</li> <li>• Know and use technical vocabulary relevant to the project</li> </ul>	<p>products against original design criteria.</p> <ul style="list-style-type: none"> <li>• Generate initial ideas and simple design criteria through talking and using own experiences.</li> <li>• Develop and communicate ideas through drawings and mock-ups.</li> <li>• Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing.</li> <li>• Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.</li> <li>• Explore and evaluate a range of products with wheels and axles.</li> <li>• Evaluate their ideas throughout and their products against original criteria.</li> </ul>	<p>vehicle, wheel, axle, axle holder, chassis, body, cab</p> <p>assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism</p> <p>names of tools, equipment and materials used</p> <p>design, make, evaluate, purpose, user, criteria, functional</p>
Year 3	<p>Key stage 2</p> <p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture,</p>	<ul style="list-style-type: none"> <li>• Know how to strengthen, stiffen and reinforce existing fabrics.</li> <li>• Understand how to securely join two pieces of fabric together.</li> <li>• Understand the need for patterns and seam allowances.</li> </ul>	<ul style="list-style-type: none"> <li>• Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.</li> <li>• Produce annotated sketches, prototypes, final product sketches and pattern pieces.</li> </ul>	<p>fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance</p>



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	<p>enterprise, industry and the wider environment]. When designing and making, pupils should be taught to:</p> <p>Design:</p> <ul style="list-style-type: none"> <li>• 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</li> <li>• generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Make:</li> <li>• select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>• 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. Evaluate:</li> <li>• investigate and analyse a range of existing products</li> <li>• evaluate their ideas and products against their own design criteria and consider the</li> </ul>	<ul style="list-style-type: none"> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>• Plan the main stages of making.</li> <li>• Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing.</li> <li>• Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.</li> <li>• Investigate a range of 3-D textile products relevant to the project.</li> <li>• Test their product against the original design criteria and with the intended user.</li> <li>• Take into account others' views.</li> <li>• Understand how a key event/individual has influenced the development of the chosen product and/or fabric.</li> </ul>	<p>user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces</p>
		<ul style="list-style-type: none"> <li>• Know how to use appropriate equipment and utensils to prepare and combine food.</li> <li>• Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.</li> <li>• Know and use relevant technical and sensory vocabulary appropriately.</li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to</li> </ul>	<p>name of products, names of equipment, utensils, techniques and ingredients</p> <p>texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury</p> <p>hygienic, edible, grown, reared, caught, frozen, tinned,</p>



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	<p>views of others to improve their work</p> <ul style="list-style-type: none"><li>• understand how key events and individuals in design and technology have helped shape the world</li><li>• apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li><li>• understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li><li>• understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li><li>• apply their understanding of computing to program, monitor and control their products.</li></ul> <p>As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to</p> <ul style="list-style-type: none"><li>• understand and apply the principles of a healthy and varied diet</li></ul>		<p>develop and communicate ideas.</p> <ul style="list-style-type: none"><li>• Plan the main stages of a recipe, listing ingredients, utensils and equipment.</li><li>• Select and use appropriate utensils and equipment to prepare and combine ingredients.</li><li>• Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.</li><li>• Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.</li><li>• Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.</li></ul>	<p>processed, seasonal, harvested healthy/varied diet</p> <p>planning, design criteria, purpose, user, annotated sketch, sensory evaluations</p>
	<ul style="list-style-type: none"><li>• Understand and use lever and linkage mechanisms.</li><li>• Distinguish between fixed and loose pivots.</li><li>• Know and use technical vocabulary relevant to the project.</li></ul>	<ul style="list-style-type: none"><li>• Generate realistic ideas and their own design criteria through discussion, focusing on the needs of the user.</li><li>• Use annotated sketches and prototypes to develop, model and communicate ideas.</li><li>• Order the main stages of making.</li></ul>	<p>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</p>	



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	<ul style="list-style-type: none"> <li>• prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li> <li>• understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li> </ul>		<ul style="list-style-type: none"> <li>• Select from and use appropriate tools with some accuracy to cut, shape and join paper and card.</li> <li>• Select from and use finishing techniques suitable for the product they are creating.</li> <li>• Investigate and analyse books and, where available, other products with lever and linkage mechanisms.</li> <li>• Evaluate their own products and ideas against criteria and user needs, as they design and make.</li> </ul>	
Year 4	<p>Key stage 2</p> <p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to:</p> <p>Design:</p> <ul style="list-style-type: none"> <li>• use research and develop design criteria to inform the design of innovative, functional, appealing</li> </ul>	<ul style="list-style-type: none"> <li>• Understand and use pneumatic mechanisms.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>• Generate realistic and appropriate ideas and their own design criteria through discussion, focusing on the needs of the user.</li> <li>• Use annotated sketches and prototypes to develop, model and communicate ideas.</li> <li>• Order the main stages of making.</li> <li>• Select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons.</li> </ul>	<p>components, fixing, attaching, tubing, syringe, plunger, split pin, paper fastener</p> <p>pneumatic system, input movement, process, output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight linear, rotary, oscillating, reciprocating</p> <p>user, purpose, function, prototype, design criteria, innovative, appealing, design brief, research, evaluate, ideas, constraints, investigate</p>





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	<p>products that are fit for purpose, aimed at particular individuals or groups</p> <ul style="list-style-type: none"> <li>• generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Make:</li> <li>• select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> </ul>		<ul style="list-style-type: none"> <li>• Select from and use finishing techniques suitable for the product they are creating.</li> <li>• Investigate and analyse books, videos and products with pneumatic mechanisms.</li> <li>• Evaluate their own products and ideas against criteria and user needs, as they design and make.</li> </ul>	
	<ul style="list-style-type: none"> <li>• 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. Evaluate:</li> <li>• investigate and analyse a range of existing products</li> <li>• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>• understand how key events and individuals in design and technology have helped shape the world Technical knowledge</li> <li>• apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>• understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> </ul>	<ul style="list-style-type: none"> <li>• Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers.</li> <li>• Apply their understanding of computing to program and control their products.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.</li> <li>• Order the main stages of making.</li> <li>• Select from and use tools and equipment to cut, shape, join and finish with some accuracy.</li> <li>• Select from and use materials and components, including construction materials and electrical components according to their functional</li> </ul>	<p>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</p> <p>control, program, system, input device, output device</p> <p>user, purpose, function, prototype, design criteria, innovative, appealing, design brief</p>



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	<ul style="list-style-type: none"> <li>understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> <li>apply their understanding of computing to program, monitor and control their products.</li> </ul> <p>As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to</p> <ul style="list-style-type: none"> <li>understand and apply the principles of a healthy and varied diet</li> <li>prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li> <li>understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li> </ul>		<p>properties and aesthetic qualities.</p> <ul style="list-style-type: none"> <li>Investigate and analyse a range of existing battery-powered products.</li> <li>Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.</li> </ul>	
Year 5	<p>Key stage 2</p> <p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture,</p>	<ul style="list-style-type: none"> <li>Know how to use utensils and equipment including heat sources to prepare and cook food.</li> <li>Understand about seasonality in relation to food products and the source of different food products.</li> </ul>	<ul style="list-style-type: none"> <li>Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.</li> <li>Explore a range of initial ideas, and make design decisions to develop a final</li> </ul>	<p>ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs</p> <p>fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy,</p>



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	<p>enterprise, industry and the wider environment]. When designing and making, pupils should be taught to:</p> <p>Design:</p> <ul style="list-style-type: none"> <li>• 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</li> <li>• generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Make:</li> <li>• select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>• 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. Evaluate:</li> <li>• investigate and analyse a range of existing products</li> <li>• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>• understand how key events and individuals in design and technology have helped shape the world Technical knowledge</li> </ul>	<ul style="list-style-type: none"> <li>• Know and use relevant technical and sensory vocabulary</li> </ul>	<p>product linked to user and purpose.</p> <ul style="list-style-type: none"> <li>• Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.</li> <li>• Write a step-by-step recipe, including a list of ingredients, equipment and utensils</li> <li>• Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.</li> <li>• Make, decorate and present the food product appropriately for the intended user and purpose.</li> <li>• Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams.</li> <li>• Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.</li> <li>• Understand how key chefs have influenced eating habits</li> </ul>	<p>intolerance, savoury, source, seasonality</p> <p>utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble</p> <p>design specification, innovative, research, evaluate, design brief</p>
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	<ul style="list-style-type: none"> <li>• apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>• understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> <li>• understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> <li>• apply their understanding of computing to program, monitor and control their products.</li> </ul> <p>As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to</p> <ul style="list-style-type: none"> <li>• understand and apply the principles of a healthy and varied diet</li> <li>• prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li> <li>• understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li> </ul>	<ul style="list-style-type: none"> <li>• Understand how to strengthen, stiffen and reinforce 3-D frameworks.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>	<p>to promote varied and healthy diets.</p> <ul style="list-style-type: none"> <li>• Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources.</li> <li>• Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost.</li> <li>• Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches.</li> <li>• Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used.</li> <li>• Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks.</li> <li>• Use finishing and decorative techniques suitable for the product they are designing and making.</li> <li>• Investigate and evaluate a range of existing frame structures.</li> </ul>	<p>frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent</p> <p>design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional</p>
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			<ul style="list-style-type: none"> <li>• Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.</li> <li>• Research key events and individuals relevant to frame structures.</li> </ul>	
		<ul style="list-style-type: none"> <li>• Understand that mechanical systems have an input, process and an output.</li> <li>• Understand how cams can be used to produce different types of movement and change the direction of movement.</li> <li>• Know and use technical vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>• Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources.</li> <li>• Develop a simple design specification to guide their thinking.</li> <li>• Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.</li> <li>• Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.</li> <li>• Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the</li> </ul>	cam, snail cam, off-centre cam, peg cam, pear shaped cam follower, axle, shaft, crank, handle, housing, framework rotation, rotary motion, oscillating motion, reciprocating motion annotated sketches, exploded diagrams mechanical system, input movement, process, output movement design decisions, functionality, innovation, authentic, user, purpose, design specification, design brief



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			<p>constraints of time, resources and cost.</p> <ul style="list-style-type: none"> <li>• Compare the final product to the original design specification.</li> <li>• Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li>• Consider the views of others to improve their work.</li> <li>• Investigate famous manufacturing and engineering companies relevant to the project.</li> </ul>	
Year 6	<p>Key stage 2</p> <p>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment]. When designing and making, pupils should be taught to:</p> <p>Design:</p> <ul style="list-style-type: none"> <li>• use research and develop design criteria to inform the design of innovative, functional, appealing</li> </ul>	<ul style="list-style-type: none"> <li>• A 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics.</li> <li>• Fabrics can be strengthened, stiffened and reinforced where appropriate.</li> </ul>	<ul style="list-style-type: none"> <li>• Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.</li> <li>• Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design.</li> <li>• Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.</li> </ul>	<p>seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces</p> <p>name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper</p> <p>design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype</p>



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	<p>products that are fit for purpose, aimed at particular individuals or groups</p> <ul style="list-style-type: none"> <li>• generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. Make:</li> <li>• select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>• 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. Evaluate:</li> <li>• investigate and analyse a range of existing products</li> <li>• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>• understand how key events and individuals in design and technology have helped shape the world Technical knowledge</li> <li>• apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>• understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> </ul>	<ul style="list-style-type: none"> <li>• Understand and use electrical systems in their products.</li> <li>• Apply their understanding of computing to program, monitor and control their products.</li> </ul>	<ul style="list-style-type: none"> <li>• Produce detailed lists of equipment and fabrics relevant to their tasks.</li> <li>• Formulate step-by-step plans and, if appropriate, allocate tasks within a team.</li> <li>• 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.</li> <li>• Investigate and analyse textile products linked to their final product.</li> <li>• Compare the final product to the original design specification.</li> <li>• Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li>• Consider the views of others to improve their work.</li> <li>• 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.</li> </ul>	<p>series circuit, parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart</p>
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	<ul style="list-style-type: none"><li>• understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li><li>• apply their understanding of computing to program, monitor and control their products.</li></ul> <p>As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life. Pupils should be taught to</p> <ul style="list-style-type: none"><li>• understand and apply the principles of a healthy and varied diet</li><li>• prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li><li>• understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li></ul>	<ul style="list-style-type: none"><li>• Know and use technical vocabulary relevant to the project.</li></ul>	<ul style="list-style-type: none"><li>• Generate and develop innovative ideas and share and clarify these through discussion.</li><li>• Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.</li><li>• Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.</li><li>• Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.</li><li>• Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment.</li><li>• Continually evaluate and modify the working features of the product to match the initial design specification.</li><li>• Test the system to demonstrate its effectiveness for the intended user and purpose.</li><li>• Investigate famous inventors who developed ground-breaking electrical systems and components.</li></ul>	function, innovative, design specification, design brief, user, purpose
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- Understand that mechanical and electrical systems have an input, process and an output.
- Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.
- Know and use technical vocabulary relevant to the project.

- 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.

### **Making**

- 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.

### **Evaluating**

- Compare the final product to the original design specification.
- Test products with intended user and critically evaluate the quality of the design,

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



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			<p>manufacture, functionality and fitness for purpose.</p> <ul style="list-style-type: none"><li>• Consider the views of others to improve their work.</li><li>• Investigate famous manufacturing and engineering companies relevant to the project.</li></ul>	
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Based on Project on a Page DT planning