

	Designing, making and evaluating skills	Technical knowledge and understanding
KS1	<p>Generates ideas and designs functional and appealing products for a chosen user and purpose based on simple design criteria.</p> <p>Knows about and can use simple finishing techniques (e.g. painting, fabric crayons, buttons, sequins, stitching or ribbons) suitable for the structure or product they are creating.</p> <p>Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining to allow movement, peeling, cutting, slicing, squeezing, grating and chopping safely.</p> <p>Select from and use a range of materials (including construction materials and foods) and components (such as paper, card, plastic, textiles and wood) according to their characteristics</p> <p>Explore a range of existing products to learn about their design and how they have been made.</p> <p>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>Can make a freestanding structure and knows how to make it stronger, stiffer and more stable.</p> <p>Can join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.</p> <p>Can make and use a mechanism (e.g. lever, slider, wheels and axles) in their products.</p> <p>Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.</p> <p>Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The Eatwell plate.</p>
LKS2	<p>Generate and clarify realistic ideas and design criteria through discussion with peers and adults, focussing on the needs and purpose of the product.</p> <p>Develop ideas through analysis of existing products and produce annotated sketches to model and communicate realistic ideas, including cross-sectional and exploded diagrams.</p> <p>Plan, and order, the main stages of making, including listing appropriate equipment.</p> <p>Select and use appropriate tools and equipment with some accuracy (e.g. measure, mark out, cut, score, shape, assemble, joining and finishing).</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>Select from and use finishing techniques suitable for the product they are creating.</p> <p>Investigate and analyse a range of products relevant, including sensory evaluations of food ingredients and products, and record findings using annotations, tables and simple charts.</p> <p>Evaluate their ideas and products against their own design criteria, identifying the strengths and areas for improvement in their work and taking into account others' views.</p>	<p>Know how to use appropriate food equipment and utensils and use them safely and appropriately to prepare ingredients.</p> <p>Know about a range of fresh and processed ingredients and select from a range to make appropriate food products.</p> <p>Use knowledge of nets or cubes and cuboids to construct strong, stiff shell structures.</p> <p>Carefully cut out and join at least two pieces of fabric together, using appropriate seam allowances and templates/patterns for accuracy.</p> <p>Understand and use lever and linkage mechanisms, distinguishing between fixed and loose pivots.</p> <p>Understand and use electrical systems in their products (switches, bulbs and buzzers).</p>
UKS2	<p>Generate innovative ideas through research (interviews, surveys, and questionnaires) and discussion with peers and adults to develop a design brief and criteria for design specification.</p> <p>Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose, taking into account time, resources and cost.</p> <p>Develop, model and communicate ideas through talking, annotated sketches, templates, mock-ups, prototypes and communication technology.</p> <p>Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.</p> <p>Write a step-by-step plan including a list of equipment and components relevant to the task and work within the constraints of time, resources and cost.</p> <p>Competently select and use appropriate utensils and equipment accurately to measure, mark out, shape and join.</p> <p>Use finishing and decorating techniques appropriate to the product.</p> <p>Investigate and analyse existing products and carry out and record (in tables/graphs/charts) sensory evaluations of a range of relevant products and ingredients.</p> <p>Critically evaluate their final product with reference back to the design specification, taking into account views of others.</p>	<p>Know how to use utensils and equipment including heat sources to prepare and cook food.</p> <p>Understand about seasonality in relation to food products, and the source of different food products.</p> <p>Know and use relevant technical and sensory vocabulary.</p> <p>Understand how to strengthen, stiffen and reinforce 3-D frameworks.</p> <p>Know that a 3-D textile product can be made from a combination of accurately made pattern pieces, fabric shapes and different fabrics and that fabric can be strengthened, stiffened and reinforced where appropriate.</p> <p>Understand mechanical systems and how gears and pulleys can be used to speed up, slow down or change the direction of movement.</p> <p>Understand how electrical systems work and use in their products.</p> <p>Apply their understanding of computing to program, monitor and control their products.</p>