



Progressions of Skills in Design and Technology

	Year 3	Year 4	Year 5	Year 6
Design, make, evaluate and improve	<ul style="list-style-type: none"> • Investigate existing products, including drawing them to analyse and understand how they are made. • Plan a sequence of actions to make a product. <p>Design with purpose</p> <ul style="list-style-type: none"> • Develop more than one design. • Develop prototypes. • Generate designs with annotated sketches and computer-aided design (CAD) where appropriate. • Refine work and techniques as work progresses, continually evaluating the product design. • Identify strengths and weaknesses of their design ideas. • Talk about how closely their finished product meets their design criteria and meets the need of the user. 		<ul style="list-style-type: none"> • Undertake research to inform design process. This may include surveys and interviews. • Use prototypes, cross-sectional diagrams, exploded diagrams and CAD software to represent designs. • Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). • Consider the views of others when evaluating their own work. • Ensure products have a high quality finish, using art skills where appropriate. • Justify their decisions about materials and methods of construction. • Make suggestions on how their design/product could be improved. 	
Tier 3 vocabulary	user, purpose, design, product, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, planning, sketch, appealing, CAD	Evaluating, product, innovative, prototype, user, purpose, function, prototype, design criteria, appealing, planning, annotated, criteria, CAD	design decisions, construction, CAD, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype	function, innovative, design specification, CAD, design brief, purpose, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype, critical
Textiles	<ul style="list-style-type: none"> • Understand the need for a seam allowance. • Join textiles with appropriate stitching. • Select the most appropriate techniques to decorate textiles. 		<ul style="list-style-type: none"> • Create objects (such as a cushion) that employ a seam allowance. • Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). • Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion). 	
Tier 3 vocabulary	fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance		seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings	

Materials	<ul style="list-style-type: none"> • Measure and mark out accurately. • Cut materials accurately and safely by selecting appropriate tools. • Cut slots. 	<ul style="list-style-type: none"> • Measure and mark out to the nearest mm. • Use and explore complex popups. • Cut slots and internal shapes. • Create nets. 	<ul style="list-style-type: none"> • Cut materials with precision. • Cut accurately and safely to a marked line. • Join/combine materials with temporary, fixed or moving joints. 	<ul style="list-style-type: none"> • Cut materials with precision and refine the finish with appropriate tools (such as sanding wood). • Show an understanding of the qualities of materials to choose appropriate tools to cut and shape.
Tier 3 vocabulary	<p>Measure vocab: cm, mm, m shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision,</p>		<p>Measure vocab: cm, mm, m frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, joints, types of materials, precision,</p>	
Construction, mechanics and electronics	<ul style="list-style-type: none"> • Create series circuits. • Strengthen frames using diagonal struts. <p>Begin to repair items,</p> <ul style="list-style-type: none"> • Begin to use mechanical systems in their products e.g. gears, pulleys and levers. 	<ul style="list-style-type: none"> • Create series circuits. • Investigate how to make structures more stable e.g. by widening the base or to repair items. • Understand and use mechanical structures in their products e.g. gears, pulleys, levers and gears. 	<ul style="list-style-type: none"> • Control a model using an ICT control model. • Use a glue gun with close supervision. • Join materials using appropriate methods. Use a hand drill to drill tight and loose fit holes. 	<ul style="list-style-type: none"> • Create circuits that employ a number of components (such as LEDs, resistors and transistors). • Cut wood accurately to 1mm. • Build frameworks using a range of materials e.g. wood, card and corrugated plastic. • Use a cam to make an up and down mechanism.
Tier 3 vocabulary	<p>mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, gears, pulleys, levers Circuit, battery, bulb, wire, series circuit, insulator, conductor</p>	<p>series circuit, fault, connection, switch, battery, battery holder, bulb, bulb holder, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device</p>	<p>pulley, drive belt, gear, rotation, motor, circuit, switch, circuit diagram, annotated drawings, mechanical system, input, process, output</p>	<p>switch, push-to-make switch, push-to-break switch, light dependent resistor (LDR), light emitting diode (LED), bulb, bulb holder, battery, battery holder, USB cable, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device, series circuit, parallel circuit</p>
Cooking and nutrition	<ul style="list-style-type: none"> • Cut materials accurately and safely by selecting appropriate tools. • Know that a healthy diet is made up from a variety of 	<ul style="list-style-type: none"> • Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). • Measure ingredients using scales. 	<ul style="list-style-type: none"> • Assemble or cook ingredients, controlling the temperature of the oven or hob if cooking. • Measure accurately using different equipment. 	<ul style="list-style-type: none"> • Combine ingredients appropriately e.g. beating or rubbing. • Measure ingredients to the nearest gram and millilitre and calculate ratios

	<p>different food and drink, as depicted in The Eatwell Plate.</p> <ul style="list-style-type: none"> • With support, measure and weigh ingredients appropriately. • Follow a recipe. 	<ul style="list-style-type: none"> • Prepare ingredients hygienically and using the appropriate utensils by following a recipe. 	<ul style="list-style-type: none"> • Create recipes, including ingredients, methods, cooking times and temperatures. • Understand the importance of correct storage and handling of ingredient (using knowledge of micro-organisms). 	<p>of ingredients to scale up or down from a recipe.</p> <ul style="list-style-type: none"> • Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed. • Create and refine recipes, including ingredients, methods, cooking times and temperatures.
Tier 3 vocabulary	<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, frozen, tinned, processed, seasonal, harvested healthy/varied diet</p> <p>Measure vocab: scales, weight, g, kg</p>		<p>ingredients, yeast, dough, bran, flour, wholemeal, baking soda, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality, utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble</p> <p>Measure vocab: g, kg</p>	
To take inspiration from design throughout history	<ul style="list-style-type: none"> • Disassemble products to understand how they work. • Improve on existing designs, giving reasons for choices. • Identify some of the great designers in different areas of study to generate ideas from their designs. 		<ul style="list-style-type: none"> • Use and combine knowledge of inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products to create their own innovative designs. • Evaluate the design of products so as to suggest improvements to the user experience. 	