



	Design, make, evaluate and improve	Take Inspiration from design throughout history	Cooking and nutrition	Materials	Computing	Construction	Textiles	Mechanics	Electricals and electronics
Year 1	<ul style="list-style-type: none"> Explain what they are making and which materials they are using. Design products that have a clear purpose and an intended user. Use pictures and words to convey what they want to make. Make products, using a range of tools to cut, shape, join and finish. 		<ul style="list-style-type: none"> Understand where food comes from. Group familiar food products e.g. fruit and vegetables. Cut ingredients safely. Prepare simple dishes-safely and hygienically-without using a heat source. 	<ul style="list-style-type: none"> Fold, tear and cut paper or card. Investigate strengthening sheet materials. Roll paper to create tubes. Demonstrate a range of joining techniques such as gluing or taping. Measure and mark out lines. 		<ul style="list-style-type: none"> Mark out materials to be cut using a template. With support cut strip wood/dowel using a hacksaw. Make vehicles with construction kits which contain free running wheels. 	<ul style="list-style-type: none"> Weave with a range of different fabrics. Sew and join fabrics using a running stitch. 	<ul style="list-style-type: none"> Attach wheels to chassis using an axle. Make vehicles with construction kits which contain free running wheels. 	
Year 2	<ul style="list-style-type: none"> Say what they like and don't like about their product and explain why. Talk about how closely their finished product meets their design criteria. Begin to use software to represent 2D designs. 		<ul style="list-style-type: none"> Group foods into the five groups in The Eatwell Plate. Cut, grate or peel ingredients safely. Prepare simple dishes-safely and hygienically-without using a heat source. Measure or weigh using cups or electronic scales. 	<ul style="list-style-type: none"> Demonstrate a range of joining techniques such as gluing, taping or creating hinges. Cut materials safely using tools provided. Demonstrate a range of cutting and shaping techniques such as tearing, cutting, folding and curling. Use simple pop-ups. 		<ul style="list-style-type: none"> Use a range of materials to create models with wheels and axles e.g. tubes, dowel and cotton reels. Use materials to practise drilling, screwing, nailing and gluing to strengthen products. 	<ul style="list-style-type: none"> Cut out shapes which have been created by drawing round a template onto the fabric. Begin to sew using a range of basic stitches. 	<ul style="list-style-type: none"> Use a range of materials to create models with wheels and axles e.g. tubes, dowel and cotton reels. 	
Year 3	<ul style="list-style-type: none"> Investigate existing products to analyse and understand how they are made. Develop ideas to create a design. Generate designs with annotated sketches. Identify steps to make their product. Understand what a prototype is and make a basic model. 	<ul style="list-style-type: none"> Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. Improve upon existing designs, giving reasons for choices. Disassemble products to 	<ul style="list-style-type: none"> Know that a healthy diet is made up from a variety of different food and drink, as depicted in The Eatwell Plate. Measure ingredients using scales. Prepare ingredients hygienically and using the appropriate utensils by following a recipe. 	<ul style="list-style-type: none"> Measure and mark out accurately. Cut materials accurately and safely by selecting appropriate tools. Cut slots and internal shapes. 	<ul style="list-style-type: none"> Generate designs with annotated sketches and computer-aided design (CAD) where appropriate. 	<ul style="list-style-type: none"> Strengthen frames using diagonal struts. Investigate how to make structures more stable e.g by widening the base. 			



	<ul style="list-style-type: none"> • Reflect on work and techniques as work progresses. • 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. 	understand how they work.							
Year 4	<ul style="list-style-type: none"> • Investigate existing products, including drawing them to analyse and understand how they are made. • Develop more than one design. • Generate designs with annotated sketches and computer-aided design (CAD) where appropriate. • Plan a sequence of actions to make a product. • Develop prototypes. • Refine work and techniques as work progresses, continually evaluating the product design. • Identify strengths and weaknesses of their design ideas, with suggestions on how the product could be improved. • Analyse how closely their finished product meets their design criteria and meets the need of the user. 	Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques). Improve upon existing designs, giving reasons for choices. Disassemble products to understand how they work.		<ul style="list-style-type: none"> • Measure and mark out to the nearest mm. • Use and explore complex popups. • Create nets. 			<ul style="list-style-type: none"> • Join fabrics using a range of stitches with increasing independence. • Add further decoration to their work using buttons , beads, sequins etc • Use a pattern • Sewing skills are becoming more accurate. 	<ul style="list-style-type: none"> • Begin to use mechanical systems in their products 	<ul style="list-style-type: none"> • Create series circuits.
Year 5	<ul style="list-style-type: none"> • Undertake research to inform design process. • Use prototypes confidently to 	<ul style="list-style-type: none"> • Combine element of design from a range of inspirational designs throughout 		<ul style="list-style-type: none"> • Join/combine materials with temporary, fixed or moving joints. 	<ul style="list-style-type: none"> • Control a model using an ICT control model. • Use prototypes, cross-sectional diagrams, exploded 	<ul style="list-style-type: none"> • Use a glue gun with close supervision. • Join materials using appropriate methods. 		<ul style="list-style-type: none"> • Understand and use mechanical structures in their products e.g. gears, 	



<p>represent their designs including CAD software where necessary.</p> <ul style="list-style-type: none"> • Identify and understand the materials and methods of construction of a product. • Complete products to a high-quality finish. • Make suggestions on how their design/product could be improved. • Make relevant improvements on their designs/products. • Consider the views of others when evaluating their own work. 	<p>history, giving reasons for choices.</p> <ul style="list-style-type: none"> • Create innovative designs that improve upon existing products. • Evaluate the design of products so as to suggest improvements to the user experience. 		<ul style="list-style-type: none"> • Measure and mark out to the nearest mm. • Cut materials with precision. • Cut accurately and safely to a marked line. 	<p>diagrams and CAD software to represent designs.</p>	<ul style="list-style-type: none"> • Use a hand drill to drill tight and loose fit holes. • Cut wood accurately to 1mm. Build frameworks using a range of materials e.g. wood, card and corrugated plastic. 		<p>pulleys, levers and gears.</p> <ul style="list-style-type: none"> • Use a cam to make an up and down mechanism. 	
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Year 6	<ul style="list-style-type: none"> • Undertake research to inform design process including the use of surveys/interviews. • Use prototypes, cross-sectional diagrams, exploded diagrams and CAD software to represent designs. • Justify their decisions about materials and methods of construction of a product. • Ensure products have a high-quality finish, using art skills where appropriate. • Identify and implement actions on how their design/product could be improved, with justifications. • Consider the views of the user when evaluating their own work. 	<ul style="list-style-type: none"> • Combine element of design from a range of inspirational designs throughout history, giving reasons for choices. • Create innovative designs that improve upon existing products. • Evaluate the design of products so as to suggest improvements to the user experience. 	<ul style="list-style-type: none"> • Assemble or cook ingredients, controlling the temperature of the oven or hob if cooking. • Combine ingredients appropriately e.g. beating or rubbing. • Measure ingredients to the nearest gram and millilitre and calculate ratios of ingredients to scale up or down from a recipe. • 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. • Understand the importance of correct storage and handling of ingredients. 	<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. 			<ul style="list-style-type: none"> • Create products using pattern pieces and demonstrate an awareness of seam allowance. • Pin and tack fabric pieces together. • Join fabrics by over sewing, back stitch, blanket stitch. • Make quality products with increasing accuracy and independence. 		<ul style="list-style-type: none"> • Create circuits that employ a number of components (such as LEDs, resistors and transistors). • Create parallel circuits.
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