



Design and Technology

In Design and Technology, our pupils draw on skills learnt across the Caldecote curriculum and apply them with creativity and imagination to solve real, relevant problems linked to our school, village, local and wider communities. Pupils design, make and evaluate products in response to design briefs, exploring their own and others ideas, creating and testing prototypes and feeling a sense of pride in their finished pieces. They are encouraged to relate their learning to the wider world and to gain valuable technical skills.



Reception Year							
Generate ideas and Make							Key Vocab / Learning Concepts
Food	Materials	Textiles	Electrical and Electronics	Construction	Mechanics	Computing	
Prepare food Practise cutting skills	Cut stick and glue	Talk about properties of different materials	Switching off and on How do things work?	Make models	Share picture pop up books	Begin to develop skills	Cut, join, Cook, bake Safety Clean, dirty
Young Designers should be able to							
<ul style="list-style-type: none">▪ Prepare some simple food using cutting implements▪ Use a range of materials and joining techniques to create a model▪ To talk about their constructions and give reasons for their choices▪ To operate an object with switches and investigate how it works							



Year 1							
Design, make, evaluate and use technical knowledge							Key Vocab / Learning Concepts
Food	Materials	Textiles	Electrical and Electronics	Construction	Mechanics	Computing	
<p>Cut ingredients safely and hygienically</p> <p>Measure using measuring cups</p> <p>Assemble ingredients</p>	<p>Cut materials safely using tools provided</p> <p>Measure and mark out</p> <p>Use techniques such as tearing, cutting, folding</p> <p>Use joining techniques such as gluing, hinges or combining materials to strengthen</p>	<p>Shape textiles using templates</p> <p>Join textiles using running stitch</p>	<p>Diagnose faults in battery operated devices such as low battery</p>	<p>Use materials to practice drilling, screwing, gluing materials to make and strengthen products</p>	<p>Create products using levers and wheels</p>	<p>Model designs using software</p>	<p>Safety</p> <p>Hygiene</p> <p>Measure</p> <p>Battery</p> <p>Running stitch</p> <p>Lever</p> <p>Axil</p> <p>Drill</p> <p>Structure</p> <p>Stability</p>
Year 1 Designers should be able to							
<ul style="list-style-type: none"> ▪ Use their own ideas to make something ▪ Describe how something works ▪ Cut food safely ▪ Make a product which moves ▪ Make a model stronger ▪ Explain to someone else how they want to make their product ▪ Choose appropriate resources and tools ▪ Make a simple plan before making something 							



Year 2							
Design, make, evaluate and use technical knowledge							Key Vocab / Learning Concepts
Food	Materials	Textiles	Electrical and Electronics	Construction	Mechanics	Computing	
Peel and grate ingredients safely and hygienically Weigh using electronic scales Cook ingredients	Cut materials safely using tools provided Measure and mark out to the nearest centimetre Use techniques such as urling Use joining techniques such as gluing, hinges or combining materials to strengthen	Shape textiles using templates Colour and decorate textiles using a number of techniques such as dying, adding sequins or printing	Diagnose faults in battery operated devices such as water damage or battery terminal damage	Use materials to practice drilling, screwing, gluing and nailing materials to make and strengthen products	Create products using winding mechanisms	Model designs using software	Mark out Mock-up Screw/Nail Circuit Template Function Evaluate Design Brief Pulley Hinge
Year 2 Designers should be able to							
<ul style="list-style-type: none"> ▪ Think of an idea and plan what to do next ▪ Choose tools and materials and explain why they have chosen them ▪ Join materials and components in different ways ▪ Explain what went well with their work ▪ Explain why they have chosen specific textiles ▪ Measure materials to use in a model or structure ▪ Describe the ingredients they are using 							



Year 3							
Design, make, evaluate and use technical knowledge							Key Vocab / Learning Concepts
Food	Materials	Textiles	Electrical and Electronics	Construction	Mechanics	Computing	
Prepare ingredients hygienically using appropriate utensils Measure ingredients accurately Assemble or cook ingredients controlling the temperature of the oven, if cooking	Cut materials accurately and safely by selecting appropriate tools Measure and mark out to the accurately Apply appropriate cutting and shaping techniques	Join textiles with appropriate stitching Select the most appropriate techniques to decorate textiles	Create series and parallel circuits	Choose suitable techniques to construct products Strengthen materials using suitable techniques	Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product such as levers and winding, mechanisms	Use software to design and present product design	Utensils Prototype Parallel/ Series Circuits Overlap Measure with accuracy Assemble Mechanism Three-dimensional Healthy lifestyle Food groups
Year 3 Designers should be able to							
<ul style="list-style-type: none"> ▪ Prove that their design meets some set criteria ▪ Follow a step-by-step plan, choosing the right equipment and materials ▪ Design a product and make sure that it looks attractive ▪ Choose a material for both its suitability and its appearance ▪ Select the most appropriate tools and techniques for a given task ▪ Make a product which uses both electrical and mechanical components ▪ Work accurately to measure, make cuts and make holes ▪ Describe how food ingredients come together 							



Year 4							
Design, make, evaluate and use technical knowledge							Key Vocab / Learning Concepts
Food	Materials	Textiles	Electrical and Electronics	Construction	Mechanics	Computing	
<p>Prepare ingredients hygienically using appropriate utensils</p> <p>Measure ingredients to the nearest gram accurately</p> <p>Assemble or cook ingredients controlling the temperature of hob, if cooking</p>	<p>Measure and mark out to the nearest millimetre</p> <p>Apply appropriate cutting and shaping techniques that include cuts such as slots or cut outs</p> <p>Select appropriate joining techniques</p>	<p>Understand the need for a seam allowance</p> <p>Select the most appropriate techniques to decorate textiles</p>	<p>Create series and parallel circuits</p>	<p>Choose suitable techniques to construct products</p> <p>Strengthen materials using suitable techniques</p>	<p>Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product such as pulleys and gears</p>	<p>Use software to design and present product design</p> <p>Control and monitor models using software designed for this purpose</p>	<p>Annotated diagram</p> <p>Modify</p> <p>Aesthetics</p> <p>Measure – increasing accuracy</p> <p>Components</p> <p>Product System</p> <p>Three-dimensional</p> <p>Helmet</p> <p>Shield/Protect/Defend</p>
Year 4 Designers should be able to							
<ul style="list-style-type: none"> ▪ Use ideas from other people when they are designing ▪ Produce a plan and explain it ▪ Evaluate and suggest improvements for their designs ▪ Evaluate products for their purpose and appearance ▪ Explain how they have improved their original design ▪ Present a product in an interesting way ▪ Measure accurately ▪ Persevere and adapt their work when their original ideas do not work ▪ Know how to be both hygienic and safe when using food 							



Year 5							
Design, make, evaluate and use technical knowledge							Key Vocab / Learning Concepts
Food	Materials	Textiles	Electrical and Electronics	Construction	Mechanics	Computing	
<p>Understand the importance of correct storage and handling of ingredients</p> <p>Measure accurately</p> <p>Demonstrate a range of baking and cooking techniques</p> <p>Create and refine recipes, including ingredients, methods, cooking times and temperature</p>	<p>Cut materials with precision and refine the finish with appropriate tools such as sanding wood after cutting</p> <p>Show an understanding of the qualities of materials to choose appropriate tools to cut and shape such as the nature of fabric may require sharper scissors than would be used to cut paper</p>	<p>Create objects such as a cushion that employ a seam allowance</p> <p>Use qualities of materials to create suitable and tactile effects in the decoration of textiles such as soft decoration for comfort on a cushion</p>	<p>Create circuits using electronic kits that employ a number of components such as LEDs, resistors, transistors and chips</p>	<p>Develop a range of practical skills to create products such as cutting, drilling and screwing, nailing, gluing and sanding</p>	<p>Use innovative combinations of electronics or computing and mechanics in product design</p>	<p>Write code to control and monitor models of products</p>	<p>Engineering</p> <p>Insulation</p> <p>Shelter</p> <p>Theme, Pattern, Embroidery thread</p> <p>Nutrition, Balance</p> <p>Shortage, Substitute</p> <p>Eye-holes, Rushes, Thatch</p> <p>Junior hacksaw, Block, Corner</p> <p>Triangular support</p> <p>Cutting, shaping, joining, finishing</p> <p>Diagrams, annotations</p> <p>Back stitch, cross stitch, daisy stitch etc</p>
Year 5 Designers should be able to							
<ul style="list-style-type: none"> ▪ Come up with a range of ideas after collecting information from different sources ▪ Produce a detailed, step-by-step plan ▪ Suggest alternative plans; outlining the positive features and draw backs ▪ Explain how a product will appeal to a specific audience ▪ Evaluate appearance and function against original criteria ▪ Use a range of tools and equipment competently ▪ Show that they can be both hygienic and safe in the kitchen 							



Year 6							
Design, make, evaluate and use technical knowledge							Key Vocab / Learning Concepts
Food	Materials	Textiles	Electrical and Electronics	Construction	Mechanics	Computing	
<p>When storing and handling of ingredients use knowledge of micro-organisms</p> <p>Calculate ratios of ingredients to scale up or down from a recipe</p> <p>Create and refine recipes, including ingredients, methods, cooking times and temperature</p>	<p>Use precise scissor cut after roughly cutting out the shape</p> <p>Show an understanding of the qualities of materials to choose appropriate tools to cut and shape such as the nature of fabric may require sharper scissors than would be used to cut paper</p>	<p>Join textiles with a combination of stitching techniques such as back stitch for seams and running stick to attach decoration</p> <p>Use qualities of materials to create suitable and tactile effects in the decoration of textiles such as soft decoration for comfort on a cushion</p>	<p>Create circuits using electronic kits that employ a number of components such as LEDs, resistors, transistors and chips</p>	<p>Develop a range of practical skills to create products such as cutting, drilling and screwing, nailing, gluing and sanding</p>	<p>Convert rotary motion to linear motion using cams</p> <p>Use innovative combinations of electronics or computing and mechanics in product design</p>	<p>Write code to control and monitor models of products</p>	<p>Seasonal, Health, Nutrition, Balance</p> <p>Environment, Climate, Recipe, Taste, Technique</p> <p>Innovative, functional, appealing</p> <p>Market research</p> <p>Fit for purpose</p> <p>Precision</p> <p>Appropriate tools</p> <p>Nature of fabric, weight, properties</p> <p>Prototypes, testing, revisiting</p> <p>High quality products</p> <p>Micro-organisms</p> <p>Ratios- scale up or down</p>
Year 6 Designers should be able to							
<ul style="list-style-type: none"> ▪ Use market research to inform their plans and ideas and be able to work within a budget ▪ Follow, refine and justify their plans in a convincing way ▪ Show that they consider culture and society in their plans and designs ▪ Show that they can test and evaluate their products against a set of clear criteria ▪ Explain how products should be stored and give their reasons 							



Year	Generate ideas, Make, Evaluate and Use Technical Knowledge						
	Food	Materials	Textiles	Electrical & Electronics	Construction	Mechanics	Computing
R	X	X	X	X	X	X	
1	X	X	X	X	X	X	
2	X	X	X		X	X	X
3	X	X	X	X	X	X	X
4	X	X	X	X	X	X	X
5	X	X	X		X		X
6	X	X	X		X	X	X