



Design and Technology Key Stage 2

Year 3

Year 4

Year 5

Year 6

Designing	Making	Evaluating	Technical Knowledge	Food Technology
<ul style="list-style-type: none"> • 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 • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design 	<ul style="list-style-type: none"> • Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately • Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities 	<ul style="list-style-type: none"> • Investigate and analyse a range of existing products • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work • Understand how key events and individuals in design and technology have helped shape the world 	<ul style="list-style-type: none"> • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures • Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] • Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] • Apply their understanding of computing to program, monitor and control their products. 	<ul style="list-style-type: none"> • Understand and apply the principles of a healthy and varied diet • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques • Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed
<ul style="list-style-type: none"> • Make prototypes of pneumatic movements and stable structures. • Using research as a class generate success criteria for a product that is innovative, functional and appealing 	<ul style="list-style-type: none"> • Follow a design choosing appropriate equipment materials or ingredients. • Select the most appropriate tools and techniques for a task • Work accurately to measure, make cuts, 	<ul style="list-style-type: none"> • Investigate tall structures and analyse why they are stable and strong. • Make ongoing evaluations recording how to improve a finished model against the success criteria 	<ul style="list-style-type: none"> • Know how to strengthen a product by stiffening a given part or reinforcing a part of the structure. • Apply their understanding of a wide base to make their outcome stable. Apply their knowledge of 	<ul style="list-style-type: none"> • Understand and apply their knowledge about a healthy diet understanding the proportions of different food groups. • Prepare and make a balanced healthy lunch

<ul style="list-style-type: none"> • Design a product which fulfils the success criteria. • Create an annotated diagram from different angles • Choose materials for both its suitability and appearance. • Successfully work as a team. 	<ul style="list-style-type: none"> • make holes, add decoration. • Make a product which fulfils the success criteria. 	<ul style="list-style-type: none"> • Know why a model has, or has not, been successful and make adjustments. • Make a photoframe using the knowledge gained and fulfilling the success criteria • Investigate pneumatics and how they make things work. • Look at pneumatics in everyday life • In a team create a monster that has moving parts powered by pneumatics and fulfils the success criteria. 	<ul style="list-style-type: none"> • triangles and cylinders being strong shapes • Apply their knowledge of a pneumatic system to add a pneumatic system to their outcome 	<ul style="list-style-type: none"> • Select appropriate ingredients and use a range of techniques • Know how to be both hygienic and safe when using food
<ul style="list-style-type: none"> • Use scientific research about electricity and sound and make prototypes to help design a successful outcome that fulfils the success criteria. • Generate success criteria as a class to help design successful outcome that is innovative, functional and appealing • Communicate ideas in a range of ways, including sketches and drawings which are annotated. • Choose materials for suitability and appearance. 	<ul style="list-style-type: none"> • Know which tools to use for a particular task and show knowledge of handling the tool • Know which material is likely to give the best outcome and fulfil the success criteria. • Choose textiles considering functional properties and aesthetic qualities. Join textiles using appropriate tools. • Work accurately to measure, make cuts, make holes, add decoration. • Make a product which fulfils the success criteria. 	<ul style="list-style-type: none"> • Investigate and analyse musical instruments and lighting/different lights. • Evaluate products for both their purpose and appearance and make adjustments where necessary. • Make ongoing evaluations recording how to improve a finished model against the success criteria • Explain how the original design has been improved 	<ul style="list-style-type: none"> • Understand and use a simple circuit with a switch and bulb in an outcome. • Understand how the use of cylinders can strengthen an outcome. Incorporate cylinders into the outcome. • Understand the importance of a wide base • Understand how different musical notes can be made with the resources. 	

<ul style="list-style-type: none"> • Use research and understanding about a cam mechanism and paper engineering and make prototypes to help design a successful outcome fulfilling the success criteria. • Generate success criteria as a class to help design successful outcome that is innovative, functional and appealing • Communicate ideas in a range of ways, including sketches and drawings which are annotated. • Choose materials for suitability and appearance. 	<ul style="list-style-type: none"> • Choose and use a range of tools and equipment competently • Successfully use tools to hold, cut and smooth wood. • Work with accuracy to measure wood and weigh ingredients. • Make a product which fulfils the success criteria. 	<ul style="list-style-type: none"> • Research products with a cam mechanism • Research books with paper engineering. • Evaluate biscuits and their packaging. • Look at the use of a cam in an engine. • Generate success criteria and use this to evaluate appearance and function against original criteria • Explain how the original design has been improved. 	<ul style="list-style-type: none"> • Understand how a cam works and incorporate it into the outcome using previous knowledge of an axel • Understand a lever, rotate and reveal mechanism, a more complex slider and a pop-up and use them in their presentation. 	<ul style="list-style-type: none"> • Understand seasonality of fruits and vegetables. • Understand why preserving is useful. • Understand how you can make a more healthy biscuit using understanding of healthy eating • Prepare and cook a health bar By accurately weighing ingredients, combining them using different techniques and dividing equally fulfilling the success criteria.
<ul style="list-style-type: none"> • Use research of electric powered toy vehicles and use scientific knowledge and research about electricity, pulleys and gears to develop a design. • Create a step by step design plan showing annotation, cross sections and exploded diagrams. • Develop more detailed success criteria as a class 	<ul style="list-style-type: none"> • Know which tool to use for a specific practical task • Know how to use any tool correctly and safely and know what it's used for • Explain why a specific tool is best for a specific action • Make a product which fulfils the success criteria <p>Make a Lego We Do product which is</p>	<ul style="list-style-type: none"> • Investigate and analyse bicycle gears to develop knowledge of gears. • Know how to test and evaluate designed products • Know how to use peer evaluation to improve a design. • Make continuous evaluations of the product against clear criteria explaining how 	<ul style="list-style-type: none"> • Understand and use an electrical circuit with a motor, switch, gears and pulley correctly and accurately to power a motorised vehicle. • Use Lego WeDo to program and control Lego construction equipment. • Visit Stafford College Innovation Centre to advance program and 	

<ul style="list-style-type: none">• Design a moving car incorporating an electric circuit with a switch and motor, a pulley and gears.	programmed using the We Do software	and why products can be improved.	control skills using Lego Robotics.	
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