

Programme of Study: Design & Technology

<p align="center">Key Stage 1</p> <p>Pupils will develop knowledge, understanding and skills about the process of designing and making through a range of activities, materials and contexts.</p>	<p align="center">Key Stage 2</p> <p>Pupils will extend knowledge, understanding and skills</p>
<p>Pupils should be taught to:</p> <p><u>Design</u></p> <ul style="list-style-type: none"> design purposeful, functional, appealing products for themselves and other users based on design criteria generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology <p><u>Make</u></p> <ul style="list-style-type: none"> select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics <p><u>Evaluate</u></p> <ul style="list-style-type: none"> explore and evaluate a range of existing products evaluate their ideas and products against design criteria <p><u>Technical Knowledge</u></p> <ul style="list-style-type: none"> build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. 	<p>Pupils should be taught to:</p> <p><u>Design</u></p> <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 <p><u>Make</u></p> <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 wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities <p><u>Evaluate</u></p> <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 <p><u>Technical Knowledge</u></p> <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.

Cooking and Nutrition

Key Stage 1

Pupils will **develop** knowledge, understanding and skills about food preparation and principles of healthy nutrition.

Pupils should be taught to:

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

Key Stage 2

Pupils will **extend** knowledge, understanding and skills about food preparation and principles of healthy nutrition instilling a love of cooking.

Pupils should be taught to:

- 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.

Progression of Study: Design & Technology



	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum	Pupils should be taught to: <ul style="list-style-type: none"> • design purposeful, functional, appealing products for themselves and other users based on design criteria • generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology 		Pupils should be taught to: <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 			
Designing Understanding contexts, users and purposes	Begin to think about the purpose of the design and the intended user Begin to explore materials, make templates and mock ups e.g., moving picture / lighthouse	State the purpose of the design and the intended user Explore materials, make templates and mock ups e.g., moving picture / lighthouse	Begin to gather information about the needs and wants of particular individuals and groups Begin to develop their own design criteria and use these to inform their ideas Begin to research designs	Gather information about the needs and wants of particular individuals and groups Develop their own design criteria and use these to inform their ideas Research designs	Carry out research, using surveys, interviews, questionnaires and web-based resources Identify the needs, wants, preferences and values of particular individuals and groups Develop a simple design specification to guide their thinking Recognise when their products have to fulfil conflicting requirements	
Generating, developing, modelling and communicating ideas	Begin to generate own ideas for design by drawing on own experiences or from reading	Generate own ideas for design by drawing on own experiences or from reading	Share and clarify ideas through discussion Model their ideas using prototypes and pattern pieces Use annotated sketches, cross-sectional drawings and diagrams Use computer-aided design		Generate innovative ideas, drawing on research Make design decisions, taking account of constraints such as time, resources and cost Develop prototypes	
National Curriculum	Pupils should be taught to: <ul style="list-style-type: none"> • select from and use a range of tools and equipment to perform practical tasks [e.g., cutting, shaping, joining and finishing] • select from and use a wide range of materials and components, including construction 		Pupils should be taught to: <ul style="list-style-type: none"> • select from and use a wider range of tools and equipment to perform practical tasks [e.g., cutting, shaping, joining and finishing], accurately • select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities • Follow procedures for safety 			

	materials, textiles and ingredients, according to their characteristic		<ul style="list-style-type: none"> Use a wider range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components 			
<p>Making</p> <p>Practical skills and techniques</p>	<p>Follow procedures for safety</p> <p>Begin to use and make own templates</p> <p>Begin to measure, mark out, cut out and shape materials and components (supported if needed)</p> <p>Begin to assemble, join and combine materials and components (supported if needed)</p> <p>Use simple fixing materials e.g., temporary – paper clips tape and permanent – glue, staples</p> <p>Use finishing techniques (inc those from art & design)</p>	<p>Follow procedures for safety</p> <p>Use and make own templates</p> <p>Measure, mark out, cut out and shape materials and components</p> <p>Assemble, join and combine materials and components</p> <p>Explain reasons for choice of fixing materials</p> <p>Think carefully about finishing techniques (including those from art and design)</p>	<p>Begin to measure, mark out, cut and shape materials and components with some accuracy</p> <p>Assemble, join and combine materials and components with some accuracy</p> <p>Apply a range of finishing techniques, include those from art and design, with some accuracy</p>	<p>Measure, mark out, cut and shape materials and components with some accuracy</p>	<p>Accurately measure to nearest cm/ mm mark out, cut and shape materials and components</p> <p>Accurately assemble, join and combine materials/components</p> <p>Accurately apply a range of finishing techniques, including those from art and design</p> <p>Demonstrate resourcefulness, e.g., make refinements</p>	<p>Accurately measure to nearest mm, mark out, cut and shape materials and components</p> <p>Use techniques that involve a number of steps</p> <p>Refine design and explain reasons for refinement</p>
<p>Planning and making</p>	<p>Make a plan of their product</p> <p>Use a range of tools and equipment safely and correctly</p> <p>Choose appropriate materials and components for their product</p>	<p>Plan by suggesting what to do next</p> <p>Select from a range of tools and equipment (explaining their choices)</p> <p>Select from a range of materials and components according to their characteristics</p>	<p>Select tools and equipment suitable for the task</p> <p>Select materials and components suitable for the task</p> <p>Order the main stages of making</p> <p>Produce detailed lists of tools, equipment and materials that they need</p>	<p>Explain their choice of tools and equipment in relation to the skills and techniques they will be using</p> <p>Explain their choice of materials and components according to functional properties and aesthetic qualities</p>	<p>Formulate step-by-step plans as a guide to making</p>	

National Curriculum	Pupils should be taught to: <ul style="list-style-type: none"> • explore and evaluate a range of existing products • evaluate their ideas and products against design criteria 		Pupils should be taught to: <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 • Investigate - how well products have been designed, how well products have been made, why materials have been chosen, what methods of construction have been used, how well products work, how well products achieve their purposes and how well products meet user needs and wants 			
Evaluating Existing products	Begin to investigate and understand - what products are, who they are for, how they are made and what materials are used	Investigate - what products are, who they are for, how they are made and what materials are used	Investigate - who designed and made the products, where products were designed and made, when products were designed and made and whether products can be recycled or reused		Investigate - how much products cost to make, how innovative products are and how sustainable the materials in products are	
Own ideas and products	Talk about their design ideas and what they are making Suggest how their products could be improved	Make simple judgements about their products and ideas against design criteria Evaluating products and components used	Identify the strengths and weaknesses of their ideas and products Consider the views of others, including intended users, to improve their work		Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make Compare their ideas and products to their original design specification	
National Curriculum	Pupils should be taught to: <ul style="list-style-type: none"> • build structures, exploring how they can be made stronger, stiffer and more stable • explore and use mechanisms [e.g., levers, sliders, wheels and axles], in their products 		Pupils should be taught to: <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 [e.g., series circuits incorporating switches, bulbs, buzzers and motors] • apply their understanding of computing to program, monitor and control their products <p>Understand how to use learning from science and maths to help design and make products that work Know that materials have both functional properties and aesthetic qualities Know that materials can be combined and mixed to create more useful characteristics Know that mechanical and electrical systems have an input, process and output Use the correct technical vocabulary for the projects they are undertaking</p>			
Technical	Understand about the	<i>Understand about the</i>	Understand how levers	Understand how	Understand how cams,	Understand how more

knowledge	<p>simple working characteristics of materials and components</p> <p>Understand about the movement of simple mechanisms: levers, sliders (Year 1)</p> <p>Understand how freestanding structures can be made stronger, stiffer and more stable</p>	<p><i>simple working characteristics of materials and components</i></p> <p><i>Understand about the movement of simple mechanisms: wheels and axles (Year 2)</i></p>	<p>and linkages create movement</p> <p>Know how to make strong, stiff shell structures</p> <p>Know that a single fabric shape can be used to make a 3D textiles product</p>	<p>pneumatic systems create movement</p> <p>Understand how simple electrical circuits and components can be used to create functional products</p>	<p>pulleys and gears create movement</p> <p>Know how to reinforce/strengthen a 3D framework</p> <p>Know that a 3D textiles product can be made from a combination of fabric shapes</p>	<p>complex electrical circuits and components can be used to create functional products</p> <p>Understand how to program a computer to control their products</p> <p>Understand how to program a computer to monitor changes in the environment / control their products</p>
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← Know the correct technical vocabulary for the projects they are undertaking →

National Curriculum	<p>Pupils should be taught to:</p> <ul style="list-style-type: none"> use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from 		<p>Pupils should be taught to:</p> <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 How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source <p>How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</p>			
Cooking and Nutrition	Know where food comes from – all food comes from plants or animals	Know where food comes from -food has to be farmed, grown elsewhere (e.g., home) or caught	Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world	Know that seasons may affect the food available Know that food ingredients can be fresh, pre-cooked and processed	Understand how food is processed into ingredients that can be eaten or used in cooking	Know that a recipe can be adapted a by adding or substituting one or more ingredients
Food preparation	Prepare simple dishes safely and hygienically, without using a heat source Use techniques such as cutting Name and sort foods into the five groups of	Use appropriate equipment to weigh and measure ingredients Know that everyone should eat at least five portions of fruit and vegetables every day	Know that a healthy diet is made up from a variety and balance of different foods and drinks, as depicted in the 'eat well' plate Measure using grams	Know that to be active and healthy, food is needed to provide energy for the body Follow a recipe	Know that different foods contain different substances - nutrients, water and fibre - that are needed for health Understand the need for correct storage Measure accurately	Know that recipes can be adapted to change the appearance, taste, texture and aroma Work out ratios in recipes

	the 'eat well' plate	Understand that food ingredients should be combined according to their sensory characteristics				
	Years 1 and 2		Years 3 and 4		Years 5 and 6	
Recipe Instructions	Follow <ul style="list-style-type: none"> • A simple recipe supported by an adult Carry out <ul style="list-style-type: none"> • Instructions with a little support 		Follow <ul style="list-style-type: none"> • A simple recipe with guidance from an adult Carry out <ul style="list-style-type: none"> • Instructions independently 		Follow <ul style="list-style-type: none"> • A simple recipe independently Carry out <ul style="list-style-type: none"> • Modifications to recipes 	