

## Curriculum Overview – Design and Technology

### Units Covered

Year Group	Autumn Term		Spring 1		Summer 1	
	Year A	Year B	Year A	Year B	Year A	Year B
Year 1 and 2	<b>Theme:</b> Puppet making (textiles)  <b>Killer Question:</b> How can I make a puppet for others to play with?	<b>Theme:</b> Making Fire Engines  <b>Killer Question:</b> What parts can be used to design and make a fire engine?		<b>Theme:</b> Eat more fruit and vegetables  <b>Killer Question:</b> Can you create your own healthy recipe?	<b>Theme:</b> Seaside Snacks (food)  <b>Killer Question:</b> What snacks are suitable to take to the seaside?	<b>Theme:</b> Flying Kites  <b>Killer Question:</b> Will the choice of materials effect whether my kite flies?
Year 3 and 4	<b>Theme:</b> Programming To apply their understanding of computing to program, monitor and control their products.	<b>Theme:</b> Electrical circuits  <b>Killer Question:</b> Can you create an efficient warning signal for an air raid attack?	<b>Theme:</b> Bridges  <b>Killer Question:</b> Can you design and make a model bridge for the River Severn?	<b>Theme:</b> Mechanisms  <b>Killer Question:</b> How can you use moving mechanisms to support the explanation of how a volcano erupts in a storybook for children?	<b>Theme:</b> Cookery  <b>Killer Question:</b> Why are certain foods in season at different times of year?	<b>Theme:</b> Textiles  <b>Killer Question:</b> How can you use sewing developments from pre-historic times to design and make a needle pouch?
Year 5 and 6	<b>Theme:</b> Structures (Tudor Houses)  <b>Killer Question:</b> How can I create a structure, ensuring it is strengthened?	<b>Theme:</b> Sewing (Victorian Teddy bears)  <b>Killer Question:</b> Which sewing skills are best to create a Victorian teddy?	<b>Theme:</b> Cookery  <b>Killer Question:</b> What food is eaten in south American countries?	<b>Theme:</b> Cams and mechanisms (Moving toys)  <b>Killer Question:</b> How will cams effect the movement of an object?	<b>Theme:</b> Woodwork  <b>Killer Question:</b> How can patterns be created in wood?	<b>Theme:</b> Electrical Motors (Moon Buggies)  <b>Killer Question:</b> Can I create a moon buggy that moves and lights up?

### National Curriculum Coverage

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<b>Key Stage One - Design and Technology</b>									
	Statutory National Curriculum Statement	Year 1	Year 2	Polar Regions	Seaside	Toys	Great Fire of London	Kenya	Victorians
<b>Design</b>	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	Draw on their own experience to help generate ideas	Generate ideas by drawing on their own and other people's experiences						
		Suggest ideas and explain what they are going to do	Develop their design ideas through discussion, observation, drawing and modelling						
		Identify a target group for what they intend to design and make	Identify a purpose for what they intend to design and make						
		Model their ideas in card and paper	Identify simple design criteria						
		Develop their design ideas applying findings from their earlier research	Make simple drawings and label parts						
<b>Make</b>	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,	Make their design using appropriate techniques							
		With help measure, mark out, cut and shape a range of materials							
		Use tools e.g. scissors and a hole punch safely							

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	according to their characteristics	Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape							
		Select and use appropriate fruit and vegetables, processes and tools							
		Use basic food handling, hygienic practices and personal hygiene							
		Use simple finishing techniques to improve the appearance of their product							
Evaluate	explore and evaluate a range of existing products evaluate their ideas and products against design criteria	Evaluate their product by discussing how well it works in relation to the purpose	Evaluate against their design criteria						
		Evaluate their products as they are developed, identifying strengths and possible changes they might make	Evaluate their products as they are developed, identifying strengths and possible changes they might make						
		Evaluate their product by asking questions about what they have made and how they have gone about it	Talk about their ideas, saying what they like and dislike about them						
Technical Knowledge	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								

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

<b>Lower Key Stage 2 - Design and Technology</b>									
Statutory National Curriculum Statement	Year 3	Year 4	Ancient Civilisations	The UK	The Vikings	The Stone Age	Volcanoes	WW2	
Design	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 ideas for an item, considering its purpose and the user/s	Generate ideas, considering the purposes for which they are designing						
	generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	Identify a purpose and establish criteria for a successful product	Make labelled drawings from different views showing specific features						
		Plan the order of their work before starting	Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail						
		Explore, develop and communicate design proposals by modelling ideas	Evaluate products and identify criteria that can be used for their own designs						
		Make drawings with labels when designing							

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<b>Make</b>	<p>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately]</p> <p>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>	Make their design using appropriate techniques	Begin to select tools and materials; use vocab' to name and describe them						
		With help measure, mark out, cut and shape a range of materials	Measure, cut and score with some accuracy						
		Use tools eg scissors and a hole punch safely	Use hand tools safely and appropriately						
		Assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape	Assemble, join and combine materials in order to make a product						
		Select and use appropriate fruit and vegetables, processes and tools	Cut, shape and join fabric to make a simple garment. Use basic sewing techniques						
		Use basic food handling, hygienic practices and personal hygiene	Follow safe procedures for food safety and hygiene						
		Use simple finishing techniques to improve the appearance of their product	Choose and use appropriate finishing techniques						
<b>Evaluate</b>	<p>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</p> <p>understand how key events and individuals in design and technology have helped shape the world</p>	Evaluate their product against original design criteria e.g. how well it meets its intended purpose	Evaluate their work both during and at the end of the assignment						
		Disassemble and evaluate familiar products	Evaluate their products carrying out appropriate tests						

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<b>Technical Knowledge</b>	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						
<b>Cooking and Nutrition</b>	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						

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<b>Upper Key Stage 2 - Design and Technology</b>									
	Statutory National Curriculum Statement	Year 5	Year 6	The Tudors	Rainforests	Anglo Saxons and Romans	Victorians	Rivers	Space and explorers
<b>Design</b>	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 ideas through brainstorming and identify a purpose for their product	Communicate their ideas through detailed labelled drawings						
	generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	Draw up a specification for their design	Develop a design specification						
		Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making if the first attempts fail	Explore, develop and communicate aspects of their design proposals by modelling their ideas in a variety of ways						
		Use results of investigations, information sources, including ICT when developing design ideas	Plan the order of their work, choosing appropriate materials, tools and techniques						
<b>Make</b>	select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately]	Select appropriate materials, tools and techniques	Select appropriate tools, materials, components and techniques						
	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	Measure and mark out accurately	Assemble components make working models						
		Use skills in using different tools and equipment safely and accurately	Use tools safely and accurately						
		Weigh and measure accurately (time, dry ingredients, liquids)	Construct products using permanent joining techniques						

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		Apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens	Make modifications as they go along						
		Cut and join with accuracy to ensure a good-quality finish to the product	Pin, sew and stitch materials together create a product						
			Achieve a quality product						
<b>Evaluate</b>	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	Evaluate a product against the original design specification	Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests						
		Evaluate it personally and seek evaluation from others	Record their evaluations using drawings with labels						
			Evaluate against their original criteria and suggest ways that their product could be improved						
<b>Technical Knowledge</b>	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		Order in robotics workshop every two years.						





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