

INTENT

Design and Technology Curriculum Year B: Planning, Progress and Long-Term Knowledge Growth

YEAR 5/6	Substantive Design and Technology content	Recurring substantive themes, ideas and language (Key Concepts)	Subject rationale: Supporting pupils' wider design and technology curriculum journey	Basic disciplinary training in design and technology
Autumn Term WW2 Food + Textiles	Read recipes of wartime meals from original recipe books.	These two units will be taught alongside our history topic on 'WW2'.	This unit of learning builds upon prior learning of Food technology in KS1 and LKS2. The children will have made healthy sandwiches in LKS2 and will use this knowledge to support them in deciding upon ingredients for their fruit crumbles.	Food technology Understand and can apply the principles of a healthy and varied diet.
	Plan their own fruit crumble recipe using locally sourced fruits.	Our Food technology unit will be based on the children's knowledge of rationing and recipes from WW2. The children will be confident in their knowledge of rationed foodstuffs and apply this in creating their own recipes for fruit crumbles. The children will develop their confidence in preparing and cooking a dish with a heat source. The children will be confident in a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. The Textiles unit will utilise the children's knowledge of 'make do and mend' from WW2. They will apply sewing skills to create a functional product using old materials. The children will have an informed understanding of the qualities of materials, accurately assemble, join and combine materials and components including textiles e.g. backstitch and the use of a seam allowance, choosing appropriate tools to cut and shape using techniques that require multiple steps. The children will consider and apply a range of finishing techniques and demonstrate resourcefulness when tackling practical problems. Pupils will be secure in key vocabulary including: nutrients, substitute, method, recipe, grate, seasonal, dietary requirements, components, textiles, functional, aesthetic, qualities, accuracy, finishing, seam allowance, mark out and appropriate stitch choice	This unit will also support our work as an Eco school as the children source locally grown foodstuffs for their crumble ingredients.	Can 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.
	Make their fruit crumbles.		This unit will also support our work as an Eco school as the children source locally grown foodstuffs for their crumble ingredients.	
	Evaluate their fruit crumbles.			
	Review examples of textiles.			
	Plan their own make do and mend clothing.			
	Practise sewing techniques.			
	Make their own clothing example.			
	Evaluate their final product.			
		This unit on Textiles will build upon sewing a Tudor purse from LKS2 and aspects of weaving work covered in KS1. The children will develop their Textiles knowledge and skills as they now need to design their product, select materials, modify their design considering functionality, audience and aesthetics.	Designing Is able to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	
		This unit will also support our work as an Eco school as the children will practically develop their understanding of the 3 R's (reduce, reuse, recycle).	Making Is able to select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].	
			Evaluating Understand how key events and individuals in design and technology have helped shape the world.	

Spring Term	Revise scientific understanding on forces.	These two units will be taught alongside our history topic on the 'Space Race'.	The unit on Construction and Materials , builds on work from KS1 focussed on buildings and bridge construction work in LKS2. These previous units will give the children a good understanding of selecting and joining materials for an intended purpose.	Designing Is able to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.
	Space Design a Moon Buggy considering suitability of structure.	Our Construction and Materials unit will build upon the children's scientific knowledge. They will be tasked with designing, constructing, testing and evaluating a moveable vehicle (Moon Buggy). The children will develop a range of practical skills and become confident in cutting, measuring and gluing to create a product. The children will demonstrate their ability to refine the finish with appropriate tools e.g. using a precise scissor cut after roughly cutting out a shape. The children will also learn to solve problems encountered in the making stage.		
	Construction and Materials Construct Moon Buggy using a selection of appropriate tools and materials.	Our Computing unit will further their knowledge of using computing software by constructing a working model of a 'Moon Buggy' using Lego. The children will develop their knowledge of writing code to control and monitor models or products.		
	Computing Test Moon Buggy against design specification.			
	Evaluate the effectiveness of their product.	These units will deepen the children's knowledge of the key concepts of Construction, Materials and Computing . Pupils will be secure in key vocabulary including: cross section, bird's eye view, side view, innovative, annotate, chassis, axle, jig, Lego, program, control, debug, changes, sequence, instructions, algorithms, monitor, effect		
	Revise computational thinking in the area of coding.			
	Construct model considering choice of components.	The Computing unit using Lego Wedo links to our Computing programme of study. In each year group, the children develop coding knowledge and skills. The work using Lego Wedo gives the children an opportunity to practise and apply their learning in a practical and hands-on manner.		
	Consider algorithms for different functions e.g. travel, direction and speed.			
	Debug algorithms and evaluate, thinking critically, whether the buggy meets intended outcome.			
			Making Can 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.	
			Evaluate Can evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.	
			Technical Knowledge Applies their understanding of how to strengthen, stiffen and reinforce more complex structures. Applies their understanding of computing to program, monitor and control their products.	

Summer Term Mayans CIRCUIT GAMES	Recap knowledge of electricity through making simple circuits.	CIRCUIT GAMES (ELECTRONICS) This unit of work will be taught alongside our history unit on the 'Mayans'. The pupils will be confident in their understanding of how complex electrical circuits and components can be used to create functional products. The pupils will critically evaluate the quality of the design, manufacture, functionality, innovation and fitness for purpose, throughout the process and when the final product is in use, refer back to the design criteria. This unit will deepen their knowledge of the key concepts of Electronics . Pupils will be secure in key vocabulary including: complex, electrical, circuits, components, functional, bulbs, buzzers, motors, series, parallel, switches, crocodile clips, wires, lights, complete and incomplete circuits and fault	This unit builds upon prior learning during our Autumn science unit on Electricity . The children will use their knowledge of electricity and apply their learning through designing and making electrical games. The children will then evaluate their products.	Designing Can develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Making Can 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. Evaluating Can evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Technical Knowledge Understands and can use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].
	Discuss and consider appealing products focusing on aesthetics.			
	Design an electrical game, which incorporates Mayan knowledge and scientific circuit understanding.			
	The children will create their electrical game based on an area of Mayan learning, which interests them.			
	Explore suitability and test functionality of their finished electrical game.			
	Evaluate their finished product against design criteria.			