DT Overview with Curriculum Links

Cycle A and B	Coverage	Main NC Links	Why? Design, Make, Evaluate, Technical Knowledge
Lower Key Stage 2: Years 3 and 4 Cycle A			
Autumn 1	Art Focus		
Autumn 2 2022/23	**Mechanical Posters: Levers and Linkages** This unit gives children opportunities to develop their understanding of mechanical systems. Following instructions on how to make different types of lever and linkage mechanisms gives children experience and information to draw on when developing their own ideas. They sketch a design based on their ideas, make a prototype, and then create their 'Lever and Linkage Poster' using the context of recycling. Finally, children will evaluate their finished product	• Investigate and analyse a range of existing products, in the context of investigating existing lever and linkage mechanisms. • Understand and use mechanical systems in their products (for example levers and linkages), in the context of making a mechanism which uses levers and linkages. • Use research and develop design criteria to inform the design of innovative, functional and appealing products that are fit for purpose, aimed at individuals or groups, in the context of developing design criteria and design ideas for a moving poster to promote recycling. • Generate, develop, model and communicate ideas through discussion, annotated sketches, and prototypes, in the context of generating and developing ideas to make a moving poster. • Generate, develop, model and communicate ideas through discussion, annotated sketches, and prototypes, in the context of using the moving poster design to create a prototype. • Select from and use a wider range of tools and equipment to perform practical tasks accurately, in the context of selecting and using the correct tools and equipment make a moving poster. • 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, in the context of selecting materials to produce a high quality finish on a moving poster.	• To investigate mechanical systems. • To make mechanical systems which use levers and linkages. • To develop design criteria to help me design innovative product. • To use prototypes to develop ideas. • To select and use the correct tools and equipment accurately. • To name the parts and functions of a lever and linkage mechanical system. • To evaluate final poster.

		• Understand and use mechanical systems in their products (for example levers and linkages), in the context of knowing the name and function of the parts of a lever and linkage system. • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work, in the context of evaluating their moving poster.	
Spring 1	Art Focus		
Spring 2	**Let's Go Fly a Kite** This unit gives children opportunities to develop their understanding of frame structures and how they can be strengthened and stiffened. Children will discover information about a key event involving a kite that helped shape the world. Children will gain knowledge and understanding about the parts and shapes of kites. This will help them when designing and making their own kites. Finally, children will test and evaluate their kites against design criteria they have created.	• Understand how key events and individuals in design and technology have helped shape the world in the context of how kites have helped shape the world. • Investigate and analyse a range of existing products in the context of investigating the different parts of a kite and their functions. • Investigate and analyse a range of existing products in the context of investigating the different shapes of kites. • 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 in the context of selecting materials and components to make kite shapes out of. • 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 in the context of developing design criteria for a kite. • Generate, develop, model and communicate their ideas through annotated sketches in the context of sketching a design for a kite. • Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately	• To explain how key events and individuals in design and technology have helped shape the world. • To name and explain the function of the different parts of a kite. • To investigate kite shapes. • To select from and use different materials and components. • To develop design criteria. • To develop and communicate a design for their kite. • To accurately measure and cut the shape of the body of the kite and join it to the frame structure. • To make a strong and stiff frame structure to support the kite. • To evaluate their kite.

		in the context of measuring and cutting the body of the kite. • Apply their understanding of how to strengthen, stiffen and reinforce more complex structures in the context of strengthening a frame structure to support the kite. • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work in the context of testing the kite and then using their own design criteria to evaluate it	
Summer 1	Art Focus		
Summer 2	**The Great Bread Bake-off** This unit will teach your class about working with food. Children will gain an insight into the history of bread production, then investigate and evaluate existing bread products. They will create design criteria which will be referred to when designing, making and evaluating their own bread product. Children use a range of skills and techniques using simple kitchen tools and measuring equipment, they will learn how to knead dough correctly and the technique of proving bread.	• Understand how key events and individuals in design and technology have helped shape the world in the context of the history behind Warburtons. • Investigate and analyse a range of existing products in the context of different breads made by Warburtons. • 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 and annotated sketches in the context of creating initial designs for a new bread product. • 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 and annotated sketches in the context of designing a new bread product.	• To find out about important people and events in the past that have shaped the way bread is made and sold today. • To investigate and analyse existing products according to their characteristics. • To develop a design criteria. • To shape dough. • To think of original ideas for a product based on my design criteria. • To develop designs based on my design criteria and clearly communicate my final design. • To select ingredients and kitchen equipment to help me follow a bread making recipe. • To knead and bake.

		• Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques in the context of making a new bread product. Select from and use a wider range of equipment to perform practical tasks accurately. Evaluate their ideas and products against their own Design Criteria.	
Upper Key Stage 2: Years 5 and 6			
Autumn 1 2022-23	**Marbulous Structures** This unit gives children opportunities to develop their understanding of more complex free standing structures and how they can be strengthened and reinforced. Children will gain knowledge and understanding about how to join and shape materials. Children will then apply these skills, using an iterative design process, to create their marble runs. Finally, children will test and evaluate their marble runs against design criteria.	• To investigate and analyse a range of existing products in the context of looking at existing free standing structures. • To apply their understanding of how to strengthen, stiffen and reinforce more complex structures in the context of strengthening, reinforcing and stabilising a cardboard tube. • To select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing), accurately in the context of joining cardboard tubes accurately together. • To select from and use a wider range of tools and equipment to perform practical tasks (for example cutting, shaping, joining and finishing), accurately in the context of developing practical skills to help make bends in marble runs. • To investigate and analyse a range of existing products in the context of investigating commercially bought marble runs. • To select from and use a wider range of materials and components according to their functional properties and aesthetic qualities in the context of selecting and using materials and components to make a marble run.	• To investigate free standing structures. • To apply my understanding of structures. • To use a wider range of tools and equipment to perform practical tasks accurately. • To develop a range of practical skills to create bends. • To investigate free standing structures. • To select from and use materials and components to make a marble run. • To evaluate and improve my design and technology work.

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		• To evaluate their ideas against their own design criteria and consider the views of others to improve their work in the context of evaluating their marble run against the design criteria set in lesson 5.	
Autumn 2	Art Focus		
Spring 1	**Global Food** This unit will give your children the chance to discover the exciting and diverse choice of food available around the world. The first part of the unit provides an opportunity for children to learn where in the world a variety of ingredients flourish. They will then build on their understanding of the eatwell plate, placing different ingredients into the correct food groups. This will develop a deeper understanding that although food can be extremely varied, it still comes under the same basic food groups. Children will then have the chance to learn some basic and advanced cooking techniques, they will apply these skills when making some traditional dishes from different countries	• Understand seasonality, and know where and how a variety of ingredients are grown in the context of looking at where a variety of ingredients come from. • Understand and apply the principles of a healthy and varied diet in the context of understanding how diets are varied around the world but still consist of the same food groups • Understand and apply the principles of a healthy and varied diet in the context of understanding the nutritional benefits of eating rice. • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques in the context of cooking rice. • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques in the context of preparing and cooking Mexican food. • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques in the context of cooking Chinese food. • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques in the context of cooking pretzels.	• To say where in the world ingredients come from. • To explain that diets around the world are based on similar food groups. • To explain why rice is a good staple food. • To cook rice. • To demonstrate a range of food skills and techniques. • demonstrate a range of basic and advanced food skills and cooking techniques • To accurately and mainly independently follow a recipe demonstrating a range of cooking techniques .
Spring 2	Art Focus		

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Summer 1	**Felt Phone Cases** This unit will teach your class about how to write their own design criteria. They will design products with the user in mind thinking about aesthetics and functionality. Annotated designs will be used to communicate ideas as well as step by step plans. Children will learn how to make a paper template and how to sew a running stitch, backstitch, whip stitch and blanket stitch. Finally, when they have made their felt phone case, children will learn how to write a detailed evaluation.	• To 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 in the context of creating a design criteria for a mobile phone case • To generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams in the context of making a paper template for a mobile phone case • To generate, develop and communicate their ideas through discussion, prototypes and pattern pieces in the context of making a paper template for a mobile phone case. • To generate, develop, model and communicate their ideas through prototypes in the context of practising different stitches to inform the final design • To generate, develop, model and communicate their ideas through discussion and annotated sketches in the context of creating a step by step plan to communicate the making process • To select from and use a wider range of materials and components, including textiles, according to their functional properties and aesthetic qualities in the context of selecting decorative techniques and fastenings for felt phone cases • To evaluate their ideas and products against their own design criteria in the context of evaluating a felt phone case against a design criteria created.	• To write a design criteria for a mobile phone case • To generate a range of design ideas and clearly communicate my final design • To make a paper template • To practise using different types of stitches and choose the best one to use on my final felt phone case • To organise my ideas in a step by step plan • To select decorative techniques and fastenings according to their functional properties and aesthetic qualities • To evaluate my product
Summer 2	Art Focus		
Lower Key Stage 2: Years 3 and 4 Cycle B 2023-24			

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Autumn 1	Art Focus		
Autumn 2	**Battery Operated Lights** This unit gives children opportunities to enhance their knowledge and understanding of electrical systems. In this unit children will develop understanding about series and parallel circuits and different types switches. They will then be given the chance to apply their knowledge about electric circuits in a purposeful way by designing and making a battery operated light which will be controlled by a homemade switch. Children will decide upon the design criteria for the light by considering who will use it, where it will be used and what for. Finally, children will complete a detailed evaluation of their final product	• Understand how key events and individuals in design and technology have helped shape the world in the context of looking at technological developments in the way we light our homes • Understand and use electrical systems in their products (for example, series circuits, incorporating switches, and bulbs) in the context of understanding how a series and parallel circuit can be used to light a bulb. • Understand and use electrical systems in their products (for example, incorporating switches) in the context of understanding how switches can be made and used in circuits • 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 in the context of developing design criteria for a light. • Generate, develop, model and communicate their ideas through annotated sketches and cross sectional in the context of sketching a design for a light • 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 in the context of choosing materials and components to make the main structure of the light. • 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 in the context of selecting materials and components which will create a well finished light.	• To explain how key events and individuals in design and technology have helped shape the world • To make and represent different types of circuits • To make and use switches • To develop design criteria and a design • To develop and communicate a design for my light • To select materials and components to make my light. • To create a well finished product • To complete a detailed evaluation of my finished product.

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		• Evaluate their ideas and products against design criteria and consider the views of others to improve their work in the context of evaluating a battery operated light	
Spring 1	Art Focus		
Spring 2	**Edible Garden** This unit provides an opportunity for children to learn where and how a variety of ingredients are grown. Firstly, children will learn how to plant seeds and care for their plants so they yield produce that can be used in their cooking. They will learn how to cook with the ingredients they are growing; following recipes and using different kitchen equipment. The lessons take into account the appropriate safety and hygiene rules.	• Understand seasonality and know where and how a variety of ingredients are grown in the context of where and how herbs are grown. • Understand and apply the principles of a healthy and varied diet in the context of making a balanced meal made from herbs. Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques in the context of cooking a pesto and pasta dish. • Understand seasonality and know where and how a variety of ingredients are grown in the context of where and how strawberries are grown • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques in the context of making a strawberry smoothie. Select from and use a wider range of tools and equipment to perform practical tasks accurately in the context of kitchen tools • Understand seasonality, and know where and how a variety of ingredients are grown in the context of growing tomatoes. • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques in the context of cooking a dish made with tomatoes	• To name some herbs and know how to grow them. • To explain what makes a diet healthy and varied and can cook a healthy balanced meal. • To explain where, when and how strawberries are grown in the United Kingdom. • To use kitchen tools correctly to prepare and make a tasty and nutritious drink. • To explain when tomatoes are in season in the United Kingdom and can say where and how they are grown • To prepare and cook/assemble a healthy and tasty meal using tomatoes as my main ingredient.
Summer 1	Art Focus		
Summer 2	**Juggling Balls**	• To investigate and evaluate a range of existing products in the context of a product analysis of	• To investigate and evaluate juggling balls

	This unit will teach your class how to make juggling balls. They will start by exploring and evaluating different juggling balls. Children are then given a design brief, asking them to design and make a circus themed juggling ball. A hemming and overcast stitch will be introduced during this unit. Children will learn about decoration techniques; getting the chance to use tie-dye and fabric paints. Finally, when they have completed the making of their juggling ball, children will evaluate their product against design criteria.	existing juggling balls. To acquire a broad range of subject knowledge and draw upon disciplines such as mathematics in the context of using graphs to analyse existing juggling balls • To generate, develop, model and communicate ideas through discussion and annotated sketches in the context of designing a circus themed juggling ball. • To select from and use a range of tools and equipment to perform practical tasks accurately in the context of creating a tie-dye background for a juggling ball. • To select from and use a wider range of materials and components according to their functional properties in the context of choosing the filling for their juggling balls. • Select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting and shaping), accurately in the context of cutting, shaping and hemming a juggling ball • To select from and use a wider range of materials and components, including textiles according to their functional properties and aesthetic qualities in the context of using a functional method for decorating a fabric. • To select from and use a wider range of tools and equipment to perform practical tasks (for examples shaping and joining), accurately in the context of shaping and joining a juggling ball. • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work in the context of evaluating juggling balls.	• To follow a design criteria to help me create and communicate my ideas. • To perform tie-dye as a technique for decorating my fabric. • To research and trial different fillings for my juggling ball and decide upon the most functional one. • To cut around a template and use a running stitch to create a hem. • To use a functional technique to carefully decorate my fabric • To join my juggling ball using an appropriate stitch to create my finished shape. • To evaluate my product
Upper Key Stage 2: Years 5 and 6 Cycle B 2023-24			

DT Overview with Curriculum Links

Autumn 1	**Automata Animals** This unit gives children opportunities to further develop their understanding of mechanical systems. Children learn about controlling movement with a cam mechanism as part of an automata animal. They develop their designing skills through using information sources to research ideas about animals which are then incorporated into the design criteria and designs. They make a simple cam mechanism to formulate an understanding of how different shaped cams can be used to produce different movements. Children extend their making skills by developing techniques in cutting, shaping and joining to combine components and by selecting tools and equipment to measure and cut wood and card accurately. Through these activities they gain an understanding of the working characteristics of the materials and components and how they can be combined to create more useful properties. Peer assessment is used to improve designs and evaluate final products	• 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 in the context of researching animals that will be used in their mechanical models • Understand and use mechanical systems in their products (for example cams) in the context of understanding how cams can be used to make a model move • Understand and use mechanical systems in their products (for example cams) in the context of understanding how changing the shape of the cam changes the movement of the follower • Select from and use a wider range materials and components, including construction materials according to their functional properties and aesthetic qualities in the context of selecting materials to make a simple cam mechanism. • Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at individuals or groups in the context of developing design criteria for the Automata Animals • Select from and use a wider range of tools and equipment to perform practical tasks (for example cutting, shaping, joining and finishing), accurately in the context of using tools and equipment to perform the job of cutting, joining and finishing wood to make a frame • Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work in the context of evaluating the product design	• To research ideas about different animals to inform my design • To explain how simple cam mechanisms work. • To research ideas about different animals to inform my design. • To select materials according to their functional properties. • To use research and develop design criteria to inform my design • To build a framework, accurately using a wider range of tools and equipment • To evaluate my product. • To understand and use a mechanical system

DT Overview with Curriculum Links

		• Understand and use mechanical systems in their products in the context of using a cam mechanism to make a model of an animal move	
Autumn 2	Art Focus		
Spring 1	**Super Seasonal Cooking** This unit of work will teach your class about the importance of buying seasonal food. The first part of the unit provides an opportunity for children to learn where, when and how a variety of ingredients are grown, reared, caught and processed. Children will then have the chance to sample some spring seasonal food before designing their own balanced seasonal meal. They will learn how to cook with the seasonal ingredients following their own recipes and using a wide range of preparation and cooking techniques. Finally, children will evaluate their product against their design criteria. Children will learn appropriate hygiene rules for handling meat and fish and safe preparation skills.	• Understand seasonality in the context of when fruit and vegetables are in season in Britain • Understand seasonality and know where and how a variety of ingredients are reared caught and processed in the context of where food is reared, caught and processed in the United Kingdom • To understand seasonality in the context of tasting food that is in season • Understand and apply the principles of a healthy and varied diet in the context of the importance of protein in the diet • Select from a wider range of ingredients, according to their functional properties and aesthetic qualities in the context of selecting ingredients for a seasonal meal. Consider the views of others to improve their work in the context of improving their design for a seasonal meal • Generate, develop, model and communicate their ideas through discussion and annotated sketches in the context of designing a healthy seasonal meal. • Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques in the context of preparing and cooking a healthy seasonal meal. Evaluate their products against their own design criteria in the context of evaluating their seasonal meal	• To explain what seasonality means and know when different fruit and vegetables are in season in the United Kingdom • To explain where, when and how a variety of ingredients are reared, caught and processed. • To taste and evaluate seasonal foods and recognise that sometimes we need to try a new food a few times to find out if we like it. • To explain the importance of protein as a proportion of a healthy varied diet • To work as a group to generate, evaluate and refine recipe ideas. • To take feedback and improve my designs • To explain how to correctly store and handle meat and fish. • To prepare, cook and evaluate a healthy seasonal meal
Spring 2	Art Focus		
Summer 1	**Programming Adventures** Children will apply their understanding of computing to program a floor robot. They	• Apply their understanding of computing to program, monitor and control their products by	• To program and control floor robots

	will explore a range of adventure maps and use these to create original designs. As a group, they will research how floor robots move along different types of materials and use this knowledge to create obstacles squares. Children will use appropriate joining methods to make a scale adventure map. They will test and evaluate the effectiveness of another group's obstacle squares. (While this unit focuses on creating a treasure map, this can be adapted to fit with literacy, numeracy, history or geography units as appropriate).	understanding what floor robots are, how they are programmed and controlled • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams prototypes, pattern pieces and computer-aided by designing an adventure map • 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 by exploring how different materials affect the movement and control of floor robots. • 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 by planning an adventure map. • 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 by creating an adventure map using materials selected for their properties. • Apply their understanding of computing to program, monitor and control their products by programming and monitoring floor robots on finalised adventure map	• To generate and develop ideas through discussion • To research a range of materials • To plan an adventure map. • To use appropriate materials based on research • To monitor a floor robot. • To evaluate a finished product.
Summer 2	Art Focus		