Design and Technology Medium Term Plan

	Autumn	Spring	Summer
Year 1	**Structures:** **Constructing a windmill** - 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. - 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. - Explore and evaluate a range of existing products. - Evaluate their ideas and products against design criteria. - Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products - Build structures, exploring how they can be made stronger, stiffer and more stable.	**Textiles:** **Puppets** - 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. - 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. - Evaluate their ideas and products against design criteria.	**Cooking + Nutrition:** **Smoothies** - 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. - 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 characteristic - Evaluate their ideas and products against design criteria - Understand where food comes from.
Year 2	**Mechanisms: Fairground Wheel** - 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. - Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing].	**Mechanisms:** **Making a moving monster** - 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.	**Structures:** **Baby Bear's Chair** - 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.

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Year 3	**Digital World:** **Wearable Technology** - 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. - Investigate and analyse a range of existing products. - Evaluate their ideas and products against their owndesign 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. - Apply their understanding of computing to program, monitor and control their products.	**Cooking + Nutrition:** **Eating Seasonally** - Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer- aided design. - 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 characteristics. - Understand and apply principles of a healthy and varied diet. - Prepare and cook 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.	**Structures:** **Constructing a Castle** - 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. - 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 characteristics. - 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. - Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.

Year 4	**Electrical Systems: Torches** - 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 computeraided design. - 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 characteristics. 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. - Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors].	- **Structures: Pavillions** - 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 computeraided design. - 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 characteristics. -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. - Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	**Mechanical Systems: Making a Slingshot Car** - 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 computeraided design. - 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 characteristics. - 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 - Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].
Year 5	**Mechanical systems: Pop up books** - Use research and develop design criteria to inform the design of innovative, functional, appealing products that	**Electrical systems: Doodlers** - Use research and develop design criteria to inform the design of innovative, functional, appealing products that	**Cooking and nutrition: Developing a recipe** - 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. - 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. - 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 and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages].	are fit for purpose, aimed at particular individuals or groups. - Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. - 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. - Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. - Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. monitor and control their products. - Understand and apply principles of a healthy and varied diet. - Prepare and cook 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.	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. - 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. - 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. - Apply their understanding of computing to program,
Year 6	**Digital World: Navigating the world** - 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 - Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.	**Structures: Playgrounds** - 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. - Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.	**Textiles: Waistcoats** - 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. - Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.

	- Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. - Apply their understanding of computing to program, monitor and control their products.	- 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. - 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. - Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.	- 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. - 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.