Design and Technology: Curriculum Overview

EYFS	By the end of the EYFS stage. Pupils will be able to: →		Characteristics of effective learning
	Early Years outcomes: Prime Areas	Early Years outcomes: Specific Areas	
Food	**Communication and language** Learn new vocabulary Use new vocabulary throughout the day **ELG: Speaking** Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. **Personal, Social and emotional development** Know and talk about the different factors that support their overall health and wellbeing: healthy eating. **ELG: Managing Self** Manage their own basic hygiene and personal needs, including understanding the importance of healthy food choices. **Physical development** Develop small motor skills so that they can use a range of tools competently, safely and confidently. **ELG** Use a range of small tools, including scissors, paint, brushes and cutlery.	**Understanding the world** Explore the natural world around them. **ELG: The natural world** Explore the natural world around them, making observations and drawings of animals and plants. **Expressive Arts and Design** Explore, use and refine a variety of artistic effects to express ideas and feelings. **ELG: Creating with materials** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	• Playing and exploring • Active learning

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Structures	**Physical development** Develop small motor skills so that they can use a range of tools competently, safely and confidently. **ELG** Use a range of small tools, including scissors, paint, brushes and cutlery.	**Expressive Arts and Design** Explore, use and refine a variety of artistic effects to express ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills. **ELG: Creating with materials** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. **ELG: Creating with materials** Share their creations, explaining the process they have used.	• Playing and exploring • Active learning • Creating and thinking critically
Textiles	**Physical development** Develop small motor skills so that they can use a range of tools competently, safely and confidently. **ELG** Use a range of small tools, including scissors, paint, brushes and cutlery.	**Expressive Arts and Design** Explore, use and refine a variety of artistic effects to express ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills. **ELG: Creating with materials** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. **ELG: Creating with materials** Share their creations, explaining the process they have used.	• Playing and exploring • Active learning • Creating and thinking critically.

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Structures	**Communication and language** Articulate their ideas and thoughts in well-formed sentences. Connect one idea or action to another using a range of connectives. Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. Learn new vocabulary Use new vocabulary throughout the day **ELG: Speaking** Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. **ELG: Speaking** Offer explanations for why things might happen.	**Understanding the world** Explore the natural world around them. **ELG: The natural world** Explore the natural world around them, making observations and drawings of animals and plants. **Expressive Arts and Design** Explore, use and refine a variety of artistic effects to express ideas and feelings. **ELG: Creating with materials** Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. **ELG: Creating with materials** Share their creations, explaining the process they have used.	• Playing and exploring • Active learning • Creating and thinking critically.

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KS1	: National Curriculum Pupils should be taught:		By the end of KS1 pupils will be able to: →
Structures	**Design** 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. **Make** 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** Evaluate their ideas and products against design criteria. Explore and evaluate a range of existing products. **Technical Knowledge** Build structures exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms, for example, sliders, levers, wheels and axles, in their products.		I can build structures such as windmills and chairs. I can explore how they can be made stronger, stiffer and more stable. I can recognise areas of weakness through trial and error.

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Mechanisms	**Design** 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. **Make** 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** Evaluate their ideas and products against design criteria. Explore and evaluate a range of existing products. **Technical Knowledge** Build structures exploring how they can be made stronger, stiffer and more stable. Explore and use mechanisms, for example, sliders, levers, wheels and axles, in their products.	I can introduce and explore simple mechanisms, such as sliders, wheels and axles in my designs. I can recognise where mechanisms such as these exist in toys and other familiar products.
Textiles	**Design** 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. **Make** 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** Evaluate their ideas and products against design criteria. Explore and evaluate a range of existing products.	I can explore different methods of joining fabrics. I can experiment to determine the pros and cons of each technique.

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Food	**Design** 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. **Make** 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. Use basic principles of a healthy and varied diet to prepare dishes. **Evaluate** Evaluate their ideas and products against design criteria. Explore and evaluate a range of existing products. Understand where food comes from.	I can learn about the basic rules of a healthy and varied diet. I can use this knowledge to create dishes. I understand where food comes from, for example plants and animals.
LKS2/ UKS2	National curriculum Pupils should be taught to:	By the end of UKS2 pupils will be able to: →
structures	**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, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. **Make**	I can continue to develop KS1 exploration skills, through more complex builds such as pavilion and bridge designs. I can understand material selection and learn

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	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. **Evaluate** 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. **Technical Knowledge** Apply their understanding of how to strengthen, stiffen, and reinforce more complex structures.	methods to reinforce structures
Mechanical systems	**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, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. **Make** 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. **Evaluate** 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. **Technical Knowledge**	I can extend my understanding of individual mechanisms, to form part of a functional system, for example: Automatas, that use a combination of cams, followers, axles/shaft, cranks and toppers.

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	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.	
Textiles	**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, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. **Make** 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. **Evaluate** 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. **Technical Knowledge** Apply their understanding of how to strengthen, stiffen, and reinforce more complex structures	I can understand that fabric can be layered for effect, recognising the appearance and technique for different stitch and fastening types, including their: ● Strength. ● Appropriate use. ● Design
Electrical systems	**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, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. **Make** Select from and use a wider range of tools and equipment to perform practical tasks, for example, cutting, shaping, joining and finishing, accurately.	I can create functional electrical products that use series circuits, incorporating different components such as bulbs, LEDs, switches, buzzers and motors.

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	Select from and use a wide range of materials and components, including, construction materials, textiles and ingredients, according to their characteristics. **Evaluate** Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. **Technical Knowledge** Apply their understanding of how to strengthen, stiffen, and reinforce more complex structures	I can consider how the materials used in these products can: ● Protect the circuitry. ● Reflect light. ● Conduct electricity. ● Insulate.
Digital world	**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, develop, model and communicate their ideas through discussion, annotated sketches, cross sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design. **Make** 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. **Evaluate** 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. **Technical Knowledge** Apply their understanding of how to strengthen, stiffen, and reinforce more complex structures Apply their understanding of computing to program, monitor and control their products.	I can learn how to develop an electronic product with processing capabilities. I can apply Computing principles to program functions within a product including to control and monitor it. I can understand how the history and evolution of product design lead to the on-going Digital revolution and the impact it is having in the world today.

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Food	**Design** Understand and apply 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. **Make** Understand and apply 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. **Evaluate** Understand and apply 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.	I can understand and apply the principles of a healthy and varied diet to prepare and cook a variety of dishes using a range of cooking techniques and methods. I can understand what is meant by seasonal foods. I know where and how ingredients are sourced.