DESIGN TECHNOLOGY CURRICULUM MAP

By the time the children leave Sheen Mount, they will have developed the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world. They will have built a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users. They will have developed the confidence to critique, evaluate and test their ideas, products and work of others. They will have an understanding of how to apply the principles of nutrition and know how to prepare food and cook simple dishes. We want all children to have enjoyed this subject and feel inspired to engage in and observe the world around them in a creative and critical way. We hope it will influence the choices they make in secondary school for further study and ultimately the career path they choose.

Purpose of study

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation

Aims

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook.

Primary National Curriculum, Key Stages 1 and 2 Framework Document
September 201

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Reception	
Expected	ELG: Speaking - Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary; - Offer explanations for why things might happen, making use of recently introduced vocabulary from stories, non-fiction, rhymes and poems when appropriate;
Expected	ELG: Managing Self Children at the expected level of development will: - Be confident to try new activities and show independence, resilience and perseverance in the face of challenge;
Expected	ELG: Creating with Materials - Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function; - Share their creations, explaining the process they have used;
Expected	ELG: Fine Motor Skills - Use a range of small tools, including scissors, paint brushes and cutlery; - Begin to show accuracy and care when drawing.
Expected	**ELG: People, Culture and Communities** - Describe their immediate environment using knowledge from observation, discussion, stories, non-fiction texts and maps; - Explain some similarities and differences between life in this country and life in other countries, drawing on knowledge from stories, non-fiction texts and – when appropriate – maps.
Expected	ELG: The Natural World Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.
Expected	**ELG: Building Relationships** Children at the expected level of development will: - Work and play cooperatively and take turns with others; - Show sensitivity to their own and to others' needs.
Expected	**ELG: Self-Regulation** - Set and work towards simple goals, being able to wait for what they want and control their immediate impulses when appropriate; - Give focused attention to what the teacher says, responding appropriately even when engaged in activity, and show an ability to follow instructions involving several ideas or actions.

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Expected	ELG: Comprehension Use and understand recently introduced vocabulary during discussions about stories, non-fiction, rhymes and poems and during role-play.
Educational Programmes **Mathematics** In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures.	

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	Autumn Term	Spring Term	Summer Term
Reception	**Food Technology:** The children learn how to make simple sandwiches and pumpkin soup **Structures:** The children learn how to construct a house for a rabbit, squirrel or a dormouse The children learn how to make a rocket	**Food Technology:** With cultures and traditions in mind, the children learn how to make Egyptian flatbread	**Electrical Systems:** Electrical circuits – The children experiment with buzzers and motors and create a full circuit with a bulb. **Structures:** The children make a chair for a bear from Goldilocks. They construct a spider's web using Octons and elastic bands.
Year 1	**Mechanisms: Levers and Sliders 1st half of term** Children investigate, design, make and evaluate a moving picture using sliders and levers, linked to the book: Stick Man	**Food Technology: Preparing fruit 1st half of term** Children investigate, design, make and evaluate a fruit salad, focusing on where world fruit comes from, linking to story of Where the Wild Things Are.	**Structures: Free standing structures 2nd half of term** Children investigate, design, make and evaluate a bridge liked to their history topic: The Battle of Hastings
Year 2	**Art only in this term**	**Mechanisms: Wheels and Structures 1st half of term** Children learn about the impact of transport on the environment linked to their geography London topic. Children investigate, design, make and evaluate their own moving vehicle using wheels and axels. **Food Technology: Preparing a healthy salad/snack 2nd half of term** Children investigate, design, make and evaluate a salad/snack focusing on a healthy and varied diet, linked to their science topic of plants.	**Textiles: Templates and Joining Techniques 1st half of term** Children investigate, design, make and evaluate a Victorian puppet using simple joining and sewing skills.
Year 3	**Textiles: 2D Shape to 3D Product 2nd half of term** Children investigate, design, make and evaluate a reusable shopping bag using 2D shapes to create a pattern, and sewing stitches to join the material together.	**Art only in this term**	**Structures: Shell Structures 1st half of term** Children investigate, design, make and evaluate packages out of card, by designing 3D nets to make into a shell structure with the purpose of presenting, containing and protecting a sandwich. **Food Technology: Healthy and Varied Diet 2nd half of term** Linked to their prior learning of a balanced diet, children evaluate, design, make and evaluate a healthy sandwich.
Year 4	**Electrical Systems: Simple Circuits and Switches 2nd half of term** Children investigate, design, make and evaluate opening wardrobes that light up linked to the core text: The Lion, the Witch and the Wardrobe.	**Food Technology: Healthy and Varied Diet 1st half of term** Children investigate, design, make and evaluate their own sushi rolls linked to their geography study of Japan.	**Mechanical Systems: Levers and Linkages** Children investigate, design, make and evaluate children's story books with levers and linkages, linked to their core text: Leon and the Place Between.
Year 5	**Food Technology: Celebrating Culture and Seasonality 2nd half of term** Children will evaluate commercially made breads (leavened, unleavened, white, wholemeal). They design their own recipe, choosing additional ingredients. They compare the commercial process in comparison to homemade bread.	**Textiles: Combining Different Fabric Shapes 2nd half of term** Children look at the timeline of puppet-making history, investigate existing puppets then design, make and evaluate sock puppets linked to their core text: Macbeth	**Mechanical Systems: Pulleys or Gears** Children investigate, design, make and evaluate a pulley system.

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	They make their own bread, evaluate and revisit as to how they would improve it.		
Year 6		**Food Technology: Celebrating Culture and Seasonality** The children investigate existing dishes then design, make and evaluate their own tomato sauce and fresh pasta.	**Electrical Systems: More Complex Switches and Circuits** Children investigate, design, make and evaluate electrical switches and circuits to alarm their classroom lockers. **Structures: Frame Structures** Linked the core text "Way Home" – the children investigate, design, make and evaluate a shelter for a homeless boy.

DESIGN TECHNOLOGY CURRICULUM MAP

Subject content

Key stage 1

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

When designing and making, pupils should be taught to:

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

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

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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Key stage 2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

When designing and making, pupils should be taught to:

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 wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

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
- 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.

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Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

Key stage 1

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

Key stage 2

- 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.