



# Design and Technology Subject Statement

*This document supports the school vision  
Caring For Others And Courageously Striving  
For Excellence*

Our design and technology curriculum aims to promote pupils' understanding of, and commitment to, our school values; **compassion, resilience, trust** and support pupils' spiritual, moral, social and cultural development; including their understanding of right and wrong, of equal opportunities for all and of the school learner behaviours – to be **aspirational, community-minded, curious, determined and independent**.

We aim to provide lessons that provide opportunities for pupils to develop problem-solving skills, choose ways to do things and persist when challenges occur as they develop an understanding of technology and its impact in an ever-changing world, alongside practical life skills.

Design and technology draws upon a range of skills, including mathematics, art, computing and science, and promotes curiosity, resilience and imagination.

## EYFS Year R

Design and technology activities contribute to all three of the key areas that form a foundation for igniting children's curiosity and enthusiasm for learning, forming relationships and thriving:

- communication and language
- physical development
- personal, social and emotional development.

Design and technology activities are key to teaching and learning in the *Creating with Materials* strand of *Expressive Arts and Design*.

## Key Stage 1 and Key Stage 2

Our curriculum for design and technology is carefully mapped through the school, with some projects taught discretely and others with cross-curricular links. Pupils follow a process of designing, making and evaluating their work. They begin to select resources, test ideas and choose ways to solve problems. They evaluate their work and the work of others against design criteria, considering the effectiveness of the methods and resources used, and responding to constructive feedback from others.

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.

In **Key Stage 1**, pupils are taught to:

- 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
- 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
- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms in their products.
- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from

In **Key Stage 2**, pupils are taught 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
- 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 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 how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products
- understand and use electrical systems in their products
- apply their understanding of computing to program, monitor and control their products.
- 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.

**Teaching and learning:**

- Long and medium term planning cycles are on a two-year cycle so that pupils have complete coverage of the NC Programme of Study.

**Assessment and progression**

- Information about prior attainment recorded on Target Tracker supports lesson planning including differentiation
- Formative assessment (Assessment for Learning) by the teachers (and teaching assistants) is part of every lesson so that misconceptions can be addressed as they arise

## Design and Technology Programme of Study

Design	
Year R	Speak confidently in a familiar group. Talk about their ideas. Choose resources for chosen activities. Use knowledge about media and materials in original ways, thinking about uses and purposes .
Year 1	Create simple designs for a product. Use pictures and words to describe plans.
Year 2	Design purposeful, functional, appealing products for herself/ himself and other users based on design criteria. Generate, develop, model and communicate ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology. Choose appropriate tools, equipment, techniques and materials from a wide range
Year 3	Use knowledge of existing products to design own functional product. Create designs using annotated sketches, cross-sectional diagrams and simple computer programmes. Strengthen frames using diagonal struts. Understand how mechanical systems such as levers and linkages or pneumatic systems create movement.
Year 4	Use knowledge of existing products to design a functional and appealing product for a particular purpose and audience. Create designs using exploded diagrams. Use own knowledge of techniques and the functional and aesthetic qualities of a wide range of materials to plan how to use them.

Year 5	Use own research into existing products and market research to inform the design of own innovative product. Create prototypes to show ideas. Produce step by step plans to guide making, demonstrating applying knowledge of different materials, tools and techniques.
Year 6	Use research into famous designers and inventors to inform the design of own innovative products. Generate, develop, model and communicate ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.
<b>Make</b>	
Year R	Show good control and co- ordination in large and small movements. Handle equipment and tools effectively. Select and use technology for particular purposes. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.
Year 1	Select from and use a range of tools and equipment to perform practical tasks e.g. cutting, shaping, joining and finishing. Use a range of simple tools to cut, join and combine materials and components safely. Build structures, exploring how they can be made stronger, stiffer and more stable. Use wheels and axles in a product.
Year 2	Safely measure, mark out, cut and shape materials and components using a range of tools. Investigate different techniques for stiffening a variety of materials and explore different methods of enabling structures to remain stable. Explore and use mechanisms e.g. levers, sliders, wheels and axles, in making products.
Year 3	Safely measure, mark out, cut, assemble and join with some accuracy. Make suitable choices from a wider range of tools and unfamiliar materials and plan out the main stages of using them.
Year 4	Use techniques which require more accuracy to cut, shape, join and finish work e.g. cutting internal shapes, slots in frameworks. Apply techniques learnt to strengthen structures and explore own ideas. Understand and use electrical systems in products.
Year 5	Make careful and precise measurements so that joins, holes and openings are in exactly the right place. Build more complex 3D structures and apply knowledge of strengthening techniques to make them stronger or more stable. Understand how to use more complex mechanical and electrical systems.
Year 6	Use technical knowledge accurate skills to problem solve during the making process. Use knowledge of famous designs to further explain the effectiveness of existing products and products s/he has made. Use a wide range of methods to strengthen, stiffen and reinforce complex structures and can use them accurately and appropriately. Apply own understanding of computing to program, monitor and control a product.
<b>Evaluate</b>	
Year R	Represent their own ideas, thoughts and feelings.
Year 1	Ask simple questions about existing products and those that s/he has made.
Year 2	Evaluate and assess existing products and those that s/he has made using a design criteria.
Year 3	Investigate and analyse existing products and those s/he has made, considering a wide range of factors.
Year 4	Consider how existing products and own finished products might be improved and how well they meet the needs of the intended user.
Year 5	Make detailed evaluations about existing products and those s/he has made considering the views of others to improve own work.
Year 6	Apply knowledge of materials and techniques to refine and rework product s/he has made to improve its functional properties and aesthetic qualities.
<b>Knowledge and understanding</b>	
Year 3	Understand how key events and individuals in design and technology have helped shape the world.
Year 4	
Year 5	
Year 6	
<b>Cooking and Nutrition</b>	

Year R	Begin to develop a food vocabulary using taste, texture and feel. Explore familiar food products e.g. fruit and vegetables. Stir, spread, knead, and shape a range of food and ingredients. Begin to work safely and hygienically. Start to think about the need for a variety of foods in a diet.
Year 1	Talk about what s/he eats at home and begin to discuss what healthy foods are. Say where some food comes from and give examples of food that is grown. Use simple tools with help to prepare food safely.
Year 2	Understand the need for a variety of food in a diet. Understand that all food has to be farmed, grown or caught. Use a wider range of cookery techniques to prepare food safely.
Year 3	Talk about the different food groups and name food from each group. Understand that food has to be grown, farmed or caught in Europe and the wider world. Use a wider variety of ingredients and techniques to prepare and combine ingredients safely.
Year 4	Understand what makes a healthy and balanced diet, and that different foods and drinks provide different substances the body needs to be healthy and active. Understand seasonality and the advantages of eating seasonal and locally produced food. Read and follow recipes which involve several processes, skills and techniques.
Year 5	Understand the main food groups and the different nutrients that are important for health. Understand how a variety of ingredients are grown, reared, caught and processed to make them safe and good to eat. Select appropriate ingredients and use a range of techniques to combine them.
Year 6	Confidently plan a series of healthy meals based on the principles of a healthy and varied diet. Use information on food labels to inform choices. Research, plan and prepare and cook a savoury dish, applying knowledge of ingredients and technical skills.