



Reviewed July 2024

St Bertoline's Church of England

Primary School Design and Technology Curriculum Overview

Statement of Intent, Implementation and Impact

Curriculum Intent

At St Bertoline's CofE Primary School we aim to inspire pupils to be innovative and creative thinkers who have an appreciation for the product design cycle through ideation, creation and evaluation. Our children are taught the subject of Design and Technology through DT projects once a term. These projects cover the following strands: structures, mechanisms/mechanical systems, textiles, cooking and nutrition, electrical systems (KS2) and Digital World (KS2) and follow the key steps in Design Technology: investigate and evaluate, focused practical tasks, design, make and evaluate. These projects (where possible) are closely linked to our book based curriculum and draw upon subject knowledge and skills within Mathematics, Science, History, Computing and Art. Please see our long term plan below:

Design and Technology is an inspiring, rigorous and practical subject, requiring creativity, resourcefulness, and imagination. Pupils design and make products that solve real and relevant problems within a variety of contexts. Children learn to take risks, be reflective, innovative, enterprising and resilient. Through the evaluation of past and present technology they can reflect upon the impact of Design Technology on everyday life and the wider world.

National Curriculum 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.

Curriculum Implementation

End points are planned for each year group across the strands of mechanisms, structures, textiles and food. These end points are reached by the teaching of carefully planned small steps, allowing the children to reflect on the importance of each step in the learning process.

Each year group covers 2 strands of either mechanisms, structures or textiles. The end points are sequenced in 2-year blocks (Yr1/2, Yr3/4, Yr5/6). Food technology is implemented across the school, through one food project a term, with children developing an understanding of where food comes from, the importance of a varied and healthy diet and how to prepare this.

The year group coverage and progression of skills are shown in the documents above.

The teaching of these small steps is supported by our new scheme of work Kapow alongside The Design and Technology Association's 'Projects On A Page' documents.

Kapow and 'Projects on a Page' ensures that D&T makes a high-quality contribution to a broad and balanced primary curriculum, helping to raise standards in English and mathematics.

Research suggests D&T is one of primary-aged children's favourite subjects. Kapow and 'Projects on a Page' maximises their enjoyment by providing scope for teachers to meet children's needs and interests through creative and motivating projects within a range of contexts.

Early Years Foundation Stage

During the EYFS pupils explore and use a variety of media and materials through a combination of child initiated and adult directed activities. They have the opportunities to learn to:

- Use different media and materials to express their own ideas
- Use what they have learnt about media and materials in original ways, thinking about form, function and purpose
- Make plans and construct with a purpose in mind using a variety of resources
- Develop skills to use simple tools and techniques appropriately, effectively and safely
- Select appropriate resources for a product and adapt their work where necessary
- Cook and prepare food adhering to good health and hygiene routines

National Curriculum requirements at Key Stage 1

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in the process of designing and making.

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.

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Pupils should be taught to:

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

National Curriculum requirements at Key Stage 2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in the 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, such as 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 as gears, pulleys, cams, levers and linkages)
- understand and use electrical systems in their products, (for example series circuits incorporating switches, bulbs, buzzers and motors)
- to apply their understanding of computing to programme, monitor and control their products.

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:

- 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
- to understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

Curriculum Impact

Design technology is an inspiring, rigorous and practical subject, requiring creativity, resourcefulness, and imagination. These skills are transferable to other subjects and into future life. Children will learn to take risks, be reflective, innovative, enterprising and resilient, all skills which they will take with them throughout their school and adult life.

Assessment of children's learning in Design Technology is an ongoing monitoring of children's understanding, knowledge and skills by the class teacher, throughout lessons. This assessment is then used to inform differentiation, support and challenge required by the children for the duration of each project. Design Technology is also monitored by the subject leader throughout the year in the form of book monitoring, looking at outcomes and pupil interviews to discuss their learning and understanding and establish the impact of the teaching taking place.