BERROW PRIMARY
Church Academy

Lighting up a love of learning

# Design and Technology

## What is the intent?

At Berrow, our Design and Technology scheme of learning aims to inspire pupils to be innovative and creative thinkers who have an appreciation for the product design cycle through ideation, creation, and evaluation. We want pupils to develop the confidence to take risks, through drafting design concepts, modelling, and testing and to be reflective learners who evaluate their work and the work of others.

Through our curriculum, we aim to build an awareness of the impact of Design and Technology on our lives and encourage pupils to become resourceful, enterprising citizens who will have the skills to contribute to future design advancements.

Our pupils learn 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.

## Implementation

Our DT curriculum outlines the three main stages of the design process: design, make and evaluate. Each stage of the design process is underpinned by technical knowledge which encompasses the contextual, historical, and technical understanding required for each strand. Cooking and nutrition has a separate section, with a focus on specific principles, skills and techniques in food, including where food comes from, diet and seasonality. The National Curriculum organises the Design and Technology attainment targets under four subheadings: Design, Make, Evaluate, and Technical knowledge.

We have taken these subheadings to identify each strand:

<table>
<tr><td colspan="2">Design<br>Designing purposeful, functional and appealing products though the generation of plans and communicating their ideas in a variety of ways.</td></tr>
<tr><td>Make<br>Selecting and using a wide range of tools and equipment alongside a range of materials and components.</td><td>Evaluate<br>Explore and evaluate a range of existing products as well as their own ideas and products.</td></tr>
<tr><td colspan="2">Technical Knowledge<br>Build complex structures, understand and use mechanical systems in their products as well as using electrical systems within 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.</td></tr>
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Our Progression of skills shows the skills and knowledge that are taught within each year group and how these skills develop to ensure that attainment targets are securely met by the end of each key stage.

## End Points

**Key Stage 1:**

**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

**Cooking and nutrition:**

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

**Key Stage 2:**

**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

**Cooking and nutrition:**

- 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

## The impact of excellent teaching will mean as a designer leaving Berrow, every child will:

- be inspired by the work of expert designers, engineers and technicians – both past and current – and have an understanding of the exciting range of careers available in this ever developing world
- Understand the functional and aesthetic properties of a range of materials and resources
- Understand the principles of design and the processes involved in the creation of prototypes and quality finished products
- Be able to use a variety of tools and materials with accuracy and expertise
- Be able to plan, and create exciting meals using a range of healthy ingredients
- Have had opportunities to present and share their ideas, designs and products to others and showcase their work.
- Understand how to use and combine tools to carry out different processes for shaping, decorating, and manufacturing products
- Understand and apply the principles of healthy eating, diets, and recipes, including key processes, food groups and cooking equipment
- Have an appreciation for key individuals, inventions, and events in history and of today that impact our world
- Recognise where our decisions can impact the wider world in terms of community, social and environmental issues
- Be inspired to take risks in their designs and understand the value of evaluating, reworking and improving initial designs and to elf-evaluate and reflect on learning at different stages by learning to identify areas to improve