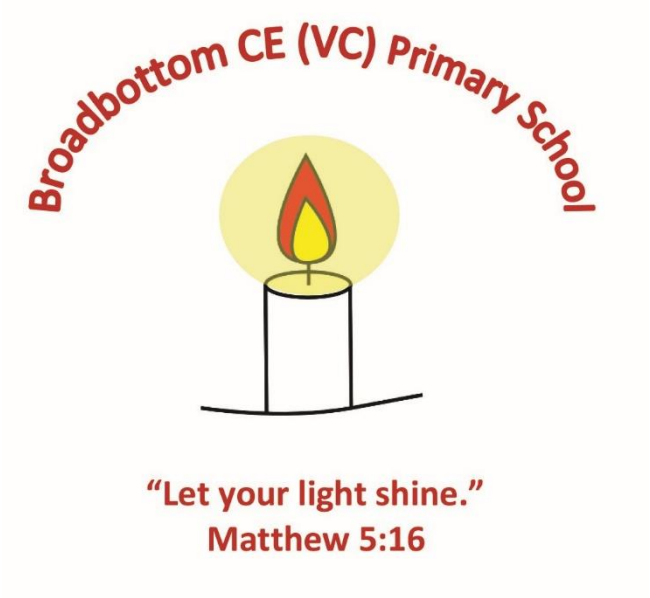
Broadbottom C of E Primary School



Design Technology

Intent

At Broadbottom we encourage our children to be reflective and resilient learners. Design Technology helps us to develop these attributes, as we work through the design, make and evaluate process. Design and Technology is delivered through Kapow Curriculum, which provides a clear progression of learning throughout KS1 and KS2 and relevant cross-curricular opportunities.

The intent of Design Technology (DT) at Broadbottom is to introduce pupils to the fundamental concepts of design, problem-solving, and practical making. It aims to foster creativity, critical thinking, and hands-on skills in a way that is engaging and accessible for young learners.

Ultimately, the intent of Design Technology at primary school is to lay a foundation for lifelong learning in technology and design while encouraging a growth mindset, curiosity, and an understanding of how design impacts the world around them.

Implementation

Kapow Curriculum

Design Technology is organised around six key areas (Structures; Mechanisms; Textiles; Electrical systems; Digital world; and Cooking and nutrition) and four strands (Design, Make, Evaluate, and Technical Knowledge).

National curriculum requirements

KS1

When designing and making, pupils should be taught to:

Design

- design purposeful, functional appealing products for themselves and others 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

KS2

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 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 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 help 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 predominately 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

Impact

The impact of Broadbottom Church of England Primary School's Design Technology (DT) curriculum is to teach practical skills and also nurture creativity, problem-solving abilities, and teamwork. By encouraging hands-on learning, critical thinking, and teamwork, it helps shape pupils into confident, innovative individuals with a deeper understanding of the world around them. It equips them with skills that will serve them not only in school but also in their future careers and everyday lives.

The key impacts include:

1. Enhanced Creativity and Innovation

- **Fostering Creativity**: DT encourages children to think outside the box, experiment with new ideas, and find creative solutions to problems. This creative mindset often transfers to other subjects and areas of life.
- **Encouraging Innovation**: As pupils design and create, they learn the value of innovation. They understand that design is an evolving process where improvements are continually made.

2. Development of Practical and Technical Skills

- **Hands-On Learning**: Through making and constructing, pupils develop technical skills such as cutting, measuring, assembling, and using tools safely. These practical skills are valuable for their everyday life and future learning.
- **Understanding Materials and Processes**: Primary DT introduces children to different materials (e.g., paper, fabric, wood, plastic) and their properties. This knowledge helps them make informed choices in their designs and prepares them for more advanced work in later education.

3. Improved Problem-Solving and Critical Thinking

- **Design Thinking**: DT emphasizes problem-solving skills. Pupils are tasked with identifying a problem, brainstorming potential solutions, prototyping, and refining their ideas. This process encourages logical thinking and resilience.
- **Evaluating and Reflecting**: Pupils assess their designs, identify challenges, and adapt their solutions. This reflective practice improves their ability to evaluate not only their work but also the work of others.

4. Collaboration and Communication Skills

- **Teamwork**: Many DT projects involve group work, where pupils collaborate to design and create. This fosters teamwork, communication, and the ability to share ideas and resources effectively.
- **Presentation Skills**: Presenting their designs and explaining their choices helps pupils develop strong communication skills, both in verbal and visual forms.

5. Increased Confidence and Self-Esteem

- **Achieving Success**: Completing a project gives pupils a sense of accomplishment, boosting their confidence and self-esteem. The process of planning, creating, and seeing a tangible outcome reinforces their belief in their abilities.
- **Encouraging Independence**: DT tasks often require pupils to make decisions independently, which helps them develop a sense of autonomy and responsibility.

6. Linking Learning to the Real World

- **Connecting with Everyday Life**: DT bridges the gap between abstract learning and real-world applications. Pupils see how the skills they are learning can be applied to design solutions, and how technology and innovation shape the world around them.
- **Career Insights**: Even at a young age, exposure to the design process can spark interest in future careers in engineering, architecture, product design, and technology.

7. Support for Cross-Curricular Learning

- **Integration with Other Subjects**: DT allows for the integration of other subjects, such as mathematics (measuring, geometry), science (material properties, forces), and art (aesthetics and design). This cross-curricular learning enriches pupils' overall educational experience.
- **Real-World Contexts**: Pupils apply knowledge from different subjects (e.g., using math for measurements or understanding scientific principles of materials) to solve practical problems in their DT projects.

8. Cultural Awareness and Ethical Thinking

- **Sustainability**: The DT curriculum often encourages pupils to consider the environmental impact of their designs. Through projects, they learn about sustainability, recycling, and eco-friendly materials, fostering a sense of responsibility for the planet.
- **Cultural Appreciation**: Exposure to various designs and technologies from different cultures helps children appreciate diversity and think critically about the role of design in different societies.

9. Long-Term Academic Benefits

- **Transferable Skills**: The skills gained through DT—such as problem-solving, planning, and adapting—are transferable to other subjects and areas of life. These skills are also valuable as pupils progress in their education.
- **Preparation for Future Learning**: Early exposure to DT lays the foundation for more advanced study in technology, engineering, and design in later years. It helps pupils develop a mindset that is open to experimentation and learning through doing.