



Upper Beeding Primary School

# Design and Technology Policy

May 2023

Design and Technology is an inspiring, rigorous and practical subject. Design and Technology encourages children to learn to think and intervene creatively to solve problems both as individuals and as members of a team. It prepares them to deal with tomorrow's rapidly changing world.

*"Design is a funny word. Some people think design means how it looks. But of course, if you dig deeper, it's really how it works."*

Steve Jobs

*"The best way to predict the future is to create it"*

Abraham Lincoln

## **CURRICULUM INTENT**

*Why do we teach Design Technology? Why do we teach it the way we do?*

At Upper Beeding Primary School we encourage children to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. We give children the opportunities to work independently and in groups, listening to others ideas and treating them with respect. The children are given the scope to develop creativity, flexibility and perseverance. They will critically evaluate existing products, their own designs and make projects in a positive and constructive manner. Respect for the environment and for health and safety will be fostered. Through designing and making their own creations, the children find enjoyment, satisfaction and purpose.

Through our Design and Technology lessons we aim for the children to gain knowledge and understanding of materials and components, controls and structures. To develop skills, techniques and knowledge of materials and tools through focused practical tasks. To be able to disassemble, investigate and evaluate a range of simple products which are found in everyday life. To develop their confidence when formulating their original ideas.

Design and Technology lessons provide opportunities for cross curricular learning including ICT for design, recording and evaluating work. Mathematical skills may be used for calculating the required dimensions and shape of packaging or products; scientific skills may be required for testing strengths of different materials; historical knowledge may be used for accurate designs from the past and artistic skills may be employed to make the product from the design.

## **CURRICULUM IMPLEMENTATION**

*What do we teach? What does this look like?*

The teaching of Design Technology across the school follows the National Curriculum through the use of Design and Technology Association's 'Projects on a Page' documents. Children design products with a purpose in mind and an intended user of the products. Food technology is implemented across the school with children developing an understanding of where food comes from, the importance of a varied and healthy diet and how to prepare this.

Design and technology is a crucial part of school life and learning and it is for this reason that as a school we are dedicated to the teaching and delivery of a high quality Design and Technology curriculum; through well planned and resourced projects and experiences.

Design and Technology at Upper Beeding Primary school 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. It is very cross - curricular and draws upon subject knowledge and skills within Mathematics, Science, History, Computing and Art. 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.

### **CURRICULUM IMPACT**

*What will this look like? What tools would we like our children to have when they leave our school?*

Children 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.

We ensure the children:

- 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 and 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. Children will design and make a range of products. A good quality finish will be expected in all design and activities made appropriate to the age and ability of the child

### **TEACHING AND LEARNING**

Class teachers will be responsible for the delivery of D&T by following set schemes as outlined in each year group's units of work. D&T is to be delivered during set D&T lessons each week, which will alternate with Art every half term. The children will have the opportunity to work individually, in small groups and as a whole class in their classrooms.

Pupils will be following the "Projects on a Page" Scheme of Work which is planned to ensure coverage of the National Curriculum.

### **EARLY YEARS FOUNDATION STAGE**

We encourage the development of skills, knowledge and understanding that help the children make sense of their world as an integral part of the school's work. This learning forms the foundations for later work in Design and Technology. These early experiences include asking questions about how things work, investigating and using a variety of construction kits, materials, tools and products, developing making skills and handling appropriate tools and construction material safely and with increasing control. The children are able to cook and prepare food adhering to good health and hygiene routines. We provide a range of experiences that encourage exploration, observation, problem solving, critical thinking and discussion. These activities, indoors and outdoors, attract the children's interest and curiosity.

### **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.

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, (or 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.

### **National Curriculum requirements for food and Nutrition at KS1**

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:

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

### **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, 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.

### **National Curriculum requirements for food and nutrition at KS2**

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.

### **ASSESSMENT**

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.

Design Technology is monitored by the subject leaders throughout the year in the form of lesson observations, looking at outcomes and pupil interviews to discuss their learning and understanding and establish the impact of the teaching taking place. The subject leaders compile a portfolio of work termly, focusing on skills progression and outcomes. EYFS pupils' progress and attainment is tracked using Insight, assessment tracking programme, telling us whether each individual child is below expected, at expected or above expected attainment for their age.

### **EQUAL OPPORTUNITIES AND INCLUSION**

All children have equal access to the design and technology curriculum and its associated practical activities in line with the Upper Beeding Primary School Equal Opportunities Policy. All staff are responsible for ensuring that all children, irrespective of gender, learning ability, physical disability, ethnicity and social circumstances, have access to the whole curriculum and make the greatest possible progress. Where appropriate, work will be adapted to meet pupils' needs and, if appropriate, extra support given. More able pupils will be given suitably challenging activities and opportunities to extend their learning further.

### **HEALTH AND SAFETY**

Certain health and safety concerns are inherent with design technology, including the storage of materials and tools and the use of equipment within lessons. Children are instructed in the correct use of equipment and tools and the specific dangers of using heated or sharp resources. Children are supervised at all times during activities. A risk assessment covering the use of craft knives, saws and other sharp tools has been conducted and is updated as needed.

### **ROLE OF THE SUBJECT LEADER**

The design technology leaders will be enthusiastic, demonstrating and monitoring the teaching and learning across the school, to support and guide the practice of teachers, ensuring a high quality, broad and stimulating design and technology curriculum. They will monitor and evaluate the effectiveness of design technology teaching and learning, and liaise and consult with external agencies where appropriate. They will support the update of a range of good-quality design technology materials will be maintained in school and supplemented when needed for workshops or cross-curricular projects. This will enable teachers to resource and teach effectively and maintain a meaningful and engaging design technology curriculum.

### **PARENTS**

We encourage and welcome all parents and carers to support and assist with whole school events and design technology projects. Parents and carers with specialist design technology skills, and those who work in design technology, are warmly encouraged to approach the school with support and ideas for workshops or a discussion about how to support and enrich design and technology at Upper Beeding Primary School.

Reviewed, Adopted and Ratified by:

Staff: May 2023

Governing Body: May 2023

Date for Review: May 2026