



# Design and Technology

Signed: ----- Date: -----  
Chair of Governors

Signed: ----- Date: -----  
Headteacher

Adopted and Approved by the Governing Body: **October 2023**  
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## **Rationale**

Singlewell Primary School **cares** about children enhancing their Design and Technology skills. As a school, we believe in providing **equal** opportunities for all to access an inspiring, challenging and practical subject which prepares children to contribute to the development of our rapidly changing world. Throughout their time at Singlewell, children are encouraged to become **resilient** and creative thinkers, problem-solvers and potential innovators. Children use creativity, imagination, experience and research to design, make and evaluate products that tackle relevant social and environmental problems for today's society. At Singlewell, Design and Technology is taught through a series of Construction, Mechanisms, Textiles and Cooking and Nutrition units which follow a 'Design/Make/Evaluate' structure. Singlewell children will become more **ambitious** through developing technical and practical expertise.

## **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.

## **Objectives:**

Our objectives in the teaching of design and technology are:

- To give children the opportunity to take part in both creative and practical activities
- To gain an understanding of the importance and relevance of design and technology in the wider world
- To develop imaginative thinking in children and to engage children in discussions about what they like and dislike when designing and making things
- To encourage children to talk about how things work, and to draw and model their ideas
- To encourage children to be analytical and critical when they are considering and analysing products
- To encourage children to select appropriate materials, tools and techniques for making a product
- To follow safe procedures when using equipment
- To explore attitudes towards the world and how we live and work within it;
- To develop an understanding of technological processes and products, their manufacture and their contribution to society;
- To foster enjoyment, satisfaction and purpose in designing and making things.

## **Teaching and Learning of Design and Technology**

Staff use a variety of teaching and learning styles in their Design and Technology lessons. Our main aims are to develop children's skills and knowledge of tools and materials, giving children the opportunity to explore and develop their ideas not only by themselves but by collaborating with others. We aim for children to begin applying their newly learned skills and knowledge to practical real-life situations and evaluate their own and others work in a constructive way. Children will be given these opportunities in whole class lessons as well as group or individual activities. Children have access to a wide range of resources in their DT lessons such as: the environment, construction kits, books, pictures, plans and photographs.

## **The Foundation Stage**

Design and technology is taught within the 'Expressive Arts and Design' area of learning alongside art, music, movement, dance and role-play. The early learning goals for Expressive Arts and Design indicate what children should know, understand and be able to do by the end of the reception year. This learning is delivered through high quality design and technology, enabling children to safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function, using what they have learnt about media and materials in original ways, thinking about uses and purposes. Elements of Design and Technology are also found in other areas of learning during the foundation stage, due to the curriculum due to our integrated approach to learning across the curriculum.

Reception teachers plan quality learning opportunities for art and design using the Early Years Curriculum. There is an emphasis on independence and self-initiated learning, which enables foundation stage children to freely explore resources and pursue their own creative interests and talents in addition to the planned learning experiences.

## **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. They should work in a range of relevant contexts (for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment). 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 their 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

## **Key Stage 2**

Through a variety of creative and practical activities, our pupils are taught the knowledge, understanding and skills needed to engage in the process of designing and making. They 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 (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
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### **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

## **Cross-curricular skills and links**

Cross curricular links can be explored within historical and geographical links such as 3D dinosaur sculpture, the Great Fire of London, Tudor houses, designing and making vehicles and pirate ships, exploring textiles and the resilience to make purposeful products including a CAM mechanism. Design and technology draws upon and develops skills, knowledge and understanding from across the curriculum.

## **Differentiation and SEND**

All children can take part in Design and Technology lessons at Singlewell. Children with SEND are given additional support from teaching assistants, differentiated activities or specific resources in order to successfully access the learning outcomes. Our SENCO is available to offer support and advice to staff that may have concerns regarding any aspect of SEND. Our Design and Technology curriculum engages children in a range of different activities suitable for the child's age and ability. Children will have the opportunity to record results in a range of different ways e.g. speaking, designing, drawing, assembling, making, writing and using IT.

## **Equal Opportunities**

It is important that all children have access to our Design and Technology curriculum. Across our school, there are children of differing ability. We recognize that children will need differentiated learning opportunities and teachers will match the challenge of the task to the ability of the child. We are able to do this by implementing a range of strategies such as setting open-ended tasks and providing a range of activities through the provision of different resources. Additionally, Teachers are aware of children who have a particular talent for Design and technology and aim to provide additional challenges for these children where appropriate.

## **Health Safety and Hygiene**

The children are encouraged to experiment with a range of tools, materials, processes and techniques in a safe manner.

Teachers will introduce pupils to a variety of production processes and the correct tools for the task.

It is important that pupils are taught essential life skills to enable them to participate confidently and safely in our designing and making society. Tools should be checked before use, be age appropriate and children should be trained to use them safely. Children are also taught to follow proper procedures for food safety and hygiene.

## **Assessment, Recording and Reporting**

Opportunities for assessment will be identified when planning, and children will receive ongoing formative teacher assessment.

It is important that teachers assess the ongoing design process and not just students finished product or outcomes. Teachers can use a range of assessment techniques throughout teaching such as:

- Observation of pupils
- Teacher questioning
- Pupil's written work/drawings/designs
- Pupil's evaluation of their own work.
- Photographs of children engaged in lessons
- Peer assessment and discussions.

A statement of the child's progress and achievement in design and technology will form part of the annual report to parents.

### **Role of the Co-ordinator**

The design and Technology Co-ordinator is responsible for ensuring that the scheme of work is matched to the Programme of Study, and that it is adhered to by the teachers. Equipment is the responsibility of the staff, but the co-ordinator will check that the equipment and materials are ordered and well organised. Each class teacher will need to identify their requirements in relation to the scheme of work.

### **Review**

The effectiveness of the Design and Technology curriculum will be in discussions with the Headteacher and member of staff, so that resources, teaching methods and needs can be identified and addressed during the following year.