



DESIGN AND TECHNOLOGY POLICY **(Article 28)**

Garlinge Primary School and Nursery is a Rights Respecting School. As part of our commitment to the UN Convention on the Rights of a Child, please find links to the articles throughout this policy. Details of the articles can be found on the school website.

Rationale (Article 3)

Each teacher is committed to secure and sustain effective teaching and learning opportunities for each individual child in their class. The quality of teaching and learning and standards of pupil achievement are regularly monitored.

Overview (Article 13)

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire 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. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Aims

Design and technology teaching and learning at Garlinge Primary School and Nursery 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 (Article 17)
- 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 (Article 24)

Attainment Targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Subject Content

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, such as the home and school, gardens and playgrounds, the local community, industry and the wider environment. When designing and making, pupils are 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 such as 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

Develop Technical Knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms, such as levers, sliders, wheels and axles, in their products

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, such as 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 accurately, such as cutting, shaping, joining and finishing
- 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

Develop Technical Knowledge

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products, such as gears, pulleys, cams, levers and linkages
- understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs, buzzers and motors
- apply their understanding of computing to programme, monitor and control their products

Cooking and Nutrition (Article 24)

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 afford-ably and well, now and in later life.

Pupils should be taught to:

Key Stage 1

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

Key Stage 2

- 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

Teaching and Learning Styles

The school uses a variety of teaching and learning styles in design and technology lessons. The principal aim is to develop children's knowledge, skills and understanding in design and technology. Teachers ensure that the children apply their knowledge and understanding when developing ideas, planning and making products and then evaluating them. We do this through a mixture of whole-class teaching and individual/group activities. Within lessons, we give children the opportunity both to work on their own and to collaborate with others, listening to other

children's ideas and treating these with respect. Children critically evaluate existing products, their own work and that of others. They have the opportunity to use a wide range of materials and resources, including ICT.

In all classes there are children of differing ability. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies:

- setting common tasks that are open-ended and can have a variety of results
- setting tasks of increasing difficulty where not all children complete all tasks
- grouping children by ability and setting different tasks for each group
- providing a range of challenges through the provision of different resources
- using additional adults to support the work of individual children or small groups

Design and Technology Curriculum Planning

Design and Technology is a Foundation subject in the National Curriculum. Our school uses a school developed scheme of work as the basis for its curriculum planning in design and technology. We carry out the curriculum planning in design and technology in three phases: Long Term, Medium Term and Short Term. The Long Term plan maps out the content covered during each term of the year for each year group and is taken from our scheme of work. Our Medium Term plans give details of coverage for each term and ensure an appropriate balance and distribution of work across the year. Short Term plans show what teaching and learning is to be undertaken across a week.

We plan the activities in design and technology so that they build upon the prior learning of the children. We give children of all abilities the opportunity to develop their skills, knowledge and understanding and we also build planned progression into the scheme of work, so that the children are increasingly challenged as they move through the school.

Foundation Stage

We encourage the development of skills, knowledge and understanding that will help Nursery and Reception children make sense of their world as an integral part of the school's work. Planning for the children's learning is set out in the Statutory Framework for the Foundation Stage. 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.

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.

Teaching Design and Technology to Children with Additional Educational Needs (Article 23)

At our school we teach design and technology to all children, whatever their ability. Design and technology forms part of the school's policy to provide a broad and balanced education for all children. Through our design and technology teaching we provide learning opportunities that enables all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels.

Equal Opportunities *(Article 2)*

At Garlinge Primary School and Nursery it is the responsibility of the school and the staff working within the school to provide equal opportunities for all children irrespective of gender, religion or race.

Assessment and Recording

Teachers assess children's work in design and technology by making assessments as they observe them working during lessons. This is undertaken during the year to assess children at an Emerging, Expected or Exceeding level related to their year group. They record the progress that children make by assessing the children's work against the learning objectives for their lessons. The teaching and learning of design and technology can occur as part of the children's topic work and is recorded in topic books, but may also be part of their history, science or other related activities. Assessments are made against National Curriculum statements of attainment.

Monitoring and Review

The monitoring of the standards of children's work and of the quality of teaching in design and technology is the responsibility of the Design and Technology Subject Leader. Their role is to be informed about current developments in the subject and to provide a strategic lead and direction. The work of the subject leader also involves supporting colleagues in the teaching of design and technology within the school. A curriculum review is made annually which reports on achievements and indicates areas for further improvement.

Health and Safety *(Article 19)*

The general teaching requirement for health and safety applies in this subject. We teach children how to follow proper procedures for food safety and hygiene and for the safe use of tools and materials.