

**DESIGN AND TECHNOLOGY POLICY**

# **RATIONALE**

Design and Technology should provide children with a real life context for learning. We want to allow children to aspire to be more creative and evaluative through providing skills for use in the wider world. Through the DT curriculum, children should be inspired by inventors, engineers, designers and chefs, to enable them to create a range of structures, mechanisms, textile products, electrical systems and food products with a real life purpose.

# **AIMS AND OBJECTIVES**

Design and Technology (D.T) 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. At Norwood, 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 aim to, wherever possible, link work to other disciplines such as mathematics, science, engineering, computing and art. The children are also given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness and are encouraged to become innovators and risk-takers. As a school we have really developed staff knowledge of Design and Technology, through the use of more specialised planning. We need to continue to develop our understanding and knowledge of inventors.

**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. 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.

**By the end of a pupil’s time in Norwood, we want our children in D.T to:**

* Generate, develop and communicate my ideas in different ways (e.g. through discussion; annotated sketches; cross-sectional and exploded diagrams; prototypes; and information and communication technology).
* Use research to develop my own design criteria to inform the design of innovative, functional, appealing products that are aimed at particular individuals or groups.
* Select from and use a wider range of tools and equipment to accurately perform practical tasks (e.g. 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 function and looks.
* Use mechanical systems in my products (e.g. gears, pulleys, cams, levers and linkages).
* Evaluate my ideas and products against my own design criteria and consider the views of others.
* Investigate and analyse a range of existing products with a greater level of scrutiny and critical thought.
* Know and understand how to strengthen, stiffen and reinforce more complex structures.
* Know how electrical circuits / computing principles are integrated into a product.
* Know and understand how key events (e.g. the invention of the steam engine, electricity, plastic) and key individuals (e.g. Isambard Kingdom Brunel, George Stephenson, Lewis Latimer) in design and technology have helped shape the world.
* Understand how historical restrictions have previously limited the opportunities for some groups (e.g. women) to be successful designers.

# **TEACHING AND LEARNING APPROACHES**

Through a variety of creative and practical activities, we teach the knowledge, understanding and skills needed to engage in an iterative process of designing and making. The children work in a range of relevant contexts (for example home, school, leisure, culture, enterprise, industry and the wider environment).

When designing and making, the children are 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 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
* understand and use electrical systems in their products
* apply their understanding of computing to program, monitor and control their products

# **PLANNING**

Design and Technology is planned in accordance with the school’s foundation subject planning framework. Planning is evident on both a long term format, medium term format and short term, through the use of PowerPoints. Plans include reference to the National Curriculum objectives. The planning of Design and Technology ensures that all the National Curriculum targets are met throughout the year, including the area of Cooking and Nutrition. Key skills and key knowledge for D.T have been mapped across the school to ensure progression between year groups. This also ensures that there is a context for the children’s work in Design and Technology; that they learn about real life structures and the purpose of specific examples, as well as developing their skills throughout the programme of study. Key inventors, designers and engineers are also suggested for each year group. Planning references key vocabulary and prior learning to build upon skills and knowledge already gained. Plans from the Design and Technology association can be used alongside the school’s own planning to support knowledge and understanding of each topic being taught. Design and Technology lessons are often taught as a block so that children’s learning is focused throughout each unit of work.

# **ASSESSMENT AND RECORDING**

Pupils’ progress is assessed and monitored during the year through normal teacher marking, planning and observation. Pupils’ Design and Technology work is marked by the teacher in line with the School’s Marking policy. Children will record their work in a Design and Technology booklet, with work reflecting the areas of design, make and evaluate. Summative assessments are kept for each child in Design and Technology and these are continued as the child progresses through each key stage. All teachers take photographic evidence to support the progress the children have made and are used as part of their ongoing assessments.

# **RESOURCES**

Our school has a wide range of resources to support the teaching of Design and Technology across the school. The resources are stored in a central Design and Technology store, of which all staff has access to. The resources are reviewed and restocked to ensure that enough resources are available and staff are encouraged to feedback when additional resources are required that may benefit their teaching of design and technology.

# **HEALTH AND SAFETY**

The general teaching requirement for health and safety applies in this subject. We encourage the children to consider their own safety and the safety of others at all times. Teachers refer to the School's Health and Safety Policy and the safety procedures recommended in the DfE 'Health and Safety of Pupils on Educational Visits' guidelines for the educational visits aspects of this subject.