

Greens Norton C of E Primary School



Design and Technology Policy

'At our school everyone can join in with everything we offer'

Approved by

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Background to the Policy

Design and Technology prepares pupils to participate in tomorrow's rapidly changing technologies. They learn to think and intervene creatively to improve quality of life. The subject calls for pupils to become autonomous and creative problem solvers, as individuals and members of a team. They must look for needs, wants and opportunities and respond to them by developing a range of ideas and making products and systems. They combine practical skills with an understanding of aesthetics, social and environmental issues, function and industrial practices. As they do so, they reflect on and evaluate present and past design and technology, its uses and effects. Through design and technology, all pupils can become discriminating and informed users of products, and become innovators. Because it is a subject with practical emphasis and relevance to real life applications it enables all children to experience success and achievement.

*“Design and Technology prepares pupils to participate in tomorrow's rapidly changing technologies. They learn to think and intervene creatively to improve quality of life”.
(National Curriculum 1999)*

This policy outlines the teaching and learning of Design and Technology at Greens Norton Primary School. The development of Design and Technology capability is important in preparing all pupils for citizenship in an ever increasing technological world. The ability to use technological skills is a vital life skill in modern society. Using these skills in a purposeful way provides the opportunity to extend and enhance teaching and learning experiences in the National Curriculum as a whole. Design and Technology can motivate pupils and promote self-esteem and confidence in **all** pupils, including those with Special Educational Needs.

At each Key Stage a programme of study sets out what pupils should be taught. Lesson content is based upon the QCA scheme of work, but may be adapted to meet the needs of individual classes, or to make links with other subject areas. Progression of skills outlined in the curriculum map must be maintained.

1 Aims and objectives

Design and technology offers opportunities for children to:

- develop their designing and making skills;
- develop knowledge and understanding;
- develop their capability to create products through combining their designing and making skills with knowledge and understanding;
- nurture creativity and innovation through designing and making;
- explore values about and attitudes to the made world and how we live and work within it;
- develop an understanding of technological processes, products, and their manufacture, and their contribution to our society.

In Design and Technology, children acquire and apply knowledge and understanding of materials and components, including food, textiles, resistant and mouldable materials, mechanisms and control systems, structures, quality and health and safety.

Children develop designing skills, including generating and developing ideas, clarifying a task, creating design proposals, communicating ideas, planning and evaluating.

Children acquire and refine the practical skills associated with making products including working with materials, components and tools.

2 Implementation

Teachers refer to the Progression of Skills curriculum map, when planning content of lessons.

Progression in design and technology can be characterised by:

- an increase in knowledge, skills and understanding;
 - moving from familiar to unfamiliar concepts;
 - meeting needs which demand more complex or difficult solutions;
- an increase in a child's own understanding of their learning.

Broad issues of progression can be expressed as expectations for each key stage. The following expectations are set out in The National Curriculum.

2.1 Foundation Stage

We teach Design Technology in the reception class as an integral part of the topic work covered during the year. As the reception class is part of the Foundation Stage of the National Curriculum, we relate the scientific aspects of the children's work to the objectives set out in the Early Learning Goals (ELGs) which underpin the curriculum planning for children aged three to five. Design Technology makes a

significant contribution to the objective in the ELGs of developing a child's creativity and knowledge and understanding of the world.

Key Stage 1

By the end of Key Stage 1 most children will be able to:

- use a range of materials to design and make simple products;
- select materials, tools and techniques and explain their choices;
- understand simple mechanisms and structures;
- measure, assemble, join and combine materials in a variety of ways using basic tools safely;
- investigate and evaluate simple products, commenting on the main features.

2.3 Key Stage 2

By the end of Key Stage 2 most children will be able to:

- use knowledge and understanding of a range of materials, components and techniques to design and make quality products;
- evaluate work as it develops and, if necessary, suggest alternatives;
- produce designs and plans which list the stages involved in making a product, and list tools and materials used;
- accurately measure, mark, cut, join and combine a variety of materials, working safely and recognising hazards to themselves and others;
- understand the use of electrical and mechanical systems and more complex structures;
- evaluate what is or is not working well in a product.

3 Design and Technology Curriculum Planning

3.1 The school uses the Qualifications and Curriculum Authority (QCA) scheme of work for Design Technology as the basis of its curriculum planning. The QCA scheme has been adapted to the local circumstances of the school in that we make use of the local environment in our fieldwork.

3.2 We carry out our curriculum planning in Design Technology in three phases (long-term, medium-term and short-term). The long-term plan maps the topics studied in each term during the key stage. The Design Technology subject leader works this out in conjunction with teaching colleagues in each year group. In some cases we combine the scientific study with work in other subject areas, especially at Key Stage 1; at other times the children study Design Technology as a discrete subject.

3.3 Our medium-term plans, which we have based on the QCA scheme of work in Design Technology, give details of each unit of work for each term. The Design Technology subject leader keeps and reviews these plans.

3.4 The class teacher is responsible for writing the daily lesson plans for each lesson (short-term plans). These plans list the specific learning objectives of each lesson. The class teacher keeps these individual plans, and s/he and the Design Technology subject leader often discuss them on an informal basis.

3.5 We have planned the topics in Design Technology so that they build upon prior learning. We ensure that there are opportunities for children of all abilities to develop their skills and knowledge in each unit and we also build progression into the Design Technology scheme of work, so that the children are increasingly challenged as they move up through the school.

4 The contribution of Design Technology to teaching in other curriculum areas using key skills

Design and Technology develops and enhances skills in other curriculum areas. Our curriculum map allows children access to the following cross curricular opportunities during Key Stage One and Two:

4.1 English (key skill: communication)

Design Technology contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. They use organisational features and systems to find texts and information. Some of the texts that the children study in the Literacy Hour are of a technological nature. The children develop oral skills in Design Technology lessons through discussions and through recounting their observations of design tasks. They develop their writing skills through writing reports and projects and by recording information

4.2 Mathematics (key skill: application of number)

Design Technology contributes to the teaching of Mathematics in a number of ways. The children use weights and measures and learn to use and apply number. Through working on investigations they learn to estimate and predict. They develop the skills of accurate observation and recording of events. They use numbers in many of their answers and conclusions.

They recognise the need for standard units of length, mass and capacity, choose which ones are suitable for a task, and use them to make sensible estimates in everyday situations; convert one metric unit to another [for example, convert 3.17kg to 3170g] ; know the rough metric equivalents of imperial units still in daily use.

They recognise that measurement is approximate; choose and use suitable measuring instruments for a task; interpret numbers and read scales with increasing accuracy; record measurements using decimal notation

They recognise angles as greater or less than a right angle or halfturn, estimate their size and order them; measure and draw acute, obtuse and right angles to the nearest degree

4.3 Information and Communication Technology (ICT) (Key skill: ICT and problem solving)

ICT helps pupils learn in design and technology by stimulating their work, allowing them to accurately manufacture what they have designed, and helping them to manufacture real and quality products with a professional finish. It makes tasks easier and minimises differences between ability levels and previous experiences. Finally, ICT saves time and resources, which allows pupils time to be creative.

4.4 Art and Design

Children are taught to investigate and combine visual and tactile qualities of materials and processes and to match these qualities to the purpose of the work

4.5 Science

Pupils should be taught

- to compare everyday materials and objects on the basis of their material properties, including hardness, strength, flexibility and magnetic behaviour, and to relate these properties to everyday uses of the materials
- about types of force about friction, including air resistance, as a force that slows moving objects and may prevent objects from starting to move.
- that when objects [for example, a spring, a table] are pushed or pulled, an opposing pull or push can be felt
- to construct circuits, incorporating a battery or power supply and a range of switches, to make electrical devices work [for example, buzzers, motors]

5 Inclusion

5.1 At our school we teach Design Technology to all children, whatever their ability. Design Technology forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our Design Technology teaching we provide learning opportunities that enable 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. Opportunity will be found for more able children to extend their technological understanding.

5.2 When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, and differentiation – so that we can take some additional or different action to enable the child to learn more effectively. This ensures that our teaching is matched to the child's needs.

5.3 We enable pupils to have access to the full range of activities involved in learning Design and Technology. Where children are to participate in activities outside the classroom, for example, a trip to a museum, we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

6 Assessment and recording

6.1 Assessments are made in line with the school assessment policy, and are made at the end of each Unit of Study, in line with level descriptors in the National Curriculum.

6.2 Teachers assess a child's capability and attitude towards the process rather than the product or a body of knowledge.

6.3 Children's progress is reported annually to parents in the reports issued in the summer term.

6.4 Individual records are on-going as it is highly unlikely that a pupil's response in any one task or activity will provide evidence for all aspects at the AT's at any one level. The succession of tasks and activities provides opportunities for gaining an overall view of a child's technology capability.

7 Resources

The school:

- is committed to reviewing the position and use of technology resources;
- will ensure the efficient deployment of existing resources;
- is committed to updating and renewing their replacement when necessary, considering further purchasing to meet future needs.

8 Monitoring and review

8.1 It is the responsibility of the Design Technology subject leader to monitor the standards of children's work and the quality of teaching in Design Technology. The Design Technology subject leader is also responsible for supporting colleagues in the teaching of Design Technology, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school.

8.2 The Design Technology subject leader gives the head teacher an annual summary report in which s/he evaluates strengths and weaknesses in the subject and indicates areas for further improvement. The Design Technology subject leader has

specially-allocated time for fulfilling the vital task of reviewing samples of children's work and visiting classes to observe teaching in the subject.

8.3 The subject leader meets with a befriending governor. At least annually, to discuss the Design Technology action plan.

9. The role of the Co-ordinator

It is the responsibility of the Design Technology Co-ordinator to:

- write and update the curriculum policy for Design Technology;
- produce and monitor the long-term curriculum map to ensure coverage of the scheme of work for Design Technology;
- monitor and review medium-term plans for Design Technology to ensure progression;
- aid colleagues with the planning and delivery of lessons when required;
- maintain a portfolio of children's work and use these to demonstrate what the expected level of achievement is in the Design Technology units of study for each age group in the school;
- monitor and review standards of Design Technology teaching through e.g. lesson observations, coaching techniques;
- produce an annual report reflecting on the standards of provision for Design Technology and to set targets accordingly;
- review and order resources to enable the delivery of the Design Technology curriculum.

10 Health and Safety

- The school agrees to abide by statutory health and safety guidelines as outlined by the LA. Regular checks will be undertaken to ensure compliance with legal requirements.
- In general, teachers will always teach the safe storage and use of tools & equipment, and insist on good practice.
- The craft knives will only be used by responsible children under direct supervision.
- Staff have access to 'Make it Safe' Handbook.
- Food will be bought and used on the day it is needed. Teachers and adult support staff will oversee that cupboards, table tops, cooker etc. are clean and in working order. Aprons will be worn by adults and children and they are always to follow strict hygiene principles.

Date ratified:

Due for review: