



Agreed: March 2017
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Aims and objectives

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.

Our objectives in the teaching of design and technology are for all pupils to:

- develop imaginative thinking in children and to enable them to talk about what they like and dislike when designing and making things;
- 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;
- select appropriate tools and techniques for making a product, whilst following safe procedures;
- develop an understanding of technological processes and products, their manufacture and their contribution to our society;
- have enjoyment, satisfaction and purpose in designing and making things;

Teaching and learning style

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 or 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;
- 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
- providing specialist support where individual children have particular gifts or talents.

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Design and technology curriculum planning

Design and technology is a foundation subject in the National Curriculum. Design and Technology forms part of the thematic curriculum in all phases of the school. Class teacher and key stage teams ensure that activities planned are age appropriate and demonstrate progression throughout the school.

The activities in Design Technology are planned so that they build on the prior learning of the children. We give children of all abilities the opportunity to develop their skills, knowledge and understanding.

Teachers are responsible for their own class organisation and teaching style, whilst at the same time ensure these complement the overall aims and philosophy of the school. The children are given the opportunity to work as a class, as part of a group, in pairs and as individuals. They are provided with design and make assignments and focused practical tasks– to practice a particular skill, and activities whereby they can investigate, disassemble and evaluate simple products. A variety of resources are provided for the children and they are encouraged to make choices for themselves.

In the Foundation Stage

We encourage the development of skills, knowledge and understanding that help reception and nursery children make sense of their world as an integral part of the school's work. As is part of the Foundation Stage of the National Curriculum, we relate the development of the children's knowledge and understanding of the world to the objectives set out in the EYFS Curriculum for the subjects expressive arts and design, understanding the world and physical development. 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.

In 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 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 [for example, cutting, shaping, joining and finishing]

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- 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

Cooking and nutrition

As part of their work with food, pupils are 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 are 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 are taught the knowledge, understanding and skills needed to engage in an iterative 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 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 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

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

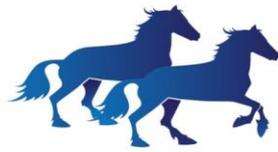
- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]

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- apply their understanding of computing to program, monitor and control their products

Cooking and nutrition

- 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

Contribution of design and technology to teaching in other curriculum areas

English

Design and technology contributes to the teaching of English in our school by providing valuable opportunities to reinforce what the children have been doing during their English lessons. The evaluation of products requires children to articulate their ideas and to compare and contrast their views with those of other people. Through discussion, children learn to justify their own views and clarify their design ideas.

Mathematics

In design and technology, there are many opportunities for children to apply their mathematical skills through choosing and using appropriate ways of calculating measurements and distances. They learn how to check the results of calculations for reasonableness, and learn how to use an appropriate degree of accuracy for different contexts. Children learn to measure and use equipment correctly. They may apply their knowledge of fractions and percentages to describe quantities and calculate proportions. The children will carry out investigations, and in doing so, they will learn to read and interpret scales, collect and present data, and draw their own conclusions. They will learn about size and shape, and make practical use of their mathematical knowledge, in order to be creative and practical in their designs and modelling.

Personal, social and health education (PSHE) and citizenship

Design and technology contributes to the teaching of personal, social and health education and citizenship. We encourage the children to develop a sense of responsibility in following safe procedures when making things. They also learn about health and healthy diets. Their work encourages them to be responsible and to set targets to meet deadlines, and they also learn, through their understanding of personal hygiene, how to prevent disease from spreading when working with food.

Spiritual, moral, social and cultural development

The teaching of design and technology offers opportunities to support the social development of our children through the way in which we expect them to work with each other in lessons. Our groupings allow children to work together, and give them the chance to discuss their ideas and feelings about their own work and the work of others. Through their collaborative and cooperative work across a range of activities and experiences in design and technology, the children develop respect for the abilities of other children, and a better understanding of themselves. They also develop a respect for the environment, for their own health and safety, and for that of others. They develop their cultural awareness and understanding, and they learn to appreciate the value of differences and similarities. A variety of experiences teaches them to appreciate that all people are equally important, and that the needs of individuals are not the same as the needs of groups.

Design and technology and ICT

Information and communication technology enhances the teaching of design and technology, wherever appropriate, in all key stages. Children use software to enhance their skills in designing and making things. Younger children are able

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to use simple desktop-publishing software to try out designs. Older children use an ICT control program to control mechanisms and to get them to move in different ways. The children also use ICT to collect information and to present their designs through a range of design and presentation software.

Design and technology and inclusion

At our school, we teach design and technology to all children, whatever their ability and individual needs. Design and technology implements the school curriculum policy of providing a broad and balanced education to all children. Through our design and technology teaching, we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents, and those learning English as an additional language, and we take all reasonable steps to achieve this.

Additional Support Plans may include targets related to child's ability to access various sorts of learning or activity. In that case, the teacher will make adjustments to provision as they would for all other subjects.

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, e.g. a workshop morning to a local lead school, we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

Assessment for learning

Teachers assess children's work in design and technology by making assessments as they observe them working during lessons. They record the progress that children make by assessing the children's work against the learning objectives for their lessons. Older children are encouraged to make judgements on ways in which their work can be improved.

There is a work exemplary book/portfolio stored in the staff room, which all staff have access to. This demonstrates the expected level of achievement in design and technology in each year of the school.

Resources

Our school has a wide range of resources to support the teaching of design and technology across the school. Classrooms have access to a range of basic resources, and specialised equipment, kept in the design and technology area of the kiln room, and a resources room cupboard. These resources are only accessible to adults. Food technology resources are stored in the staff room units, and the cooker unit, stores in the resources room can be wheeled into classrooms as required. Perishable materials for Food Technology are purchased as required.

Health and safety

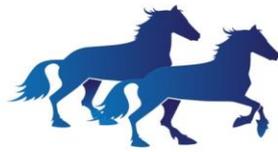
In this subject, the general teaching requirement for health and safety applies. We teach children how to follow proper procedures for food safety and hygiene. We emphasise the need for safe use of all equipment and materials. Risk assessments, as appropriate, are in place for Design Technology lessons.

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Monitoring and review

The coordination and planning of the design technology curriculum are the responsibility of the class teachers and the subject leader, who also:

- supports colleagues in their teaching, by keeping informed about current developments in design technology, and by providing a strategic lead and direction for this subject in the school;
- gives the headteacher an annual summary in which she evaluates the strengths and weaknesses in design technology, and indicates areas for further improvement for the SIP;
- uses specially allocated regular management time to review evidence of the children's work, and to observe lessons of design technology across the school.

The quality of teaching and learning in design and technology is monitored and evaluated by the headteacher as part of the school's agreed cycle of lesson observations.

This policy will be reviewed every three years or sooner if required.

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