William Penn
Design and Technology Policy

Aims and Objectives

Design and Technology prepares children to take part in the development of our rapidly changing world. Creative thinking encourages children to make positive changes to their quality of life. The subject encourages children to become autonomous and creative problem-solvers, both as individuals and as part of a team. It enables them to identify needs and opportunities and to respond by developing ideas and eventually making products and systems. Through the study of Design and Technology they combine practical skills with an understanding of aesthetic, social and environmental issues, as well as functions and industrial practices. This allows them to reflect on and evaluate present and past design. Design and Technology helps all children to become informed consumers and potential innovators.

The aims of Design and Technology are:

- to enable children to talk about how things work, and to draw and model their ideas;
- to develop a knowledge and understanding of a range of compliant and resistant materials, their properties and characteristics.
- to encourage children to select appropriate tools and techniques for making a product, whilst following safe procedures;
- to explore attitudes to how we live and work within the world;
- to develop an understanding of technological processes, products, and their manufacture, and their contribution to our society;
- to foster enjoyment, satisfaction and purpose in designing and making.
- to develop the creative, technical and practical expertise needed to perform everyday
- tasks confidently and to participate successfully in an increasingly technological world
- to 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
- to critique, evaluate and test their ideas and products and the work of others
- Understand and apply the principles of a healthy diet.
- Understand where food comes from and the issues of seasonality.

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/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 differentiated tasks;

- 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

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 [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
- 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.

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

Cooking and Nutrition

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 affordably and well, now and in later life.

Pupils are 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.

We carry out the curriculum planning in Design and Technology in the long-term, medium-term and short-term. The long-term plan maps out the units covered in each term during the key stage.

Our medium-term plans, which we have adopted from the National Curriculum, give details of each unit of work for each term. They identify learning objectives and outcomes for each unit, and ensure an appropriate balance and distribution of work across each term. The class teacher keeps these plans, and the class teacher and subject leader may discuss them on an informal basis.

In the short term, class teachers adapt their medium-term plans for each Design and Technology lesson. They consider the specific learning objectives for each lesson and may adapt how the lessons are to be taught, responding to the outcome of the previous lesson.

We plan the activities in Design and Technology so 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.

Early Years Foundation Stage

We encourage the development of skills and knowledge and understanding that help reception children make sense of their world as an integral part of the school's work. In the Foundation Stage we relate the development of the children's understanding of the world to the objectives set out in the Early Learning Goals. 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.

Contribution of Design and Technology to Teaching in other Curriculum Areas

Where possible, Design and Technology is taught in a cross-curricular context.   For example, in Rivers and Mountains topic, the children designed and made their own warm hats.

Information and Communication Technology (ICT)

We use ICT to support Design and Technology teaching when appropriate. Children may use software to enhance their skills in designing and making, and use draw-and-paint programs to model ideas and make repeating patterns. They may use databases to provide a range of information sources to gain access to images of people and environments. The children may also use ICT to collect information and to present their designs through draw-and-paint programs.

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.

The teaching of Design and Technology offers opportunities to support the social development of our children through the way 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 co-operative 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.

Teaching Design and Technology to Children with Special Needs

We teach Design and Technology to all children, whatever their ability. Design and Technology also forms part of our school's aim to provide a broad and balanced education to all children. Teachers provide

learning opportunities that are matched to the needs of children with learning difficulties. Work in Design and Technology takes into account any relevant targets set for individual children in their Individual Learning Plans (ILPs) and intervention targets.

Assessment and Recording

Ongoing assessment is undertaken by teachers both informally, during lessons, by the marking of work and recorded formally on a termly basis. Parents are informed of their child's progress in Design and Technology via the end of year Report.

Assessments are used by teachers to inform lesson planning, syllabus planning and to maintain and improve standards of teaching and learning.

Monitoring and Evaluation

Monitoring of the standards of pupils work in Design and Technology is the responsibility of the Design and Technology subject leader. The work of the subject leader also includes supporting colleagues in current trends in teaching Design and Technology and in providing a strategic lead and direction for Design and Technology in the school.

Design and Technology is monitored for:

- Rigour of teaching practise
- Progress and attainment of pupils within each year group
- Pupil understanding and aspirations via pupil conferencing
- Need and opportunities for staff CPD

Resources

Our school has a wide range of resources to support the teaching of Design and Technology across the school.

Health and Safety

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. Children are taught how to use tools appropriately. Teachers plan appropriately for potential health and safety risks in individual lessons.

Signed:

Date: