

Burton Leonard Church of England (VC) Primary School



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 of functions and industrial practices. This allows them to reflect on and evaluate present and past design and technology, its uses and its impacts. Design and technology helps all children to become discriminating and informed consumers and potential innovators.

The national curriculum for design and technology 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
- 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

Teaching and learning

The national curriculum subject content in Key Stage 1; Design, make, evaluate and technical knowledge:

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 should be taught to:

- 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
- 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
- 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.

The national curriculum subject content in Key stage 2; design, make, evaluate, technical knowledge:

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 should be taught to:

- 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
- 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
- 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
- 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.

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 use 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 computing.

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

We plan the activities in Design and Technology 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, 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, knowledge and understanding that help reception children make sense of their world as an integral part of the school's work. As the Reception class 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 Prime and Specific Areas of Learning. 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 both indoors and outdoors.

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. Discussion, drama and role-play are important ways that we

employ for the children to develop an understanding of the fact that people have different views about design and technology. 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 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)

Design and technology contributes to the teaching of PSHE. 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.

Inclusion

At our school we teach Design and Technology to all children, meeting ability and individual needs. We are a 'dyslexia friendly' school, providing a broad and balanced education to all children. Through our history teaching we provide learning opportunities that enable all pupils to make at least good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities or those with special gifts and talents.

Assessment for learning

Children demonstrate their ability in Design and Technology in a variety of different ways. Teachers will assess children's work by making informal judgements during lessons. On completion of a piece of work, the teacher assesses the work and uses this information to plan for future learning. Written or verbal feedback is given to the child to help guide his or her progress. Older children are encouraged to make judgements about how they can improve their own work. They also give feedback to each other thus encouraging learning from others.

Monitoring and review

It is the responsibility of the subject leader to monitor the standards of children's work and the quality of teaching in Design and Technology. The subject leader is also responsible for supporting colleagues in their teaching, for being informed about current developments in the subject, and for providing a strategic lead and direction for Design and technology in the school. The subject leader evaluates strengths and weaknesses in Design and Technology, and indicates areas for further improvement.

The subject leader has specially-allocated time for fulfilling the vital task of reviewing samples of children's work, and visiting classes to observe the teaching and learning in Design Technology.

Subject Leader – Mrs Amanda Townson

Adopted Autumn 2016

Next review Autumn 2019

A handwritten signature in black ink, appearing to be 'Amanda Townson', written in a cursive style.

Amanda Townson