



2.14

Design and Technology

Introduction

At Silverhill Primary School we are committed to providing all children with learning opportunities to engage in design and technology.

Value of Design and Technology

We believe design and technology is about designing and making products for a specific need or purpose. It involves children in learning about the world we live in and developing a wide range of skills through designing and making. It helps children learn vital skills such as how to think through problems creatively, how to organise themselves, how to work with knowledge and practical skills to bring about change and to shape the environment. Through design and technology children become discriminating and informed users of products and become innovators.

Aims

Our aims in teaching Design and Technology are that all children will build upon their natural enthusiasm for making things and to:

- find enjoyment in designing and making things for themselves
- give every child an awareness of how things are designed and made in the world around them
- encourage confidence and skill in designing and making according to ability
- develop skills in handling materials and tools
- develop appropriate vocabulary to help them to understand their work and the work of others
- appreciate and evaluate their own achievements and those of great inventors and engineers
- nurture creativity and innovation through designing and making.
- 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.

In the Foundation Stage we provide opportunities for children to:

- develop a curiosity and interest in the made world through investigating, talking and asking questions about familiar products.
- Develop confidence and enthusiasm through frequent exploration of construction kits to build and construct objects, and activities for exploring joining, assembling and shaping materials to make products.
- Extend their vocabulary through talking and explaining about their designing and making activities.

Principles of Learning

Design and Technology is important because:

- designing and making things is a pleasurable activity which can provide fulfilment through life.
- observation of how things are made and how they work heightens perception of the world in which we live.
- designing and making things requires a discipline of logical thinking to achieve a sequence of actions.
- designing and making provides an opportunity for children of all abilities to achieve success.
- designing and making often requires team work and communication with others.

Design and Technology is a foundation subject in the National Curriculum.

The fundamental skills knowledge and concepts of the subject are set out in “Design and Technology in the National Curriculum” where they are categorised into attainment targets.

Planning

- Design and Technology –a scheme of work for Key stages 1 and 2 provides the basic framework for learning and teaching design and technology.
- Colleagues can adapt or change units provided the materials, knowledge, skills and learning objectives are similar to ensure progression. ‘Primary Solutions’ (Nuffield) are used to support planning.
- In the foundation stage weekly designing and making activities are planned; some child initiated by children and some led by teachers.
- Children in their designing and making will apply knowledge and skills of; textiles, food, mechanisms and structures.
- All design and making assignments will provide learning opportunities for developing creativity through designing skills such as generating, exploring, modifying ideas through drawing, and modelling with materials.
- Topics are planned with class teachers working in groups and emphasising links with other curriculum areas, especially Science, and plans are carefully balanced to ensure full coverage of the National Curriculum requirements.
- Staff meetings are used to discuss the Design and Technology curriculum and ensure consistency of approach and standards.

- Work plans are drawn up by individual teachers for each half term and monitored by the Head Mistress.

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 should be 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 should be 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 should be taught to:

Key stage 1

- use the basic principles of a healthy and varied diet to prepare dishes and understand where food comes from.

Key stage 2

- understand and apply the principles of a healthy and varied diet and 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.

Principles of the Teaching

- The Design and Technology Curriculum is organised in topic based in Key Stage 1 and 2.
- The Predominant Mode of Working in Design and Technology is co-operative group work although individual work and class teaching is used where appropriate. Within this structure groups are usually of mixed ability and relevant discussion is encouraged.
- Teaching Assistants are used to assist Class Teachers.
- Parents are sometimes invited to assist in DT activities.
- Pupils with Special Needs are given help in the group/class situation where appropriate.
- Equal opportunities are addressed by the whole school policy and care taken to provide opportunities for all to experience the diverse activities within the D.T. curriculum.
- A wide range of cultural images and contexts will be used in design and technology, we will use these images to challenge stereotype.
- For all children to produce their best we plan differentiated resources and tasks through:
 - Changing the demands of the task

- More limited choices
- Small group work
- Selecting appropriate tools and equipment
- Talented or able children are challenged through more demanding tasks such as open ended design briefs and carrying out independent research.
- Homework is used sometimes to support Design and Technology.
- Excellence in Technology is celebrated in display and performance.

Attainment targets

- By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Principles for Assessment

- Feedback to Pupils about their own progress is given to pupils verbally during the lessons and at the completion of a topic during discussion and evaluation.
- Formative Assessment is carried out by teachers in the course of their teaching.
- Summative Assessment is carried out at the end of each National Curriculum Key Stage through teacher assessment and at the end of QCA units against the objectives achieved.

Recording and Reporting

- Records of Progress in Design and Technology are kept for each child.
- Reporting to Parents is at the end of the Autumn Term and annually through a written report at the end of the year.

Use of Resources

- Classroom Resources in Design and Technology are kept, clearly labelled, in the Art room and specialised equipment can be borrowed from the caretaker (with his consent).
- Central Resources in Design and Technology are the responsibility of the Technology Co-ordinators who have a budget available.
- Visits to exhibitions are sometimes planned in conjunction with other curriculum areas (i.e. Science Workshops - @Bristol) to support Technology activities.
- Information Technology is used as an important resource and in computer-aided design.
- The Library is used as a resource in Technology.

Health and Safety

The school is responsible for teaching design technology in a healthy and safe environment with reference to appropriate risk assessments for activities likely to incur possible risk. The teaching staff and DT co-ordinator are responsible for the supervision of activities such as cutting, sawing, cooking. All DT equipment is subject to maintenance and safety checks and any faulty equipment is to be reported to the Head Mistress.

This policy was adopted by	Silverhill School
Date	January 2018
Review Date	January 2019
Name of signatory	Jenifer Capper
Role of signatory	Head Mistress