



Layfield Primary School

Design and Technology Policy

February, 2017

Review date: February, 2019

Design and Technology

Design and Technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make items 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.

The Aims of Design and Technology

The aims of Design and Technology teaching are:

- 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 items for a wide range of users.
- To critique, evaluate and test ideas and products and the work of others.
- To understand and apply the principles of nutrition and learn how to cook.

Design and Technology teaching time

The teaching of Design and Technology in each year group is arranged by the teaching staff. The unit may be carried out in a block of afternoons in a week, weekly sessions for a half term or alternate weeks with art as the teaching staff judge to be appropriate. The school utilises 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 items and then evaluating them. This is achieved through a mixture of whole-class teaching and individual/group activities. Within lessons, the children are given 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.

Design and Technology resources

All Design and Technology equipment and additional resources are stored in fully labelled boxes in the Art and DT area. All equipment borrowed should be returned after use. The Subject Leader should be informed of any equipment requirements.

Health and Safety

The general teaching requirements for health and safety apply to this subject. Children are taught to follow proper procedures for food safety and hygiene.

Early Years

As an integral part of the school's work, the development of skills, knowledge and understanding that help children make sense of their world is encouraged. Design and Technology in the Early Years aims to develop independence in children and self-evaluation of their work. We relate the development of the children's knowledge and understanding of the world to the objectives set out in the Early Learning Goals. These underpin the curriculum planning for children aged three to five. This learning provides a foundation for later work in Design and Technology. These early experiences include questioning how things work, investigating and using a variety of construction kits, materials, tools and products, developing making skills and handling appropriate tools and construction materials 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.

During the Foundation Stage teachers will plan activities and opportunities where children can learn through talk, play and their own life experiences. Children in the Foundation Stage will experience a variety of activities including the following:

- Choosing and exploring a variety of materials and equipment such as fabrics, card, paper and boxes.
- Learning how to use scissors safely to cut materials.
- Experiencing using a variety of joining materials such as PVA glue, Pritt Stick, masking tape, elastic bands, Sellotape and string to join items together.
- Having the opportunity to take part in both cooking and non-cooked food activities to understand the importance of food hygiene.
 - Having opportunities to create a variety of models using a wide range of construction kits to explore how components are assembled.
 - Having opportunities to explain how they will make a model and evaluate their likes and dislikes about it. They will also have opportunities to rebuild and re-evaluate.
- Becoming familiar with folding and shaping paper in order to create a range of structures.

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
- 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.

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

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
- 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.

Technical knowledge

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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
- 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.

Special Educational Needs and Inclusion

We aim to be an inclusive school and offer equality of opportunity and diversity when needed to all groups of pupils within school.

We teach Design and Technology to all children, whatever their ability and individual needs. Design and Technology forms part of our school curriculum policy to provide a broad and balanced education for all our children. Our teachers provide learning opportunities that are matched to the needs of children with learning difficulties. We strive to meet the needs of pupils with special educational needs, disabilities, special gifts and talents and of those learning English as an additional language.

Assessment

Teachers assess children's work in Design and Technology by observing them during lessons. They record the progress that children make by assessing the children's work against the learning objectives for their lessons. Teachers record this information on their assessment tracking sheets. Teachers then use this information to plan the future work for each child and to make an assessment of progress as part of the annual report to parents. Each teacher passes on this information to the next year's teacher at the end of the school year. The Design and Technology Subject Leader keeps evidence of the children's work in a portfolio. This provides a standard for the expected level of achievement in Design and Technology in each year of the school.

Evaluating and monitoring

Monitoring the standard of children's work and the quality of teaching 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 the teaching of Design and Technology, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school.

The school will also evaluate and monitor the teaching and learning of pupils through lesson observations, book scrutinies and analysis of planning.