

CHEADLE PRIMARY SCHOOL

DESIGN AND TECHNOLOGY POLICY

At Cheadle Primary School, Design and technology prepares pupils to participate in tomorrow's rapidly changing technologies. They learn to think and intervene creatively to improve quality of autonomous and creative problem solvers, as individuals and members of a team.

Our work reflects the National Curriculum requirements for Design and Technology as set out in the National Curriculum of 2013:

"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."

Aims and objectives

At Cheadle Primary School the teaching of Design and Technology should help children to develop an interest in and an appreciation of the technological world:

- To be able to work independently and with confidence on activities that involves them in both designing and making;
- To become more aware of the way in which everyday objects have been designed and made;
- To become more skilled at using a range of tools and materials;
- To encourage children to make an evaluation of the technological quality of their own work and that of others;
- To encourage respect for the ways in which people of different cultural backgrounds, both past and present have shown the ability to enrich their environment;
- To develop their knowledge and understanding, and apply it to their technology work (including cooking);
- To be able to work individually and in teams;

It is intended that by the end of Key Stage Two, the pupils in our school will have taken part in a variety of activities which will enable them to achieve the following objectives:

- Have worked with a range of materials and equipment;
- To have an understanding of how things work through the skills of investigating, disassembling and evaluating;
- To understand the behaviour of structures;
- Use appropriate vocabulary;
- Be able to research information from a variety of sources and apply ICT where appropriate;
- Evaluate their own work;
- Use a variety of ways to communicate their ideas;
- Build on previous knowledge and experience and skills from programmes of study of other subjects;
- Be able to use a variety of techniques to prepare food;
- Understand healthy choices about lifestyle;
- To work economically and safely, being aware of health and safety hazards.

Programmes of Study:

Design and Technology in the Foundation Stage

Design and Technology forms part of two of the six areas of learning in the foundation stage:

"Knowledge and Understanding of the World". Early learning goals give guidelines for the expectation required by the end of this stage for each child.

Children are encouraged to find out about the technological world through investigative activities and play. Through this children are able to develop the crucial knowledge, skills and understanding to help them make sense of the world.

Key Stage 1:

Through a variety of creative and practical activities, children will be taught the knowledge, understanding and skills needed to engage in the process of designing and making.

During design and making tasks, of increasing complexity and challenge, as children progress through KS1, they will learn 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 such as 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, such as levers, sliders, wheels and axles, in their products.

Cooking and Nutrition:

- 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 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, such as 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, such as 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, such as gears, pulleys, cams, levers and linkages
- understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs, buzzers and motors
- apply their understanding of computing to programme, 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.

Planning

Coverage of the programmes of study is mapped by individual teachers against their Design and Technology activities over the year, and monitored by the co-ordinator. All class teachers are responsible for the planning and teaching of Design technology. Design and technology may be taught as a cross-curricular topic or theme to ensure children have a context for learning, to include ICT when appropriate. Long and Medium term plans should be completed for all areas and stored on the learning platform where they are easily accessible by all, a copy should also be sent to the coordinator to be stored. Where possible, links should be made with the Science Programme of Study.

Weekly plans are developed by class teachers to include learning objectives, planned activities and differentiation. Planning for pupils with specific special needs will take into account IEP targets.

Resources

Communal resources are kept in the Design and Technology/Maths store room next to the main office. Year groups have their own subject specific resources and resource orders are submitted by the coordinator twice a year. There are a range of books and other documents to support teaching and the school.

Use of Information Communication Technology

Where appropriate, planning will incorporate the use of ICT through the use of software, digital cameras, databases, internet etc.

Differentiation

Children bring many different levels of experience and understanding of Design and Technology to the classroom. In the planning of the Design and Technology curriculum and schemes of work there is ample scope to raise standards of achievement, enquiry and interest for whatever stage of development each child has reached. Differentiated activities should build on these differences and past achievements by presenting appropriate challenges alongside high yet realistic expectations.

Differentiation for pupils with special learning difficulties, as for all other pupils, should be planned to ensure that all individuals enjoy the fullest possible benefit of a broad and balanced curriculum.

Provision for children with Special Educational Needs

At Cheadle Primary we have an established framework for the identification and support of children with special educational needs. Through this framework the child's needs are identified and appropriate levels of support are provided.

The provision for children with special educational needs is met:

- by liaising with the coordinator;
- by ensuring that the needs of each child are identified and included in differentiated planning;
- the teacher's planning as specified in the child's IEP.

More Able Pupils

The provision for more able children is met:

- by ensuring that the child's needs are incorporated into teacher's planning with appropriate activities at the level required;
- by including appropriate children on the gifted and talented register;
- by support from the coordinator for more able pupils.

Equal Opportunities

All pupils are entitled to an equal opportunity to achieve progress in Design and Technology irrespective of race, gender or disability.

Assessment, Recording and Reporting

Assessment forms an important part of the teaching and learning process and is carried out on a regular basis. Assessment opportunities in Design and Technology are included in the teacher's medium and short term planning for the year group. Key skills are identified for each unit and each child is assessed on these skills.

The nature of assessment depends on the type of activity or lesson and the age or ability of the child.

The assessment methods can include

- observing children working, individually or in groups;
- Using assessment for learning techniques;
- questioning and listening to children explain their ideas and reasons for choices;
- assessing written work at every stage;
- Photographic records;
- use of ICT;
- teaching observations

Health and Safety

Teachers are responsible for the health and safety of the children in their class. Classroom activities should be as safe as possible and children should be taught to use tools and equipment properly. Teachers should refer to the school Health & Safety policy.