



Monkhouse Primary School

“Design is not just what it looks and feels like. Design is how it works” -Steve Jobs

Rationale:

Design and technology prepares children to take part in the development of tomorrow’s 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 and technology, its uses and its impacts. Design and technology helps all children to become discriminating and informed consumers and potential innovators.

Aims:

Through our teaching of Design and Technology at Monkhouse we aim to:

- Develop imaginative thinking in children and to enable them to talk about what they like and dislike when designing and making things;
- Enable children to talk about how things work, and to draw and model their ideas;
- Encourage children to select appropriate tools and techniques for making a product, whilst following safe procedures;
- Explore attitudes towards the made world and how we live and work within it;
- Develop an understanding of technological processes and products, their manufacture and their contribution to our society;
- Foster enjoyment, satisfaction and purpose in designing and making things;
- Develop the cross-curricular use of design and technology in other subjects.

Our aims take into account the National Curriculum for Design Technology 2014.

Curriculum

Foundation Stage

We encourage the development of skills, knowledge and understanding that help Nursery and Reception children make sense of their world. We relate this development to the objectives set out in the “Early Years Foundation Stage” (Practice Guidance), which underpins the curriculum planning for children aged from birth to five. 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 materials safely and with increasing control. We provide a range of experiences that encourage exploration, observation, problem solving, critical thinking, discussion and decision making. These activities take place both indoors and outdoors, and are designed to arouse the children’s interest and curiosity. Throughout the Foundation Stage, activities and opportunities are planned where children can learn through talk, play and their own life experiences.

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].

At the end of Key Stage 1 most pupils will be able 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.

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].

By the end of key stage 2, most children will be able 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

Recording of Design Technology

Pupils are encouraged to record their work using a variety of methods and therefore communicate their findings to others. As per the school's policy for writing, once a unit of work the children will record in an extended piece of writing. These may include written or verbal reports, charts, models, pictures and role play activities. Examples of children's work will be retained to provide evidence of on-going Design Technology, including photographic evidence of displays, presentations, visitors and visits out of school.

Teaching and Learning

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 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 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 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
- Providing specialist support where individual children have particular gifts or talents.

Progression

The activities in Design Technology build upon the prior learning of the children. Within our scheme of work, learning activities are in sequence to ensure continuity and progression.

Assessment and Recording

At Monkhouse, assessment is an integral part of the teaching process. Assessment is used to inform planning and to facilitate differentiation. Teachers assess children's work in design and technology by making assessments as they observe them working during lessons, allowing for different learning styles. They record the progress that children make by assessing the children's work against the learning objectives for the lessons. Once in a unit of work the children will receive a quality mark highlighting where the children have been successful in meeting the learning intention and an area for further development or challenge. The assessment of children's work is on-going to ensure that understanding is being achieved and that progress is being made. Feedback is given to the children as soon as possible, and marking work will be guided by the school's Marking and Feedback Policy. Children are encouraged to make judgements on ways in which their work can be improved. These assessments will then be used to judge pupils' level of attainment as part of the annual report to parents. All children receive a written report on their progress in Design Technology as part of their annual report to parents in the Summer Term.

Differentiation

At Monkhouse we teach Design Technology to all children, whatever their ability. Design Technology forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our Design technology teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Assessment against the National Curriculum allows us to consider each child's attainment and progress. We use a range of strategies to support pupils. A few of these, particularly relevant to Design Technology are:

- The use of appropriate vocabulary at varying levels of difficulty during lessons
- Different levels of written or oral questions for pupils investigating photographic or other visual material.
- Careful use of support for pupils with English as an additional language.
- Level of support given.

Gifted and Talented

Teachers provide teaching and learning experiences that encourage pupils to think creatively, explore and develop ideas, and try different approaches. Pupils should be encouraged to set their own questions, offer ideas, suggest solutions or explanations, and reflect on what they have heard, seen or done in order to clarify their thoughts. At Monkhouse we encourage Greater independence in working, with a focus on problem solving and investigative tasks.

We encourage gifted pupils to communicate their understanding in a variety of ways, giving them responsibility for choosing and evaluating the most appropriate method.

ICT

Information and Communication Technology (ICT) enhances the teaching of Design and Technology wherever appropriate, in all key stages. Children use software to enhance their skills in designing and making things. Younger children are able to use simple desktop-publishing software to try out designs. As part of our commitment to incorporate ICT across the curriculum we are working to develop our use of Ipads and flipped learning to introduce to the curriculum in the academic year 2015-2016. This element of the policy will be updated.

Literacy

Design and technology contributes to the teaching of Literacy in our school by providing valuable opportunities to reinforce what the children have been doing during their Literacy lessons. Discussion, drama and role-play are important ways that we now employ for the children to develop an understanding 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.

Maths

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.

Resources

Our school has a wide range of resources to support the teaching of design and technology across the school. Classrooms have a range of basic resources, with the more specialised equipment being kept in the design and technology store. This is accessible to children only under adult supervision.

Health and Safety

In this subject the general teaching requirement for health and safety applies. We teach children how to follow proper procedures for food safety and hygiene.

It is the responsibility of the subject leader to pass on any relevant Health and Safety information to staff. It is the individual member of staff's responsibility to ensure that they have read, understood and act on this information.