Design and Technology Policy 2023/2024

Design and Technology prepares children to take part in the development of today'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. We live in a technological age, surrounded by artefacts and systems which have been produced, designed and made for us by other humans working together in a complex range of activities.

Aims

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.

At Stenson Fields Primary, we strive to provide a program of learning opportunities for all pupils to gain the basic knowledge and understanding, which underpin design and technology. In addition, we endeavour to provide continuity and progression for all pupils throughout the curriculum as they move through the school. We aim to ensure the health and safety of all pupils during design and technology activities.

Curriculum and school organisation

We use a topic based approach to teaching and learning using objectives taken from the National Curriculum. We teach DT skills discretely and through our Curriculum themes, ensuring all children access all areas of the Design Technology Curriculum.

In Early Years Foundation Stage, Design and Technology is an integral part of topic work, relating aspects of the children's work to the objectives set out in the Early Learning Goals, and Expressive Arts and Design. To facilitate our objectives different teaching styles and methods are used as appropriate. These include small group and individual work.

To meet the requirements of the National Curriculum it is essential that each teacher carry out the following Design Technology activities with a year;

- Mechanical systems
- Textiles
- Cooking
- Structures
- Designing and Evaluating

Design and technology curriculum planning

Design and technology is a foundation subject in the National Curriculum. Our school uses both the National Curriculum and 'Project on a Page' by the Design and Technology Association plans as the basis for its curriculum planning. Our medium-term plans, which we have adopted from these sources, give details of each unit of work for each term. They identify learning objectives and outcomes for each unit, and ensure an appropriate balance and distribution of work across each term.

Teaching Sequence in Design Technology	Big picture: Placing of the Design Technology being studied in the context of similar past learning in the subject
	Daily review: Brief review of learning covered in previous lesson/s
	Posing a problem to be solved in a context the children understand
	Experimenting and investigating with different techniques and media;
	Creating own design work, applying new techniques, skills and media to own design work;
	Critically evaluating their own design work;
	Improving work after evaluation.

Objectives

To achieve our aims we ensure that the planned activities our children undertake are challenging, motivating, relevant and enjoyable. We give children confidence in their work by providing continual support and encouragement. The children are extended in their work in a way which develops their expertise. The children are provided with the very best resources possible, while constantly reviewing this provision in the light of curriculum changes, development and budget constraints.

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.

<u>Cooking and nutrition</u>

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.

Cross-curricular links

Design and Technology, where possible, will be taught as part of each unit's cross-curricular learning themes. Standalone units of work may be taught in order to ensure appropriate coverage of a range of skills, techniques and media.

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 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 we use Maths to help us produce nets of shapes in order to create packaging. Numerical equipment is also used in Design and Technology lessons when weighing and measuring.

Science

Science helps us in Design and Technology lessons to study, create and drawing electrical circuits. It also helps us to think more about using materials to create structures which withstand a force.

Computing

We use ICT to support design and technology teaching when appropriate. Children use software to enhance their skills in designing and making, and use draw-and-paint programs to model ideas and make repeating patterns. They use databases to provide a range of information sources to gain access to images of people and environments. Children use word processing packages to plan and evaluate work through the design process and to collect information to help present their designs through draw-and-paint programs. CAD programs are used to plan and make packaging for products.

Personal, social and health education (PSHE)

Design and technology contributes to the teaching of personal, social and health education and citizenship. 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.

Spiritual, moral, social and cultural development

Our groupings allow children to work together and understand how we expect them to do this. Collaborative work in design and technology develops respect for the abilities of others and a better understanding of themselves. In addition, they develop a respect for the environment, for their own health and safety and that of others. They learn to appreciate the value of similarities and differences. A variety of experiences teaches them to appreciate that all people are equally important.

Assessment and Monitoring

Assessment in Design Technology is ongoing and formative with a variety of strategies used such as observation, discussion, marking and questioning. Pupils will be assessed against the learning outcomes. The learning outcomes in each unit show how children might demonstrate what they have learnt. Pupils are actively involved in evaluating their work and thinking about possible improvements. Evidence such as photographs for these assessments will be gathered informally throughout the year on elements of designing and making identified in individual teacher's planning. Information from assessment is used to inform the teacher's short term planning and to help the teacher identify ways forward for the pupils learning.

Co-ordinators Responsibilities/monitoring

- Monitoring the teaching and learning of design and technology by scrutinising children's work, talking with children, observing teachers, overseeing planning and discussing/evaluating these with colleagues.
- Managing the capitation budget for design and technology and evaluating resources.
- Reviewing policy statements and schemes of work.

Resources

Our school has a wide range of resources to support the teaching and learning of this subject across the school. Classrooms have a range of basic resources, with the more specialised equipment being kept in the Design and Technology store cupboard. Cooking and food based equipment is kept in the kitchen area of the Staff room.

Health and Safety

Pupils will be taught to use the correct tools for tasks. The tools must be used under the supervision of an adult. Pupils must consider health and safety issues and consequences and operate in a safe and hygienic manner. Pupils are taught how to follow proper procedures for food safety and hygiene. The DT leader will keep staff informed about the latest up to date Health and Safety updates.

Equal Opportunities and Inclusion

Equality of opportunity at Stenson Fields Primary Community School means that all children, taking account of gender, age, ability, disability, ethnic origin, faith, culture, social circumstances and sexual orientation have full access to all the curricular, pastoral and social opportunities offered by the school. In providing equality of opportunity consideration is given to:

- Ensuring that boys and girls are able to participate in the same curriculum
- Taking account of the interests and concerns of boys and girls by using a range of activities and contexts for work and allowing a variety of interpretations and outcomes
- Avoiding gender stereotyping when organising pupils into groups and assigning them to activities or organising access to resources
- Taking account of pupils' specific religious or cultural beliefs relating to the representation of ideas or experiences
- Enabling the fullest possible participation of pupils with disabilities or particular medical needs, offering positive role models and making provision, where necessary, to facilitate access to activities with appropriate support, aids or adaptations.