

Sherburn Primary School

Design and Technology Policy



Definition

'Design and Technology prepares pupils to participate in tomorrow's rapidly changing technologies. They learn to think and intervene creatively to improve quality of life. The subject calls for pupils to become autonomous and creative problem solvers, as individuals and members of a team. They must look for needs, wants and opportunities and respond to them by developing a range of ideas and making products and systems. They combine practical skills with an understanding of aesthetics, social and environmental issues, function and industrial practices. As they do so, they reflect on and evaluate present and past Design and Technology, its uses and effects. Through Design and Technology, all pupils can become discriminating and informed users of products, and become innovators.'

Purpose of Study

'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.' (National Curriculum 2014)

1. Introduction

This policy outlines the teaching and learning of Design and Technology as part of a Creative Curriculum. It reflects the views of all teaching staff. The implementation of the policy is the responsibility of all teaching staff and will be monitored by the head teacher and the subject lead.

2. Aims of Design and Technology

Design and Technology is a practical subject providing opportunities for all children to design and make good quality products to the best of each child's ability. It involves children in developing an understanding of the ways in which people have designed products in the past and present to meet their needs. As part of a Creative Curriculum it supports the learning of other curriculum subjects, including core subjects.

Children will be offered opportunities to: develop their designing and making skills; develop their knowledge and understanding; develop their capability to create high quality products; use a range of tools, materials and components safely; nurture creativity and innovation, explore their own values and attitudes; develop an understanding of manufacture of products and their contribution to our society.

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.

3. **Implementing Design and Technology**

The Design Technology Curriculum is taught through a cross curricular creative curriculum and focused projects to cover

- investigative, disassembly and evaluation activities
- focused practical tasks
- designing and making projects

During each year all pupils should cover each objective of the National Curriculum specified for their key stage several times to develop their skills. This coverage should be differentiated to allow for pupils' different abilities.

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
- 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.

Learning Outcomes

Children will design and make a range of products. A good quality finish will be expected in all design and make activities appropriate to the age and ability of the child.

Children in Key Stage 2 will keep sketches, plan drawings, paper mock ups, notes and evaluations. These can be used for assessment purposes and for monitoring progression.

Key Stage 1 children will keep a record of drawings, pictures etc. for projects.

A display of Design and Technology work will be set up by class teachers - this will include drawings, patterns, quick models and final products to demonstrate to parents the whole and making process.

Equal opportunities

We believe that it is important for all children to experience the range of Design and Technology activities. We will use opportunities within Design and Technology to challenge stereotypes.

Special Educational Needs

All children will be encouraged and supported to develop design and technological capability through a range of materials. We recognise the importance of identifying the specific difficulties that individual children might have in school and will adopt organisational strategies in teaching in order to eliminate or minimise the impact of these difficulties.

Early Years

In the Reception Class children will have opportunities to learn simple cutting and joining techniques, explore movement through construction kits and talk about how products are made.

Assessment, Recording and Reporting

Ongoing teacher assessment - recorded at the end of each topic - is integral to teaching and learning of Design Technology. A variety of assessment techniques and strategies are used in order to give a comprehensive picture as possible of children's knowledge and skills.

Each child's knowledge and skills should be assessed within each topic of work and a judgement will be made as to whether children are working at, below or exceeding age related expectations. This information will be recorded and passed on to the child's next teacher.

At specified staff meetings during the year, teachers will be asked to identify children working at age related expectations and bring some examples of their work. Examples of this work, including photographs, will be kept for the school portfolio demonstrating the different skills taught and different levels of ability. An annual report to parents will detail progress and achievements made in Design and Technology.

5. Resources

Resources specific to Design Technology and Art are stored centrally and are used alongside class based resources. Food resources, tools and equipment are kept in the food area (See Appendix 1 Food Hygiene Guidelines).

A limited range of materials and tools will be provided for Key Stage 1 and Foundation Stage children

- paper, card, reclaimed materials, textiles, square section wood, dowelling, wheels, cotton reels, construction kits, food
- hole punches, snips, scissors, hacksaws, bench hooks, needles, equipment for working with food.

Children in Key Stage 2 will have access to the above materials and tools and in addition:

- glue gun (low temperature melt), wire strippers, rotary cutters (year 6 only), hard drill
- correx, foam board, materials for frameworks, plastazote - these materials are centrally stored and will be introduced to the children through focused activities as indicated in the planned units of work

- motors, switches, buzzers, bulb holders, pulleys are kept in central store.

Collections of products suitable to use as a stimulus for designing and making activities are stored in central store.

Published resources to support teaching and learning in Design and Technology are stored in the staff resources area and in the school library.

6. Health and Safety

Teachers will always teach the safe use of tools and equipment and insist on good practice. Risk assessments of all equipment to be used should be made before lessons. Precautions should be taken for the safe handling of tools and equipment according to the Risk Assessment for their use. Children will be taught to return tools to a safe position when not in use. [Appendix 2](#)

The craft knives and rotary cutters will only be used by responsible Year 6 children under direct supervision. The glue gun will be used by Key Stage 2 children under direct supervision only when there is no other appropriate joinery technique. [Appendix 1 – Health and Safety](#)

7. Role of the Co-ordinator

- lead the development of Design and Technology on the school
- provide guidance to individual members of staff
- keep up to date with local and national developments in Design and Technology and disseminate relevant information
- lead one staff meeting per year on agreement trialling and one meeting updating staff on new tools, materials etc. (dependant on school development plan)
- review and monitor the success and progress of the planned units of work
- order stock linked to the planned units of work at the end of each term
- be responsible for the organisation and maintenance of Design and Technology resources.

Sarah James 2018 (Review annually)

Reviewed November 2019

Appendix 1 - Food Hygiene Guidelines

HYGIENE

To prevent the spread of infection, adults in the group will ensure that the following good practices are observed:

Personal hygiene

- Hands washed after using the toilet.
- A large box of tissues available and children encouraged to blow and wipe their noses when necessary. Soiled tissues disposed of hygienically.
- Children encouraged to shield their mouths when coughing.
- Hygiene rules related to bodily fluids followed with particular care and all staff and volunteers aware of how infections can be transmitted.

Cleaning and clearing

- Any spills of blood, vomit or excrement wiped up and flushed away down the toilet. Rubber gloves always used when cleaning up spills of body fluids. Floors and other affected surfaces disinfected using chlorine or iodine bleach diluted according to the manufacturer's instructions. Fabrics contaminated with body fluids thoroughly washed in hot water.
- Spare laundered pants, and other clothing, available in case of accidents and polythene bags available in which to wrap soiled garments.
- All surfaces cleaned daily with an appropriate cleaner.

Food

The school will observe current legislation regarding food hygiene, registration and training.

In particular, each adult will:

- Always wash hands under running water before handling food and after using the toilet.
- Not be involved with the preparation of food if suffering from any infectious/contagious illness or skin trouble.
- Never smoke in the school grounds.
- Never cough or sneeze over food.
- Use different cleaning cloths for kitchen and toilet areas.
- Prepare raw and cooked food in separate areas.
- Keep food covered and either refrigerated or piping hot.
- Ensure waste is disposed of properly and out of reach of the children. Keep a lid on the dustbin and wash hands after using it.
- Wash fresh fruit and vegetables thoroughly before use.

Any food or drink that requires heating will be heated immediately prior to serving and not left standing. No food or drink will be reheated.

Tea towels will be kept clean and stored in a dust-free place, e.g. closed cupboard or drawer.

Cracked or chipped china will not be used.

Appendix 2

Safe use of tools e.g. Hacksaw, peelers, craft knives, etc.

All tools should be stored out of reach of children when not in use.

Before use of tools in the classroom tools must be stored safely.

If used outside tools need to be stored in a sealed container and store out of child reach e.g. from a tree or fence.

Before use a detailed risk assessment of the tools use should be made or previous risk assessment reviewed.

Before use all tools should be checked for wear and tear.

Adults should thoroughly demonstrate how to correctly carry and use the tool.

Adults should explain the dangers of using the tool including incorrect use.

Children should use tools only under direct supervision of a responsible adult.

After use of tools in the classroom tools must be carried safely and returned to a safe storage area.