



Hartwell Primary School

DT Policy

Hartwell Primary is a Voluntary Controlled academy and, recognising its historic foundation, works to preserve and develop its religious character in accordance with the principles of the Church of England. This includes the active promotion of Christian and British values and the respecting of those of other faiths or none.

'Believe, Aspire, Grow'

Review date: Autumn 2022

Introduction

At Hartwell Primary School, we recognise that children are living in a highly developed technological society. They are constantly using and controlling a wide range of technology whether it be the use of a light switch, calculator or computer programme. This is all part of their life experience the knowledge of which they will be able to use in the classroom.

Design and technology is about practical problem solving and using materials available to solve problems in a person-made environment. At primary school level, we can instil attitudes towards design and technology in which the children can realise that in technology there is never just one correct solution. The process of identifying a need, designing a solution, building an artefact and testing and evaluating it can be most satisfying to the child, particularly if it works and has some relevant function or application.

Design and Technology is about making things that people want and that work well. Creating these things is hugely exciting: it is an inventive, fun activity. (James Dyson, Chairman, Dyson Ltd)

Intent

Hartwell Primary School recognises the importance of technology for pupils of all abilities. As a school, our intention is that all children, through the subject design and technology, will be prepared for the rigours and demands of adult life and through our planning and teaching, we acknowledge the two main areas of the subject, design and technology and computing.

Definition

This statement of policy is concerned only with design and technology. A separate policy statement deals with computing. Design and technology in this school is achieved through opportunities and experiences across the curriculum which enable pupils to take part in a broad range of activities directly concerned with:

- Identifying needs
- Generating ideas
- Planning
- Making
- Evaluating

Design and technology can be achieved both through a subject approach and topic or thematic approach, i.e. science - to design and build apparatus for an experiment or technology - to design and build a battery powered buggy.

Aims and Objectives

Hartwell Primary School believes that design and technology is an essential component of the curriculum because it aims to develop:

1. Core skills of:

- Basic knowledge and identity of materials
- Forms and sources of energy
- Sensing and control systems
- Design (planning, organisation, aesthetics, presentation)
- Evaluation
- Skills in the above areas

2. Competence in:

- Use of instruments, equipment, tools and systems
- Application of instruments, equipment, tools and systems
- Use of materials

3. Awareness of:

- Real life situations and issues
- Impact of technology (past, present and future)
- Conflicts of interests (personal, economic and environmental)
- Aesthetic and social implications

4. Attitudes should encourage:

- Curiosity
- Originality
- Initiative
- Co-operation
- Perseverance
- Open mindedness
- Self-criticism
- Responsibility towards materials, tools and environment,

Teaching and Learning Style

Hartwell Primary 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 the subject. Teachers ensure that children apply their knowledge and understanding when developing ideas, during planning and making products and when evaluating them. This is done through a mixture of whole- class teaching and individual or group activities. Within lessons, 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.

In all classes there are children of differing ability. This fact is recognised and suitable learning opportunities are provided for all children by matching the challenge of the task to the ability of the child. This is achieved through a range of strategies such as:

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;
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 support where individual children have particular gifts or talents.

Design and Technology Curriculum Planning

Design and technology is a foundation subject in the National Curriculum and our planning is cross-curricular and linked to the specific curriculum of our school. This enables pupils to apply their skills as designers in a meaningful and linked context.

Activities in Design and technology are planned so that they build on prior learning. Children of all abilities are given the opportunity to develop their skills, knowledge and understanding, and we also build planned progression into the themes so that the children are increasingly challenged as they move through the school.

As with progression in skills, we expect to see a progression in the level of technical vocabulary children are able to understand and use in their design technology work. The key vocabulary that is expected in each year group can be found in appendix 1 of this policy.

Design and technology generally takes place during afternoon sessions or occasionally as a block of days/ afternoons at the teacher's discretion.

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in the process of designing and making. They should work in a range of familiar contexts e.g. the home, school, gardens and local community to design, make and evaluate as well as increase their technical knowledge:

Design and Technology in the Early Years Foundation Stage

Throughout the Early Years Foundation Stage, activities and opportunities are planned where children can learn through talk, play and their own life experiences. Children in the Foundation Stage will experience a variety of activities including:

- Choosing and exploring a variety of materials such as fabric, card, paper, wood and boxes, learning how to use a variety of tools safely e.g. scissors.
- Exploring a variety of joining techniques such as PVA glue, Pritt stick, masking tape, Sellotape, treasury tags, split pins, paper clips, elastic band and string.
- Taking part in food activities, learning about the importance of food hygiene.
- Having opportunities to explore creating models using a wide range of construction kits that fit together in a variety of different ways.
- Having opportunities to talk about and explain how they will/ have made their model and to discuss what they like/ dislike about it.
- Folding and shaping paper in order to create a range of structures.

Design and Technology in Key Stage 1

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 e.g. 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 in their products e.g. levers, sliders, wheels and axles.

Key Stage 2

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 accurately e.g. cutting, shaping, joining and finishing.
- 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 e.g. gears, pulleys, cams, levers and linkages.

- Understand and use electrical systems in their products e.g. 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, children will be taught how to cook and apply the principles of nutrition and healthy eating. Learning how to cook is a crucial life skill that enables children to feed themselves and others affordably and well, now and in later life.

Foundation Stage

- Understand that some food stuffs are nutritious for us and that others are not.
- Try new foods.
- Begin to follow instructions to prepare and cook simple recipes.

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.

Inclusion

Hartwell Primary School recognises the importance of inclusion and the design and technology curriculum ensures equal access to all pupils regardless of their ability, aptitude, race, religion or gender. A wide range of gender specific and cultural images and contexts may be used and we will use these opportunities to challenge stereotypes.

Monitoring and Assessing

Each topic is planned and delivered with clearly defined learning objectives which are shared with the pupils. Children's research, plans and designs will be recorded in books. Their practical work will be photographed (when possible) and samples collected, if appropriate. Teachers assess children's work in design and technology by making assessments as they observe them working during lessons, allowing for different learning styles. These assessments are then used to judge pupils' level of attainment and progress which is then recorded on Target Tracker. Pupils will be assessed at the end of each unit as well as at the end of the year as part of the pupil annual report. Pupils will be reported as working 'below expected', 'at expected' or 'above expected' in relation to the National Curriculum.

Health and Safety

At Hartwell Primary School, we teach children how to follow proper procedures for food safety and hygiene. In this subject the general teaching requirement for health and safety applies. 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 they have read, understood and act on this information.

Each teacher is responsible for ensuring the learning environment is well organised and safe, with clear areas in which children can work comfortably. Children must be encouraged to work in an organised, tidy and methodical way. This will help them to respect their own work and that of other children.

- Class teachers must assess all activities for dangers or potential hazards and these must be eradicated.
- Risk assessments must be created for all practical lessons and these must be shared with all adults working in the class.
- Children must be taught how to handle tools safely and must be supervised whilst using those that are sharp e.g. saws.
- Craft knives are only to be used in Year 6 and only under close supervision of the teacher in charge.
- Children must wear safety goggles at any time there is a possibility of foreign objects entering their eyes e.g. sanding wood/ spraying paint.
- When cooking an adult must place food in/ remove food from the oven or microwave and must supervise pans on the hob/ hot plate at all times.

Resources

Hartwell Primary 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 more specialised equipment being kept in shared storage areas. These areas are only accessible to pupils under adult guidance.