Design Technology-led by Miss C Robinson

Introduction

Design and Technology prepares pupils to participate in tomorrows rapidly changing technologies. 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.

Aims

Through design and technology, all pupils can become discriminating and informed users of products, and become innovators.

Specific aims that will be employed are:

- To provide all pupils with equal access and opportunity to design and technology, with particular awareness of gender and technology in other cultures.
- To encourage an understanding of technology in our everyday life and develop the technological capability of our children, with respect to the whole curriculum.
- To install good Health and Safety attitudes and habits.
- To ensure progression and differentiation within the process of Design and Technology, considering all individual needs.
- To enable children to see Design and Technology as a whole process and not as unrelated tasks and activities.
- To encourage children's logical and creative thinking, problem solving strategies and building upon their practical skills.
- To provide opportunities for social skills development involving both group work and co-operation.
- To provide appropriate resources at all times.

Teaching and Learning

Key Stage 1

Through a variety of creative and practical activities, pupils will be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They will work in a range of relevant contexts

When designing and making, pupils will 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 will be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They will work in a range of relevant contexts.

When designing and making, pupils will 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

Planning

In order to ensure balance and progression across the key stages and coverage of National Curriculum documents, all DT activities are planned in reference to National Curriculum Programmes of study and are differentiated to include all learners.

Design Technology will be taught three times a year with cross-curricular learning when required, standalone units of work may be taught in order to ensure appropriate coverage of a range of skills, techniques and media. Teachers complete termly unit plans that are based upon the key learning objectives needed to be achieved for each child, in order to develop a core focus skill, e.g. create and use a mechanism. Each unit is carefully planned to ensure it adds to the depth of knowledge around the current theme and meets National Curriculum requirements.

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.
We are completing the 'Cooking in the Curriculum' programme developed by Dudley Healthy Schools. This enables all children to complete at least 1 cooking activity each term and develop a personal recipe folder as they travel through the school.

Assessment

Assessment and record keeping will be kept by individual class teachers and be based on evidence gathered through discussion and observation of the pupil during the lesson and by the child's recording of the activities, e.g. planning, designing, and photographing practical activities. Children's attainment against age related expectations will be assessed and recorded on a termly basis. This information, along with effort, will be reported to parents in the end of term pupil report.

The role of the subject leader

Curriculum Development

- Ensuring that the statutory requirements of National Curriculum are being delivered.
- Leading and co-ordinating development of design and technology policy and schemes of work.
- Promoting a range of teaching and learning styles.
- Ensuring that the requirements of design and technology are represented in whole school planning.
- Monitoring assessment, planning and delivery of DT.
- Providing strategic leadership for DT across the school.

Support and INSET

- Developing a shared philosophy of design and technology within the school.
- Utilising individual staff strengths and providing opportunities for personal development.
- Maintaining personal levels of expertise and awareness of subject developments.
- Providing efficient communication with staff.

Resource Management

- Advising on and management of fixed and consumable resources.

Links

- Developing useful links with Governors, Parents and outside contacts.

Resources

The majority of design and technology activities are carried out in classrooms.
In view of Health and Safety Regulations, it is recommended that food resources should be acquired as and when staff require specific items.
A wide range of resources are kept in the stockroom. These include:
Construction Kits
Tools, Wood, Metal and Plastics
Mouldable Materials
Textiles

For further information, please see C Robinson

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