

Design and Technology at Oak Farm Junior School

Introduction

At Oak Farm Junior School, we believe that Design and Technology is a subject which is intended to help prepare pupils to participate in the development of tomorrow's rapidly changing world. The subject calls for pupils to become autonomous and creative problem solvers, as individuals and members 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 and Objectives

During Key Stage Two, we aim to:

- Develop an awareness of the impact of the made environment, its contribution to the quality of life and our influence on it.
- Gain some appreciation of the nature of materials, how they are used and how they can use them.
- Use materials creatively and doing so develop initiative, thinking and problem solving skills that can be used in a wide range of contexts.
- Develop their ability to communicate effectively.
- Develop the skills, knowledge and understanding of Design Technology through Product Analysis, Design and Make assignments and Focussed Tasks.
- Develop the capability to use tools and equipment safely with a range of materials.

Design and Technology in the New National Curriculum

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.

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 will, using creativity and imagination, design and make

products that solve real and relevant problems within a variety of contexts.

The 'Breadth of Study' specifies how these aspects of design and technology are intended to be developed through:

- Investigating and evaluating a range of familiar products, thinking about how they work, how they are used and the views of the people who use them.
- Focused practical tasks that develop a range of techniques, skills, processes and knowledge.
- Design and make assignments using a range of materials, including electrical and mechanical components, food, mouldable materials, stiff and flexible sheet materials, and textiles.

Curriculum Planning and Organisation

At Oak Farm Junior School, we believe that Design and Technology is best taught as part of an integrated curriculum. All aspects, key skills and understanding are covered within our Creative Curriculum.

The scheme of work has been planned and organised alongside the other foundation subjects within the creative Curriculum ensuring cross curricular links. This is monitored to ensure that continuity and progression is consistent throughout the school and that children are able to build on their previous experiences.

Children receive focused input and stimulus in order to learn and develop knowledge, understanding, skills, techniques and processes.

Teaching and Learning

There are a number of approaches that we use in order to teach Design and Technology effectively. These may be used either separately or in combination.

- Discussion
- Class work where the pupils work collaboratively and independently on skills or designs
- Practical work to encourage a 'hands on' approach and 'learning by doing'
- Work to encourage an awareness of a safe working environment, health and hygiene
- Allow pupils access to a wide range of materials, tools and equipment
- Provide assignments to allow pupils to draw on their own experiences and to encourage them to generate their own ideas
- Identify links with other curriculum areas

Pupils are progressively introduced to a range of skills and experiences appropriate to their age, ability and level of experience. Assignments using a range of tools and materials are chosen to reflect the need for continuity and progression.

Construction kits allow opportunities to model ideas and principles.

Reading and Writing Opportunities

Within our Design and Technology lessons, we aim to provide the children with reading and writing opportunities. These include:

- Communicating ideas, thoughts and opinions through discussion and written work.
- Using design and technology as a stimulus for explanation, instruction, evaluative and descriptive writing.
- Encouraging the use of effective vocabulary through knowledge and understanding of technology.
- Obtain information through reading a range of texts.

Other Cross-Curricular Links

Links with other subjects include:

ICT

- Use of the internet to research ideas and products.
- Use of desktop publishing software to develop and communicate ideas.
- Create, test, improve and refine sequences of instructions to make things happen and to monitor events and respond to them.

Art and Design

- Investigate and combine visual and tactile qualities of materials and processes and to match these qualities to the purpose of the work.

Science

- Compare everyday materials and objects on the basis of their material properties, including hardness, strength, flexibility and magnetic behaviour, and to relate these properties to everyday uses of the materials.
- Use knowledge and understanding of Forces.
- To construct circuits, incorporating a battery or power supply and a range of switches, to make electrical devices work [for example, buzzers, motors].

Mathematics

- Use standard units of length, mass, capacity, angles and temperature in practical situations and choose which ones are suitable for a task.

History and Geography

As part of the Creative Curriculum, aspects of History and Geography are used as a context or stimulus for work in design and technology.

Racial Equality and Equal Opportunities Statement

All children have equal access and inclusive rights to the curriculum regardless of their gender, race, religion, belief, disability or ability. We plan work that is differentiated for the performance of all groups and individuals. Oak Farm Junior School is committed to creating a positive climate that will enable everyone to work free from racial intimidation and harassment and achieve their full potential. This is adhered to in all Design and Technology activities.

Assessment for Learning and Monitoring

Work in Design and Technology may be assessed in the short term, through judgements of recorded work produced by the children but a large proportion of assessment is involved with practical application and language development involving discussion, description and explanation skills. Evidence may be seen in books, on 2-D displays and most commonly through 3-D models and photographs of children's work.

These are collected by the coordinator and put together in a file. The design and technology subject coordinator can review evidence of the children's work in their individual portfolios.

We make medium term assessments after each unit which ensure that National Curriculum targets are being covered, and also to measure the progress against the key objectives. These can help us plan the next unit of work and to identify areas which need to be reviewed. Children will be assessed as B - Below, D – Developing, S – Secure or E – Exceeding.

We make long term assessments towards the end of the academic year which are recorded in individual reports.

Resources

There is a wide range of resources to support the teaching of Design and Technology in the school, and these are regularly monitored and updated. These are mostly kept in the Design and Technology room which is also available for classes to work in. The resources are organised according to types of material and their uses. Food technology resources are kept in the Curriculum Kitchen.

It is important that the resources available are of good quality, so the condition and quantity of tools and materials are regularly monitored and either renewed or replaced when necessary.

Children need to be taught to respect Design and Technology resources and the Design and Technology room.

Health and Safety

We accept a responsibility to plan safe activities in Design Technology. We aim to make the safe use of equipment a key feature where the pupils are aware of how to

use potentially challenging equipment and tools with a high regard for safety and care. Safe and correct use of tools should be demonstrated where necessary and children should be closely supervised when appropriate. Potentially dangerous tools are stored with regard to safety. Work in Food technology will take into account aspects of food safety and hygiene. Allergies are addressed and relevant precautions undertaken.

Differentiation

In Design and Technology, differentiation is mainly by outcome and teacher /adult input. In some activities the task is differentiated to cater for the needs of different abilities.

Review

This policy will be reviewed annually.

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