

Bullion Lane
Primary School



DT Policy

Intent

This document reflects the values and philosophy of Bullion Lane in relation to the teaching and learning of Design Technology. It provides a framework within which all staff work and gives guidance on planning, teaching and assessment.

. The policy should be read in conjunction with the QCA Scheme of Work, which has been adopted by the school, and can be used as a springboard to develop the individual teacher's ideas in a personal way within the school's guidelines. This should enable teachers to design a programme of activities that is responsive to their own and children's skills and needs in Design and Technology at that particular time.

Audience

This document relates to pupils in Key Stages 1 and 2. The children in the Foundation Stage follow the Early Years Foundation Stage Guidance.

This policy is intended for all teaching staff and staff with classroom responsibilities, the School Governors, parents, inspection teams and Durham LA.

This policy document, after presentation to, and agreement by, the staff and Governing Body, is available to all teaching and non-teaching staff and the School Governors.

Philosophy

Design and Technology has practical problem-solving as its core activity.

History shows that human needs can be met by adapting the environment and adapting to the environment. The development of this ability to its current level of sophistication is the result of accumulated knowledge, skills and understanding being added successfully by each generation.

It is important that children become aware that technological decision-making has social, moral and economic implications from which it should not be separated. By the nature of the process, there are no 'right' answers but there are solutions to problems. The process is a creative one where both logic and value judgements play a part.

Design and Technology draws upon the knowledge, skill and experiences from many subject areas for its successful outcomes. It is by completing practical activities that children can apply what they have learnt, or discover what they need to know. Design and Technology is the means by which this process can be structured, so that it develops children's capability to operate in, and contribute to, a world where the practical solutions to problems need to be achieved. The complexity of contexts and solutions can be adjusted to suit all children.

Implementation

National Curriculum

The subject consists of a Purpose of Study, Aims, one Attainment Target and Subject Content. The Subject Content outlines basic requirements and is divided into bullet points for Key Stage 1 and 2.

The children undertake a balanced programme that takes account of abilities, aptitudes and physical, emotional and intellectual development. Most children should achieve the expected Attainment target by the end of their key stage.

Foundation Stage

Through Expressive Arts children are encouraged to construct and create purposefully selecting tools and techniques needed to shape, assemble and join materials they are using. children learn

through first-hand experiences which involve putting their ideas into practice to develop an awareness and understanding of the possibilities and limitations of different materials. Practitioners encourage children to explore, observe, solve problems, think critically, make decisions and talk about why they have made their decisions as they design and create. Children's natural creativity is fostered and opportunities for investigation, designing and making are offered daily within our provision, which enables children to learn a great deal about their world.

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.

Curriculum and School Organisation

In order to achieve the aims outlined, we organize the teaching of Design and Technology into a combination of units and topics drawn from and based upon the QCA scheme which support our cross curricular approach. The cross curricular topics are arranged in general on a 2-year cycle and learning activities are sequential to ensure continuity and progression.

Design and Technology is taught through a combination of direct teaching to introduce new skills, and by providing pupils with real experiences through appropriate contexts. There are practical activities for pupils, educational visits, use of teacher-prepared material, everyday items, and other resources – such as TV and ICT – where appropriate.

Design and Technology is taught by all class teachers and the Arts Team has responsibility for developing the subject.

Scheme of Work

Bullion Lane Primary School uses the QCA Scheme of Work and PIAT Durham Curriculum Plans to aid planning. Year Groups select appropriate units of work to complement topics.

QCA Units

There are twenty-four units, of which eighteen are set out in a Key-Stage plan with six alternative units provided. Each unit is taught over a term or less.

Opportunities for teaching the three types of Design and Technology activity are built into the unit. The three types are as follows.

1. Investigate, Disassembly and Evaluate Activity (IDEA)
2. Focused Practical Task (FPT)
3. Design-and-Make Assignments (DMA).

The IDEAs and FPTs have been ordered so that the most important ones come first. This is to enable teachers to carry out as many activities as the children need, to fit in with the amount of time allocated for Design and Technology.

The activities need not be taught in the order given. Investigate, Disassembly and Evaluate Activities do not have to be taught as focused practical activities. However, each unit of work should have a DMA.

Suggested Timing

D T can be delivered during weekly sessions but might also be delivered more effectively in half-day blocks over half a term.

Progression and Continuity

Within the Scheme of Work, learning activities are in sequence to ensure continuity and progression. Progress in Design and Technology can be characterised by an increase in knowledge, moving from familiar to unfamiliar concepts, meeting needs that demand more complex or difficult situations, and an increase in a child's own understanding of their learning.

In the early stages of developing capability, children should be able to:

- generate and develop ideas through talking about the purpose of their design
- reflect more on their ideas
- draw what they have made, recognise, and begin to use, suitable tools and to suggest improvements to their own models.

By the end of Key Stage 1, most children are able to:

- use a range of materials to design and make simple products
- select materials, tools and techniques and explain their choices
- understand simple mechanisms and structures
- measure, assemble, join and combine materials in a variety of ways using basic tools safely
- investigate and evaluate simple products, commenting on the main features.

By the end of Key Stage 2, most children are able to:

- use their knowledge and understanding of a range of materials, components and techniques to design and make quality products
- evaluate work as it develops and, if necessary, suggest alternative solutions
- produce designs and plans that demonstrate the stages involved in making a product, and list the tools and materials used
- measure, mark and cut accurately, and recognise hazards to themselves and others
- understand the use of electrical and mechanical systems and more complex structures

- gauge what is, or is not, working well in a product.

Planning

DT is planned, usually, as part of a cross curricular theme/topic unit. It is generally alternated with Art and Design each half term.

Mixed-age Classes

Where there are mixed-age classes, work in Design Technology is organised in cycles over a two-year period. Close monitoring of learning objectives and differentiation strategies of the individual units within plans is required to ensure that individuals and groups within the class can make the progress appropriate to their age, maturation and previous experience.

Health and Safety

When working with tools, equipment and materials in practical D T activities pupils are taught:

- about hazards, risks and risk control
- to recognise hazards, assess consequent risks and take steps to control the risks to themselves and others
- to use information to assess the immediate and cumulative risks
- to manage their environment to ensure the health and safety of themselves and others
- to explain the steps they take to control risks.

When teaching Design and Technology, Health and Safety issues should be taken into consideration.

- All equipment should be stored safely and returned to its correct storage place after use. Hacksaws should be turned inwards.
- Knife blades should be retracted before they are put away.
- Hardboard should be used to protect surfaces when using tools.
- An adult should always supervise children who are
- using tools.
- The correct procedures and techniques need to be shown to the children beforehand.
- The children and staff should wear protective clothing when working with paint, glue, modelling clay, or any other 'messy' substances.

Food Technology

Bullion Lane School recognises the importance of cooking and baking as part of the Technology Curriculum but is aware that certain children are allergic to various foodstuffs. Basic hygiene practices are observed, such as the children washing their hands before handling foodstuffs and tying back long hair. The area to be used is wiped clean with a cloth after the cooking/baking has taken place.

Classroom organisation is of the utmost importance for Food Technology lessons. All necessary equipment and ingredients should be in the immediate vicinity and prepared beforehand, ready for use.

The class teacher should exercise vigilant supervision of children when they use any potentially dangerous equipment.

Glue Guns

- When using glue guns, the children should be well supervised. Younger children, on their own, should not use the guns.
- Designate an area for using the glue gun. Only one child should be in the area using the gun at any one time. Keep all the other children well away.
- The item being glued should be left for a few minutes to cool.
- If a child should burn him/herself, the wound should be run under the cold tap for several minutes. If there is any doubt about the severity of the burn, the designated First Aider or the Head Teacher should be consulted.

Assessment, Recording and Reporting (See Appendix 1 for pro formas)

Assessment is based on a combination of teacher assessment and pupil self-assessment. Records are updated and this should be used to inform the annual report to parents and the end-of-key-stage assessments.

Assessment opportunities are identified in each unit of work. At the end of each unit teachers should make note of those pupils who achieve higher or less well than the expected level for their age.

Expectations

By the end of Key Stage 1, the performance of the great majority of the pupils should be within the range of levels 1 to 3. Most pupils are expected to achieve level 2.

By the end of Year 4, the performance of the great majority of pupils should be in the range of levels 1 to 4. Most pupils are expected to achieve level 3.

By the end of Key Stage 2, the performance of the great majority of the pupils should be within the range of levels 3 to 5. Most pupils are expected to achieve level 4.

Resources and Accommodation

An inventory of resources is available. It outlines Design and Technology materials available and the teachers' resources. Resources are shared and all staff, including visiting students, have equal access to them. The teachers' resources, replacement materials and shared resources are stored in the Arts Resource Room. The Arts Resource Room is available only to staff and Support Staff. It is locked and the key is kept above the door.

A selection of age-appropriate construction kits in regular use is stored in each classroom or shared between Year Groups.

It is the responsibility of the teachers and the Curriculum Team to review the use of resources and those that should be replaced or purchased. The Arts Team monitors the use of resources and organises the Arts Resource Room. Staff inform the team if any resources are damaged or need replacing and submit lists of any resources to be added to the existing stock. The Arts Team plans the purchase of resources each year based on the Technology budget for that year. The Technology budget reflects the degree of priority given to Technology in the School Development/Improvement Plan.

INSET Provision

INSET/CPD for DT will be provided in line with any priorities identified the School Improvement Plan.

Equal Opportunities

All teaching and non-teaching staff are responsible for ensuring that all pupils, irrespective of gender, ability, ethnic origin and social circumstances, have access to the whole curriculum, and

the opportunity to make the greatest progress possible in all areas of the curriculum, while at our school.

All children engage in Design and Technology activities using food, fabrics, construction materials and card. This policy ensures that certain aspects of Technology are not seen as more appropriate for boys or girls. Individual teachers consider carefully the groupings they have. These might depend on the experiences the children have had in their home environments.

Consideration of the technology of different cultures and times is included in planning.

Special Educational Needs

Two main areas where pupils with Special Educational Needs might encounter difficulty are communications and making things. Design and Technology is an opportunity for children to achieve in a practical subject, as they are encouraged to communicate in a different way (other than writing), for example by using a tape recorder or camera. Children who lack muscular control and co-ordination could have a problem in using some tools. Whenever possible, suitable tools are provided after consultation with Support Staff or an Occupational Therapist. Otherwise, tasks are adapted so that the child can participate. Sensitive grouping encourages shared expertise and this reduces difficulties in specific areas.

Links with Other Areas of The Curriculum

As well as making its own distinctive contribution to the school curriculum, Design and Technology contributes to the wider aims of Primary education.

English

With careful planning, Design and Technology tasks provide opportunities for children to develop and apply their literacy skills. Reading and writing skills are essential when collecting information and source material, making notes and following instructions. Discussion is an aspect of the Programmes of Study as children develop an understanding of different viewpoints and perspectives. Evaluating existing products requires children to articulate their ideas and to compare and contrast their views with those of other people. Good oral communication skills can be developed as the children collaborate in group activities.

Mathematics

Opportunities arise for children to apply their mathematical skills through choosing and using appropriate ways of calculating measurements and distances. The children need to read and interpret scales, collect, represent and interpret data for a given task and use fractions and percentages to describe or calculate quantities and proportions.

ICT

The use of ICT can help children's learning in Design and Technology by providing additional equipment and tools to help them produce and manipulate images and experiment with ideas and possibilities for the creative use of materials and processes. Through the computer, images can be modified freely and rapidly using a range of effects. Control technology can be enhanced by the use of appropriate software. There are many possibilities for sharing work with others, such as sending work via e-mail or developing a school gallery on a website.

Science

Children are able to use and develop their scientific knowledge and understanding when working with a range of materials, for example when working on electrical circuits and with food products.

Art and Design

There are close links between these two subjects. Children can use their creative skills, knowledge and understanding through the use of pattern, texture and colour. The opportunities to plan and design are important in both subjects, in association with the development of skills for working with tools, equipment, materials and components.

Spiritual, Moral, Social and Cultural Development Through Design and Technology

Design and Technology provides opportunities to promote the following :

Spiritual development: Through helping pupils to recognise their own creativity and the creativity of others by finding solutions to problems and through recognising the conflicts between material and non-material needs.

Moral development: Through helping pupils to reflect how technology affects the environment, so that they can make informed choices when designing and making. In discussion, the children can learn to appreciate the moral dilemmas posed by introducing new technologies within different value systems, and the advantages and disadvantages of new technology to local, national and global communities.

Social development: Through helping pupils to recognise the need to consider the views of others when discussing design ideas, and by working on collaborative projects, making the most of different strengths and interests within a team.

Cultural development: Through exploring the product's contribution to the quality of life within different cultures, and through valuing and reflecting on the responses of people from other cultures to design solutions.

Impact

Evaluation is carried out to improve the teaching and learning of Design Technology within Bullion Lane. All staff, teaching and non-teaching, appraise the curriculum provision made for Design Technology within the school, in order that pupils make the greatest possible progress.

Evaluation includes a regular review of the content of the Design Technology Curriculum to ensure that National Curriculum requirements are being fulfilled. This involves considering the coverage of Programmes of Study at each Key Stage. Pupils' progress and performance is judged, taking account of factors that might influence this, such as teaching methods, resources, Schemes of Work and accommodation. The organisation of the Design Technology Curriculum and teaching styles are evaluated regularly. The effectiveness of any INSET for Design Technology provided internally or by an external agency is assessed.

Evaluation can be by a number of methods, including: the assessment of pupils' work and achievements; the analysis of teachers' planning; discussion amongst groups of staff or all staff; classroom observation, and external inspection and advice.

This policy will be reviewed every 2 years.

Next review date: February 2024