Euxton Church of England Primary School
Mathematics Policy

Mission Statement

Within the framework of a Christian foundation and community, we intend that each child should progress as far as possible in gaining the knowledge, skills and attitudes essential for a balanced life whereby choices are made according to sound critical judgement. We would wish each child to gain a sense of achievement and develop to their potential.

Introduction

Mathematics is important in everyday life. It is integral to all aspects of life and with this in mind we endeavour to ensure that children develop a healthy and enthusiastic attitude towards mathematics that will stay with them. We want children to be curious about new maths concepts and be able to adapt and use numbers with confidence. This policy outlines what we are aiming to achieve in respect of pupils' mathematical education. It also describes our agreed approach to the planning, delivery and assessment of the mathematics curriculum.

Aims and Objectives

Mathematics helps children to make sense of the world around them through developing their ability to calculate, to reason and to solve problems. It enables children to understand and appreciate relationships and pattern in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

At Euxton C of E Primary School our aim is for every child to:

- develop a positive attitude to mathematics as an interesting and attractive subject in which all children gain some success and pleasure;
- develop mathematical understanding through systematic direct teaching of appropriate learning objectives;
- encourage the effective use of mathematics as a tool in a wide range of activities within school and, subsequently, adult life;
- develop an ability in the children to express themselves fluently,
- to talk about the subject with assurance, using correct mathematical language and vocabulary;
- develop an appreciation of relationships within mathematics;
- develop ability to think clearly and logically with independence of thought and flexibility of mind;

- develop an appreciation of creative aspects of mathematics and awareness of its aesthetic appeal;
- develop mathematical skills and knowledge and quick recall of basic facts

Mathematics curriculum

Mathematics is a core subject in the National Curriculum, and we use the Mathematics Programmes of Study: Key Stages 1 and 2 National Curriculum in England (2013) and the Mathematics Planning National Curriculum documentation - Lancashire County Council (2014) as the basis for implementing the statutory requirements of the programme of study for mathematics. We carry out the curriculum planning in Mathematics in line with the structures and recommendations outlined in the LCC medium term planning documentation, as well as through opportunities in cross-curricular activities. Our weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught.

Teaching and learning style

At Euxton C of E Primary School we use a variety of teaching styles to cater for the different learning styles of pupils in mathematics lessons.

Our principal aim is to develop children's knowledge, skills, and understanding in mathematics. We do this through a daily lesson that consists of both whole-class and group teaching as well as opportunities to apply skills independently.

During these lessons we encourage children to ask as well as answer mathematical questions. They have the opportunity to use a wide range of resources such as number lines, number squares, digit cards and small apparatus to support their work. Children use ICT in mathematics lessons where it will enhance their learning, as in modelling ideas and methods. Although the programmes of study of the National Curriculum (2013) are organised into distinct domains, we believe as the National Curriculum states 'that pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasing sophisticated problems' (DFE, 2013:3). With this at the forefront of our teaching we ensure that using and applying is integrated into planning and teaching.

In all classes there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies – through whole class teaching with mixed ability groups, differentiated group work and organising the children to work in pairs on open-ended problems or games.

Teaching assistants also provide appropriate support to individuals or to groups of pupils. Teaching assistants within Euxton C of E Primary School are viewed as an important 'asset' to the school and, as such, are appropriately involved in the planning and delivery of the mathematics curriculum. Their knowledge, skills and understanding is updated through involvement in school-based and LA led INSET.

The Foundation Stage

Work undertaken within the Early Years Foundation Stage (EYFS) is guided by the requirements and recommendations set out in the Revised Statutory Framework for the EYFS

(2014) and the Development Matters in the EYFS (2014). We give all the children ample opportunity to develop their understanding of mathematics. We aim to do this through varied activities that allow them to use, enjoy, explore, practise and talk confidently about mathematics.

Contribution of Mathematics to teaching in other curriculum areas

The skills that children develop in mathematics are linked to, and applied in, every subject of our curriculum.

English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. English contributes significantly to the teaching of mathematics in our school. Children in the Foundation Stage develop their understanding of number, pattern, shape and space by talking about these areas with adults and other children. Children in Key Stage 1 meet stories and rhymes that rely on counting and sequencing. Children in Key Stage 2 are encouraged to read and interpret problems in order to identify the mathematics involved. They explain and present their work to others during plenary sessions and they communicate mathematically through the developing use of precise mathematical language.

Computing

The effective use of ICT can enhance the teaching and learning of mathematics when used appropriately. When considering its use, we take into account the following points:

- ICT should enhance good mathematics teaching. It should be used in lessons only if it supports good practice in teaching mathematics.
- Any decision about using ICT in a particular lesson or sequence of lessons must be directly related to the teaching and learning objectives for those lessons.
- ICT should be used if the teacher and/or the children can achieve something more effectively with it than without it.

Science

Almost every scientific investigation or experiment is likely to require one or more of the mathematical skills of classifying, counting, measuring, calculating, estimating and recording in tables and graphs. In science pupils will order numbers, including decimals, calculate simple means and percentages, use negative numbers when taking temperatures, decide whether it is more appropriate to use a line graph or bar chart, and plot, interpret and predict from graphs.

Art, Design and Technology

Measurements are often needed in art and design and technology. Many patterns and constructions are based on spatial ideas and properties of shapes, including symmetry. Designs may need enlarging or reducing, introducing ideas of multiplication and ratio. When food is prepared a great deal of measurement occurs, including working out times and calculating cost; this may not be straightforward if only part of a packet of ingredients has been used.

History, Geography and Religious Education

In history and geography children will collect data by counting and measuring and make use of measurements of many kinds. The study of maps includes the use of co-ordinates and

ideas of angle, direction, position, scale and ratio. The pattern of the days of the week, the calendar and recurring annual festivals all have a mathematical basis. For older children historical ideas require understanding of the passage of time, which can be illustrated on a time line, similar to the number line that they already know.

Physical Education and Music

Athletic activities require measurement of height, distance and time, while ideas of counting, time, symmetry, movement, position and direction are used extensively in music, dance, gymnastics and ball games.

Spiritual, moral, social and cultural development

Mathematics contributes to the teaching of personal, social, health, spiritual education, and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together, gives them a chance to discuss their ideas and respect each other's views.

Teaching Mathematics to children with special needs

Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Teachers provide learning opportunities matched to the needs of children with learning difficulties. Work in Mathematics takes into account the targets set for individual children in their Individual Education Plans (IEPs). When additional support staff are available to support groups or individual children they work collaboratively with the class teacher. Within the daily mathematics lesson, teachers not only provide activities to support children who find mathematics difficult but also activities that provide appropriate challenges for children who are high achievers in mathematics.

Teaching Mathematics to Children with AGT Provision

In our school a child who is identified as being gifted in Mathematics will be expected to be working above age related expectations. They will understand and apply new concepts quickly and will make connections between the concepts they have already learned. They will be able to communicate their reasoning and justify their methods. They will think logically, seeing mathematical relationships and identifying patterns easily with this being evident through problem solving and investigative work. Pupils may show extra curiosity about mathematics and show ability to maintain concentration and persist in seeking solutions. The medium and short term planning provides opportunities for personalised learning to take place. Challenges are added to daily tasks, which enables high ability children in mathematics to use and apply skills in problem solving activities.

Assessment and recording

Teacher assessment is an ongoing process. Assessments are made in order that all children can move forward in their learning. Individual targets are given and these are discussed with parents at the twice-yearly parents' evenings. The annual report to parents, at the end of the academic year, incorporates a comment about all areas of mathematics. The parents of Y2 and Y6 pupils will also receive the results of standard attainment tests.

Teacher assessments are made during and at the end of each year to assess whether children are working in line with age-related expectations; these inform planning, are recorded in the Assessment files and shared with next teachers and parents.

Monitoring and Reviewing

Monitoring of the standards of children's work and of quality of teaching in mathematics is the responsibility of the headteacher and the subject leader supported by the link governor. The work of the subject leader also involves supporting colleagues in the teaching of mathematics, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school.

Resources

There is a range of resources to support the teaching of mathematics across the school. Staff are encouraged to use practical and visual models to support children's learning in mathematics. All classrooms have a wide range of appropriate practical apparatus. A range of audio visual aids are also available and a range of software is available to support mathematics work.

Reviewed by: M Ash
Date: February 2017