

Mathematics Policy

Aims and objectives

Mathematics teaches us how to make sense of the world around us through developing a child's 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.

The aims of mathematics are:

- to promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion;
- to promote confidence and competence with numbers and the number system;
- to develop the ability to solve problems through decision-making and reasoning in a range of contexts;
- to develop a practical understanding of the ways in which information is gathered and presented;
- to explore features of shape and space, and develop measuring skills in a range of contexts;
- to understand the importance of mathematics in everyday life.

Teaching and learning style

The school uses a variety of teaching and learning styles 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 has a high proportion of whole-class and group-direct teaching. 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, Numicon, 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. Wherever possible, we encourage the children to use and apply their learning in everyday situations.

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 – in some lessons through differentiated group work, gifted and talented pupils and in other lessons by organising the children to work in pairs on open-ended problems or games. We use classroom assistants to support some children and to ensure that work is matched to the needs of individuals.

Mathematics curriculum planning

Mathematics is a core subject in the National Curriculum 2014, and we use medium term plans written by the Lancashire Maths Team as the basis for implementing the statutory requirements of the programme of study for mathematics. The medium-term mathematics plans give details of the main teaching objectives for each term and define what we teach. They ensure progression in learning and an appropriate balance and distribution of work across each term.

We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term).

It is the class teacher who completes the weekly plans for the teaching of mathematics. These weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught. The weekly plans will be displayed in the classrooms. Evaluations are carried out at the end of the lesson/week to inform future planning.

Teachers ensure the following cycle is embedded in their practice:



This places 'using and applying' at the heart of the cycle. Teachers provide weekly opportunities for children to use and apply skills taught and practised.

The Foundation Stage

In the EYFS, teachers follow the revised Statutory Framework for the Early Years Foundation Stage 2012. This outlines the knowledge, skills, understanding and attitudes children will need in order to achieve the Early Learning Goals in Mathematics. These goals are intended to be achieved by most children by the end of the Reception Year.

In the Early Years, staff provide activities and experiences for children to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems and to describe simple shapes, spaces and measures.

The children learn through planned, purposeful play experiences and through a mix of adult-led and child-initiated activity.

Contribution of mathematics to teaching in other curriculum areas

English

Mathematics contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, we encourage children to read and interpret problems in order to identify the mathematics involved. The children explain and present their work to others during plenary sessions. Younger children enjoy stories and rhyme that rely on counting and sequencing. Older children encounter mathematical vocabulary, graphs and charts when using non-fiction texts.

Information and communication technology (ICT)

Children use and apply mathematics in a variety of ways when solving problems using ICT. Younger children use ICT to communicate results with appropriate mathematical symbols. Older children use it to produce graphs and tables when explaining their results or when creating repeating patterns, such as tessellations. When working on control, children use standard and non-standard measures for distance and angle. They use simulations to identify patterns and relationships. There is a range of programmes to support the learning of mathematics.

Personal, social and health education (PSHE) and citizenship

Mathematics contributes to the teaching of personal, social and health 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 and respect each other's views. We present older children with real-life situations in their work on the spending of money.

Spiritual, moral, social and cultural development

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results.

Teaching mathematics to children with special needs

We teach mathematics to all children, whatever their ability. It is part of the school curriculum policy to provide a broad and balanced education to all children. We provide learning opportunities that are 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).

Assessment and recording

We assess children's work in mathematics from three aspects (long-term, short-term and medium-term). We make short-term assessments which we use to help us adjust our daily plans. These short-term assessments are closely matched to the teaching objectives.

We make long-term assessments towards the end of the school year, and we use these to assess progress against school and national targets. During pupil progress meetings we can then set targets for the next school year and make a summary of each child's progress before discussing it with parents. We pass this

information on to the next teacher at the end of the year, so that s/he can plan for the new school year. We make the long-term assessments with the help of end-of-year tests and teacher assessments. We use the national tests for children in Year 2 and Year 6, plus the optional national tests for children at the end of Years 3, 4 and 5.

Resources

There is a range of resources to support the teaching of mathematics across the school. All classrooms have a wide range of appropriate small apparatus. Mathematical dictionaries are available in all classrooms. Calculators and a range of audio visual aids are available from the central storage area. A range of software is available to support work with the computers and IWB resources.

Monitoring and review

Monitoring of the standards of children's work and of the quality of teaching in mathematics is the responsibility of the Headteacher and the Maths Subject Leader. The work of the Maths 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. The headteacher allocates regular time to staff to review samples of children's work and undertake lesson observations of mathematics teaching across the school.