



## MATHEMATICS POLICY

These Policy and Procedures follow national guidance and build on good practice.

### 1. Why we teach maths

Mathematics is a life skill, critical to the development of skills in science, technology, engineering, and necessary for financial literacy and most forms of employment. It teaches us how to make sense of the world around us through developing an ability to calculate, to reason and to solve problems. It enables us to understand and appreciate relationships and pattern in both number and space in our everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many people to the development and application of mathematics.

### 2. We aim for all children to:

- Develop **fluency** in the fundamentals of mathematics, through varied and increasingly complex problem solving. We aim for all children to develop conceptual understanding, and recall and apply knowledge rapidly and accurately.
- Be able to **reason mathematically** by following a line of enquiry, inferring relationships and generalisations and developing an argument, justification or proof using mathematical argument.
- **Solve problems** by **applying their knowledge and understanding** to a variety of situations with increasing sophistication and efficiency, breaking down problems into a series of simpler steps and persevering to seek solutions.
- Be able to **apply** their mathematical knowledge to **other subject** areas.

### 3. How we teach maths

**3.1** 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. Children are often taught in differentiated groups to ensure they are appropriately challenged. 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 and teachers use ICT in mathematics lessons where it will enhance their learning, and to assist with modeling ideas and methods. Wherever possible, we encourage the children to use and apply their learning in everyday situations.

**3.2** 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. Throughout lessons a range of strategies are used to ensure appropriate leveled learning. Children are asked to undertake independent work but other strategies are also utilised. In some lessons group work is undertaken, and in other lessons, children are organised to work in pairs on open-ended problems or games. We use classroom assistants to support some children, or provide additional challenge and to ensure that work is matched to the needs of individuals.

**3.3** In KS2 children are set a weekly homework task, and in KS1 a fortnightly homework task, in order to strengthen their learning in mathematics. This task either directly links with the current unit of learning, or is designed to practice ongoing skills, such as the learning of times tables facts.

#### **4. How we enrich and resource the teaching of maths**

- 4.1** Mathematics is a core subject in the National Curriculum and we use the National Curriculum framework as the basis for implementing the statutory requirements of the programme of study for mathematics.
- 4.2** We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). The national Numeracy Strategy Framework for Teaching gives a detailed outline of what we teach in the long term, while our yearly teaching programme identifies the key objectives in mathematics that we teach in each year.
- 4.3** Our medium-term mathematics plans, which are adopted from the Framework and give details of the main teaching objectives for each term, define what we teach. They ensure an appropriate balance and distribution of work across each term.
- 4.4** 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 class teacher keeps these individual plans, and the class teacher and subject leader can discuss these on an informal basis. These plans are regularly checked and collected by the Phase Leader.
- 4.5** The teaching of mathematics is very well resourced, and regular audits ensure that all materials are in good order. The maths coordinator keeps up to date with the latest materials and teaching ideas, and disseminates these to all staff on a regular basis. There is a range of resources to support the teaching of mathematics across the school. All classrooms have wide range of appropriate small apparatus. Mathematical dictionaries are available in school. The library contains a range of books to support children's individual research. A range of software is available to support work with the computers. The Abacus mathematics scheme and a range of books from other schemes, are used to support the National Curriculum.
- 4.6** Often the teaching of maths is enhanced through the use of drama, visitors to school, the outdoor environment and through a cross curricular approach.

#### **5. How we meet the needs of all children**

It is part of the school curriculum policy to provide a broad and balanced education to all children. We enjoy teaching mathematics to all children, whatever their ability. We provide learning opportunities that are matched to the needs of all children. Work in mathematics takes into account the targets set for individual children. If children need additional support or challenge in a particular area of mathematics, this is provided by working within a small group supported by an adult or by the use of specific resources.

#### **6. How we assess the standards in maths**

- 6.1** 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.
- 6.2** We make medium-term assessments to measure progress against the key objectives, and to help us plan the next unit of work. We use termly assessments as a way of recording children's

progress in objectives covered across that specific term.

- 6.3** We make long-term assessments towards the end of the school year, and we use these to assess progress against school and national targets. 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 6, plus the optional national tests for children at the end of years 3, 4, and 5. We also make annual assessments of children's progress measured against the level descriptions of the National Curriculum.

## **7. How we monitor and evaluate the teaching and learning of maths**

- 7.1** Monitoring of the standards of children's work and of the quality teaching in mathematics is the responsibility of the mathematics subject leader. The work of the mathematics 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.

- 7.2** The mathematics subject leader gives the Headteacher an annual summary in which s/he evaluates strengths and weaknesses in the subject and indicates areas for further improvement. The head teacher allocates regular management time to the mathematics subject leader so that s/he can review samples of children's work and undertake lesson observations of mathematics teaching across the school. A named member of the school's governing body is briefed to oversee the teaching of numeracy. This governor meets regularly with the subject leader to review progress.

## **8. How we promote cross curricular links in maths**

### **8.1 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.

### **8.2 Science**

During science lessons, children are able to use and apply their data handling skills when creating tables and graphs of scientific measurements. Whole class discussion of data also highlights the importance of clear recording of information. Children are also able to use a wide range of measuring devices in a real-life context. Children are required to read the scales on Newton meters, measuring cylinders, weighing scales and a variety of other instruments.

### **8.3 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.

#### **8.4 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.

#### **8.5 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 in different ways so that they work together, and we give them opportunities to discuss their ideas and results. The study of famous mathematicians around the world contributes to the cultural development of our children

#### **9. How we celebrate achievements in maths**

Mathematical skills are regarded as essential, and the subject is given a high priority and status throughout the school. From KS2 children are encouraged to earn a merit card from knowing all of their times tables and associated division facts. Their merit card is then presented to them in assembly. Children are praised appropriately within lessons for their hard work, perseverance and abilities. Teachers regularly reward efforts with stickers, certificates, postcards home, mentions in assembly, Golden achievements awards and individual comments in children's books.

#### **10. Equality statement**

The governors and staff are committed to providing the full range of opportunities for all pupils, regardless of gender, disability, ethnicity, social, cultural or religious background. All pupils have access to the curriculum, and the right to a learning environment, which dispels ignorance, prejudice or stereotyping.

#### **11. Review**

This policy was reviewed and agreed by Governors and staff in the Autumn term of 2018.

This policy will be reviewed in the Autumn term of 2020

