



St Mark's Elm Tree Primary School

Mathematics Policy

**Approved by Governors
Reviewed September 2016
To be reviewed September 2017**

Policy on Mathematics

Aims of the School:

At St. Mark's, Elm Tree Church of England Voluntary Aided School we:

- ***Build Christian values into the ethos and teaching and enable children to make their own informed choices about their faith;***
- ***Strive to develop the full potential of all our pupils;***
- ***Give a high priority to the spiritual development of all in the school community;***
- ***Place collective worship at the centre of our daily life;***
- ***Welcome all children, whatever their parents' beliefs, attaching a high priority to strong links between school, home and parish.***

Our school is a place where every person has the right to be themselves and to belong and learn in a safe and happy environment. Everyone at our school is equal and treats each other with respect and kindness. We do not tolerate bullying.

1 Aims and objectives

- 1.1 Mathematics teaches children how to make sense of the world around them through developing their ability to calculate, reason and solve problems. It enables children to understand relationships and patterns 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.
- 1.2 Our objectives in the teaching of mathematics are:
- to promote enjoyment of learning through practical activity, exploration and discussion.
 - to promote confidence and competence with numbers and the number system.
 - to develop fluency by a clear, consistent approach to teaching and learning using the school's agreed Calculation Policy.
 - 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 develop measuring skills in a range of contexts.
 - to help children understand the importance of mathematics in everyday life.
 - to develop the cross-curricular use of mathematics in other subjects.

2 Teaching and learning style

- 2.1 The school uses a variety of teaching and learning styles in mathematics. Our principal aim is to develop children's fluency, reasoning and problem solving. During our daily 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. Mathematical dictionaries are available in all classrooms. ICT is used in mathematics lessons for modelling ideas and methods. Wherever possible, we encourage the children to apply their learning to everyday situations.
- 2.2 In all classes, children have a wide range of mathematical abilities. 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, and in other lessons by organising the children

to work in pairs on open-ended problems or games. We use teaching assistants to support some children, and to ensure that work is matched to the needs of individuals.

3 Mathematics curriculum planning

- 3.1 Mathematics is a core subject in the National Curriculum, and we use this as the basis for implementing the statutory requirements of the programme of study for mathematics.
- 3.2 We carry out the curriculum planning in mathematics in three phases (long-term, medium-term and short-term). The National Curriculum gives a detailed outline of what we teach in the long term, while our yearly teaching programme identifies the key objectives we teach to in each year.
- 3.3 Our medium-term mathematics plans, which are adopted from the National Curriculum (and linked to our assessment), 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. These plans are kept and reviewed by the subject leader.
- 3.4 It is the class teacher who completes the weekly plans for the teaching of mathematics. These weekly plans list the specific learning objectives and expected outcomes for each lesson, and give details of how the lessons are to be taught. The class teacher keeps these individual plans, and saves them on the school network. The class teacher and subject leader often discuss them on an informal basis.
- 3.5 We plan the activities in mathematics so that they build on the children's prior learning. While we give children of all abilities the opportunity to develop their fluency, reasoning and problem solving we also plan progression into the scheme of work, so that there is an increasing challenge for the children as they move up through the school.

4 The Foundation Stage

- 4.1 We teach mathematics in our nursery and reception classes. We relate the mathematical aspects of the children's work to the objectives set out in the Early Learning Goals, which underpin the curriculum planning for children aged three to five. We give all the children ample opportunity to develop their understanding of number, measurement, pattern, shape and space, through varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics.

5 Contribution of mathematics to teaching in other curriculum areas

5.1 English

The teaching of mathematics contributes significantly to children's understanding of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, in mathematics lessons, we expect children to read and interpret problems, in order to identify the mathematics involved. We actively encourage mathematical discussions. They are also improving their command of English when they explain and present their work to others during the lessons. In English lessons, too, maths can contribute: younger children enjoy stories and rhyme that rely on counting and sequencing, while older children encounter mathematical vocabulary, graphs and charts when reading non-fiction texts. Spelling of key vocabulary is also included.

5.2 Personal, social and health education (PSHE) and citizenship (includes Financial understanding).

Mathematics contributes to the teaching of PSHE 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 mathematics work on the spending of money.

5.3 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. The study of famous mathematicians around the world contributes to the cultural development of our children.

6 Mathematics and Computing

6.1 Information and communication technology enhances the teaching of mathematics significantly, because ICT is particularly useful for mathematical tasks. It also offers ways of impacting on learning which are not possible with conventional methods. Teachers can use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. 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 can use both standard and non-standard measures for distance and angle. They can also use simulations to identify patterns and relationships. E-mail permits collaborative problem-solving.

7 Mathematics and inclusion

7.1 At our school, we teach mathematics to all children, whatever their ability and individual needs. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics teaching, we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs, those with disabilities, those with special gifts and talents and those learning English as an additional language, and we take all reasonable steps to achieve this. For further details, see separate policies: Special Educational Needs; Disability Discrimination; Able, Gifted and Talented Children; English as an Additional Language (EAL).

7.2 When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, and differentiation – so that we can take some additional or different action to enable the child to learn more effectively. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. This ensures that our teaching is matched to the child's needs.

7.3 Intervention may lead to the creation of Support Plan for children with special educational needs. This may include, as appropriate, specific targets relating to mathematics.

7.4 We enable all pupils to have access to the full range of activities involved in learning mathematics. Where children are to participate in activities outside the classroom (a 'maths trail', for example), we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

8 Assessment for learning

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

8.2 We make medium-term assessments to measure progress against the key objectives, and to help us plan the next unit of work. We use the class record of the key objectives as the recording format for this.

- 8.3 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 and carers. 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 informal tests and teacher assessments. We use the national tests for children in Year 2 and Year 6, plus informal tests for children at the end of Years 1, 3, 4 and 5. We also make annual assessments of children's progress measured against the level descriptions of the National Curriculum.
- 8.4 The mathematics subject leader scrutinises samples of children's work. This demonstrates the expected level of achievement in mathematics in each year of the school.
- 8.5 Older children are encouraged to make judgements about how they can improve their own and each other's work.

9 Resources

- 9.1 All classrooms have a mathematical display which includes: a number line, mathematical vocabulary, times table charts as well as a wide range of appropriate small apparatus. Mathematical dictionaries are available in all classrooms. Resources boxes are provided to support children in their learning. A range of software is available to support work with the computers.

10 Monitoring and review

- 10.1 The coordination and planning of the mathematics curriculum are the responsibility of the subject leader and SLT, who also:
- support colleagues in their teaching, by keeping informed about current developments in mathematics, and by providing a strategic lead and direction for this subject;
 - gives the headteacher an annual summary report in which s/he evaluates the strengths and weaknesses in mathematics, and indicates areas for further improvement;
 - uses specially allocated regular management time to review evidence of the children's work, and to observe mathematics lessons across the school.
- 10.2 The quality of teaching and learning in mathematics is monitored and evaluated by the headteacher as part of the school's agreed cycle of lesson observations.
- 10.3 A named member of the school's governing body is briefed to oversee the teaching of mathematics. This governor meets regularly with the subject leader to review progress.
- 10.4 This policy will be reviewed at least every two years.