MARSHBROOK FIRST SCHOOL
Mathematics Policy
January 2014

1 Aims

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 The aims of teaching 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 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.

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 knowledge, skills and understanding. 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. ICT is used in mathematics lessons for modelling ideas and methods, consolidating learning and sometimes to assess learning. Wherever possible we make cross-curricular links and 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 classroom 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 and we use the programme of study for mathematics from the National Curriculum and Early Years Foundation Stage as a basis for our planning.

3.2 The class teacher completes 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 the class teacher and subject leader often discuss them on an informal basis.

4 The Early Years Foundation Stage

4.1 We teach mathematics in our Early Years class. We relate the mathematical aspects of the children's work to the objectives set out in the Early Years Foundation Stage Framework, which underpin the curriculum planning for children aged birth 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 Calculation methods

5.1 We have a common calculations policy which is used across our collaboration of schools to ensure continuity. This policy shows individual methods for stages of progression that build to a compact, efficient method (standard method) for all four operations (See separate Calculations Policy).

6 Contribution of mathematics to teaching in other curriculum areas

6.1 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. They are also improving their command of English when they explain and present their work to others during plenary sessions. 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.

6.2 Personal, social and health education (PSHE) and citizenship

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.

6.3 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.

6.4 Other subjects

Where possible Mathematics is applied through other subjects and opportunities to apply skills are identified on key skills planning sheets e.g. presenting data, interpreting graphs and measuring in Science, use of pattern and symmetry in Art, calculating the passage of time in History.

7 Mathematics and ICT

7.1 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.

8 Mathematics and inclusion

8.1 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 those who are looked after and we take all reasonable steps to achieve this. For further details see separate policies: Special Educational Needs (including Gifted and Talented); Disability Equality Scheme; English as an Additional Language (EAL).

8.2 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, 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.

8.3 Intervention through School Action and School Action Plus will lead to the creation of an Individual Education Plan (IEP) for children with special educational needs. The IEP may include, as appropriate, specific targets relating to mathematics.

8.4 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.

9 Assessment for learning

9.1 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.

9.2 We make medium-term assessments to measure progress against the key objectives, and to help us plan the next unit of work. We use Assessing Pupil Progress (APP) materials to assess a range of pupils and moderate and standardise our judgements. Pupils are given individual targets which identify the next steps in their learning. These are shared with parents at termly parents' evenings. Termly assessments are recorded and analysed using our school tracking system.

9.3 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. Annual assessments of children's progress are measured against the level descriptions of the National Curriculum.

10 Resources

10.1 All classrooms have a wide range of appropriate apparatus and resources and a variety of additional resources are available in a central storage area. A range of software is available to support work with the computers.

11 Monitoring and review

11.1 Monitoring of the standards of children's work and of the quality of teaching in mathematics is the responsibility of the subject leader. The work of the subject leader also involves supporting colleagues in their teaching, being informed about current developments in the subject, and providing a strategic lead and direction for mathematics in the school. The subject leader gives the headteacher and governors an annual summary in which s/he evaluates strengths and weaknesses in the subject, and indicates areas for further improvement. The headteacher allocates management time to the subject leader so that s/he can review samples of children's work and undertake lesson observations of mathematics teaching across the school. There is a link governor for numeracy who meets regularly with the subject leader to review progress.

11.2 This policy will be reviewed at least every three years.