



*St. Saviour's Church, Coalpit Heath.*

## ***The Manor C of E Primary School***

### **Policy for Mathematics**

**Numeracy**

**Subject**

**Leader:**

Mrs L Lund

**Date:**

October 2010

**Approved:**

Headteacher

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Chair of Governors

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# The Manor Primary School

## Mathematics Policy

### 1 School Aims

We aim to offer the highest quality teaching of Mathematics throughout the school, providing children with a powerful set of tools to solve everyday problems. Mathematics teaches us how to make sense of the world around us through developing a child's ability to calculate, to reason and to work systematically and logically. 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. We will help children to recognise that Mathematics is not just a collection of skills, but an entire way of thinking.

### 2 Subject Aims

- 2.1 To ensure equal access to the mathematics curriculum for all children.
- 2.2 To provide opportunities for all children to develop mathematical skills at their own level and to recognise and support children with Special Educational Needs in Mathematics and challenge more able pupils.
- 2.3 To ensure all children have a positive attitude towards and enjoy Mathematics, and experience success in this subject.
- 2.4 To develop children's ability to think clearly and logically with confidence and flexibility.
- 2.5 To develop children's understanding of the number system and competence and confidence with the skills they need to manipulate numbers.
- 2.6 To develop children's awareness of pattern and their ability to work systematically.
- 2.7 To develop the ability to apply Mathematical skills and language across the curriculum and in everyday situations.
- 2.8 To promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion.
- 2.9 To develop the ability to solve problems through decision-making and reasoning in a range of contexts.
- 2.10 To develop a practical understanding of the ways in which information is gathered and presented.
- 2.11 To explore features of shape and space, and develop measuring skills in a range of contexts.
- 2.12 To understand the importance of mathematics in everyday life.

### 3 Teaching and learning

*We aim to provide effective teaching and learning through:*

- 3.1 A clear focus on mental and written calculation strategies, including the learning and application of facts and skills, through direct teaching, modelling and demonstration, varied questioning and linking of ideas.
- 3.2 Encouraging the involvement of all children throughout the lesson by effective use of open-ended questions, resources and differentiation.
- 3.3 Offering a variety of teaching methods and activities to cater for different learning styles, for example the use of open-ended challenges, games and practical work.
- 3.4 The use of guided learning, enabling the teacher to target a selected group of pupils with a shared need.
- 3.5 The provision of suitable learning opportunities for all children by matching the challenge of the task to the ability of the child.

- 3.6 Encouraging a range of approaches to Mathematics, individual and collaborative, to help children develop their own mathematical thinking and communication skills.
- 3.7 Encouraging children to develop their own methods to overcome difficulties.
- 3.8 Providing opportunities to learn through practical experimentation, use of apparatus and a wide range of materials before moving onto abstract concepts and calculations.
- 3.9 Ensuring teachers are aware of and make full use of classroom and shared resources, including ICT.
- 3.10 Modelling correct use of Mathematical vocabulary.
- 3.11 Providing the opportunity to use and apply Mathematics in practical tasks, real life problems, other curriculum areas, use of the indoor and outdoor environment, and within Mathematics itself.
- 3.12 Ensuring that grouping and classroom management provide equal opportunities for all.
- 3.13 Setting of appropriate homework to reinforce learning that has taken place in school.
- 3.14 Monitoring of teaching and learning by the SLT and through this the identification of areas for development.
- 3.15 The regular provision of relevant staff training.
- 3.16 Encouraging the active involvement of parents and governors through liaison and annual reports.

#### **4 Guidance:**

##### Curriculum

- 4.1 To implement the National Curriculum Programme of Study for years 1-6 through application of the National Numeracy Strategy and use of the Renewed National Numeracy Framework, developed through whole school and individual training.
- 4.2 To implement the Foundation Stage Curriculum Early Learning Goals for Mathematical Development in the Foundation Stage, and during transition into Year 1 as appropriate.
- 4.3 To make full use of LEA and in-school support to develop individual and whole school skills in the planning and delivery of Mathematics.

##### Planning

- 4.4 KS1 and KS2 teachers are to make use of the structure of the framework to guide planning: teachers annotate learning overviews to meet the needs of the class and ensure the teaching follows a sequence; time could be managed flexibly to ensure enough time is devoted to weaker areas. These annotated plans form the basis of medium-term planning.
- 4.5 FS teachers use guidance from the EYFS Early Learning Goals to provide opportunities for Mathematical Development across the areas of Numbers as Labels for Counting; Calculation; Shape, Space and Measures.
- 4.6 KS1 and KS2 teachers are to make use of the weekly planning format to plan the Daily Mathematics Lessons for each week, copies of this are to be saved electronically and given to other people as relevant (eg classroom assistants, supply teachers). FS stage planning will use an appropriate format to plan to meet expectations within pupils' areas of interest and themes.
- 4.7 To plan for children on the Code of Practice to receive appropriate levels of support, taking into account their IEPs and social needs.
- 4.8 To plan appropriately for different levels of ability within a group through differentiation.
- 4.9 To identify in plans groups of pupils needing additional support through (for example) guided sessions/ intervention.
- 4.10 To plan for individual, group and class needs using formative and summative assessment and by liaison with other teachers, SENCo and other agencies, where appropriate.
- 4.11 To make effective use of support materials provided (eg for booster/ SEN children)

##### School Organisation

- 4.12 Planning is carried out by class teachers and monitored by the SLT and subject leader.
- 4.13 There is a governor responsible for Numeracy.

## **5 Contribution of mathematics to teaching in other curriculum areas:**

### **5.1 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: children are encouraged to read and interpret problems in order to identify the mathematics involved; children present their findings to others during plenary sessions. Communication skills are developed through the explanation of methods, approaches and reasoning. 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.

### **5.2 Information and communication technology (ICT)**

Children use and apply mathematics in a variety of ways when solving problems using ICT. Children use ICT to produce graphs and tables when explaining their results. When working on control, children use standard and non-standard measures for distance and angle. They use simulations to identify patterns and relationships. The interactive whiteboard also enables the teacher to enhance maths lessons with a range of images and teaching resources.

### **5.3 Science**

Science provides many opportunities to include mathematics through the analysis and interpretation of data and presenting data via tables and graphs from evidence gained. Opportunities to make careful and accurate measurements are an important aspect of Science.

### **5.4 Personal, Social and Health Education (PSHE) and citizenship - SEAL**

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. Older children are presented with real-life situations related to budgeting and the spending of money to promote economic awareness.

### **5.5 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. Children are grouped to enable them to work together and to discuss their ideas and results.

### **5.6 History and Geography**

These subjects allow children to use mathematics via information about dates, times and data (for example about weather, populations, measures - eg mountains; rivers). This information can be interpreted or collected and represented in a variety of ways.

### **5.7 Art and PE**

These subjects provide very good links with shape and space and pattern and are used accordingly.

### **5.8 Modern Foreign Languages**

The children are taught to count in other languages.

## **6 Teaching mathematics to children with special educational needs**

- 6.1 Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Therefore, it is taught to all children, whatever their ability. Through our mathematics teaching we provide learning opportunities that enable all pupils to make progress. This is achieved by setting suitable learning challenges and responding to each child's different needs. Assessment against the National Curriculum levels allows us to consider each child's attainment and progress against expected levels.
- 6.2 When progress falls significantly outside the expected range, the child may have special educational needs – both the lower and higher ability children. 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. This ensures that our teaching is matched to the child's needs.
- 6.3 Intervention through School Action and School Action Plus will lead to the creation of an Individual Education Plans (IEP) for children with special educational needs. The IEP may include, as appropriate, specific targets relating to mathematics.
- 6.4 Intervention includes programmes such as Springboard (for KS2), Wave 3 (for all), Overcoming Barriers (across the school) and Max's Marvellous Maths (Yr 1)
- 6.5 Children who perform very well in maths are identified and put on the school's G&T register and are catered for accordingly, using tasks which require higher-level thinking such as problem solving approaches.
- 6.6 Pupils should have access to the full range of activities involved in learning mathematics. Where children are to participate in activities outside the classroom, for example, a maths trail, we carry out a risk assessment prior to the activity to ensure that the activity is safe and appropriate for all pupils.

## **7 Assessment and reporting**

### **To be read in conjunction with assessment and marking policies.**

- 7.1 Formative assessment using Assessment for Learning strategies is carried out daily to inform teachers of pupil understanding and progress in lessons.
- 7.2 The weekly planning format contains a review section for short-term assessment of the weekly objectives.
- 7.3 The teaching sequence allows for time for teachers to check learning within each unit through application of skills towards the end of the unit.
- 7.4 From November 2010, APP grids to track the work of pupils in each class are used to support teacher assessment of National Curriculum levels.
- 7.5 Termly target setting should include targets relating to the curriculum objectives for Numeracy – these can be group targets for the majority of children. Children on stages SA+ and above on the Code of Practice for Numeracy will have individual targets on their IEPs.
- 7.6 Regular scrutiny of work and planning will be carried out by the SLT – time will be given at staff meetings for levelling and moderation of pupils' work in Numeracy.
- 7.7 The use of termly tracking data in each class will provide information about pupils' current teacher assessment levels in Numeracy.
- 7.8 In the Foundation Stage, pupils will be assessed using the Foundation Stage Profile, against Early Learning Goals. Their progress against these levels is reported at the end of the year.
- 7.9 A summary of pupil progress is recorded at the end of each year to inform parents.

- 7.10 Summative assessments are made using national test materials for years 2-6. Analysis of these is used to identify gaps in teaching and learning to inform planning for the next academic year.
- 7.11 All assessments are used to inform target setting and planning for each cohort.

## **8 Recording and Marking**

- 8.1 It should be clear in workbooks what the purpose of any work is; in KS2 children are to title their work according to the learning objective (WALT).
- 8.2 Marking is positive and comments must relate to the learning objective, providing constructive feedback to the pupils about what they need to do to improve.
- 8.3 Marking may be carried out by any adult working with the class or by pupils as part of peer- and self-evaluation.

## **9 Resources**

- 9.1 Each class has a set of resources appropriate to that year group.
- 9.2 There is a store of clearly labelled central resources.
- 9.3 The shared drive on the computer network is used to store a range of resources, including suitable interactive software.
- 9.4 All resources must be returned to the correct place after use, keeping them tidy and accessible.

## **10 Monitoring and review**

Monitoring of the standards of children's work and of the quality of teaching in mathematics is the responsibility of the Numeracy Subject Leader in conjunction with the Senior Leadership Team. The work of the Numeracy 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 Numeracy Subject Leader provides the head teacher with 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 planning and 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.

## **11 Time Allocation**

- 11.1 Every Year group is to have a Daily Mathematics Lesson from 45 minutes at the start of KS1 to 1 hour by KS2. The timing and structure of this may vary for Reception classes, particularly early in the year. National guidance recommends KS1 time allocation is 3 hours 45 minutes to 5 hours per week. KS2 allocation is from 4 hours 10 minutes – 5 hours 50 minutes per week.
- 11.2 Additional mental maths sessions and tests may take place outside of the Daily Maths Lesson.
- 11.3 It is expected that teachers take advantage of any opportunities to use Maths within other areas of the curriculum.