

Cavendish Primary School



Maths Policy

Spring 2007

Review date: Spring 2010

Introduction

This document is a statement of the aims, principles and strategies for the teaching and learning of Mathematics at Cavendish School. It has been developed through a process of consultation with school staff and governors.

Mathematics at Cavendish

The special power of mathematics lies in its capacity not just to describe and explain but also to predict – to suggest possible answers to problems. It is not only taught because it is useful but it should also be a source of delight and wonder. As a school we want to enable children to see that mathematics provides a way of viewing and making sense of the world. It can be used to analyse and communicate ideas and information effectively and to tackle a range of practical tasks and real life problems.

Aims

Our aims in teaching Mathematics are that the children will:

- Enjoy the subject and study it with a sense of confidence and achievement.
- Achieve a high standard in numeracy and gain a secure foundation of knowledge, skills and concepts
- Use and apply these skills with confidence and understanding in real life problems and within mathematics itself
- Develop persistence through sustained work over a period of time
- Develop an ability to think logically and to use mathematical language with confidence and understanding
- Have an appreciation of mathematical pattern and relationships
- Have a positive attitude towards mathematics as an interesting and creative subject.
- Gain experience of working independently, investigating their own ideas and developing their own mental and written methods.

Implementation

Mathematics is a National Curriculum core subject. In the Primary Framework for Mathematics (2006) the subject is divided into seven strands of learning:

- Using and applying mathematics
- Counting and understanding number
- Knowing and using number facts
- Calculating
- Understanding shape

- Measuring
- Handling data

Opportunities for using and applying mathematics exist throughout all the strands.

The school will follow the requirements of the National Curriculum as set out in:

The National Curriculum Handbook for primary teachers in England (DfEE, 1999)

And will follow the guidance contained in:

The National Numeracy Strategy for teaching mathematics from Reception to Year 6 (DfEE, 1999)

Primary Framework for Literacy and mathematics (DfES 2006)

Curriculum Guidance for the Foundation Stage (DfES 2000)

Teaching and Learning

The use and application of mathematical principles underpins the whole of mathematical teaching and learning. Opportunities are given for pupils to apply their knowledge to a wide range of real life situations. They need to be able to choose appropriate equipment and methods for the task and to communicate and justify their findings in a manner appropriate to their age and ability, showing increasing concern for clarity and accuracy of meaning. The children will record their work in appropriate ways for a variety of purposes, with a high emphasis on the quality of presentation.

At the Foundation Stage:

Teaching and learning promotes social skills and develops the mathematical understanding of young children through stories, songs, rhymes and finger games, board games, sand and water, construction on a large and small scale, imaginative play, outdoor play, cooking and shopping, 2 and 3-D creative work with a range of materials and by observing numbers and patterns in the environment and in daily routines. Practical equipment is used to support the teaching and learning of number calculation.

By the end of Reception the children should be prepared for the dedicated mathematics lesson of about 45 minutes.

Key Stages One and Two

Mathematics lessons broadly follow the National Numeracy Strategy, with a structure of:

- An oral and mental starter for 10-15 minutes
- The main activity for about 30 minutes in KS1 and 40 minutes in KS2

- The plenary session for approximately 10 minutes

From time to time, this structure may be adapted to reflect the needs of the class.

The teacher will give demonstrations and explanations, with an emphasis on the use of appropriate mathematical language.

Mental calculation is a key feature, with children being taught a range of strategies to work out answers as well as learning the quick recall of simple mathematical facts.

Teaching is interactive, supported by practical equipment when appropriate and may also involve:

- Whole class and group discussions
- Practice to consolidate specific skills
- Problem solving and investigational activities in order to learn how to break down a problem
- Practical activities
- Mathematical games and puzzles

Teaching Assistants support learning in Mathematics by:

- giving focused support to individuals and small groups
- delivering targeted intervention programmes
- supporting differentiation within the classroom
- preparing and managing resources
- supporting assessment

Planning

At present, medium- term plans are based on the objectives contained in the *Framework for teaching mathematics*.

Weekly planning is completed using a proforma in line with the recommendations of the National Numeracy Strategy. Unit plans published by the Numeracy Strategy may be used for short term planning.

School planning proformas are saved on the shared server.

Over the next eighteen months, the numeracy coordinator will develop a planning model, in line with the recommendations of the Primary Framework.

Assessment

At Cavendish Primary School assessment is an integral part of the teaching process. Assessment is used to inform planning and to facilitate differentiation. The assessment of children's work is on-going to ensure that understanding is being achieved and that progress is being made.

Feedback is given to the children as soon as possible, and marking work will be guided by the school's **Marking and Feedback Policy**.

- This aims to encourage and to give guidance for future work.
- Ticks and written comments are clear, with errors indicated.
- Some marking will be immediate, depending on the activity.
- Displays of mathematical work reinforce mathematical concepts, assist in learning and celebrate achievement.
- Oral feedback is given to enhance understanding.

Formative assessment enables the teacher to identify a child's understanding and progress, to inform their immediate teaching and to plan for their coming lessons. This can take the form of:

- discussing mathematics in the context of a practical task;
- short tests given in oral or written form;
- observation;
- individual discussions with children to evaluate progress.

Summative assessments consist of;

- Foundation Stage Profile
- PIPs assessment in Reception and Year One
- Key Stage One SATs (Teacher assessment)
- Optional SATs in Year 3-5
- Key Stage Two SATs

In addition to this, teachers undertake regular mathematical assessments as outlined in the school's **Assessment Policy**.

Target Setting

Our assessment policy sets out the strategies that we use to ensure continuity and progression in the teaching of Mathematics. Target setting is an important part of this process.

Making use of national curriculum assessments, teacher assessments and progress expectations for the individual child, all children will have a quantitative target for the national curriculum level they are expected to achieve by the end of the school year. Mid year assessments are used to gauge progress towards these targets, and to identify any underachieving children.

Inclusion

Children with SEN and /or learning difficulties or disabilities

Where possible, through the use of appropriate support and differentiation, children with SEN will be working towards the same learning objectives as their peers. From time to time, those working well below the level of the whole class may be working towards related objectives chosen from the relevant progression strand from an earlier year.

Those children with special needs may have specific targets relating to mathematics, where appropriate. They may be given additional support or extra teaching in small groups to help them achieve these targets. The lower attaining pupils should have access to a wide range of practical resources to help develop mathematical thinking and understanding.

Children who are gifted and talented

Children who are working well above the overall level of the class will be given a range of experiences designed to broaden or deepen their learning while working on the same learning objectives as their peers. This may be done by providing more demanding questions and investigations, often with a more open-ended approach. From time to time they may also be accelerating the pace of their learning by working towards objectives chosen from the relevant progression strand from a later year.

Children learning EAL

Children learning English as an additional language may need support in developing mathematical language and concepts. Care is taken to ensure that pupils are grouped according to their mathematical ability and not on their stage of language acquisition. Through the use of appropriate support and differentiation EAL pupils experience the same level of cognitive challenge as their peers. Some pupils may receive additional support from the Hounslow Language Service teacher.

Equal Opportunities

All children have an equal opportunity regardless of gender, race or ability, to progress and succeed in their mathematical learning and understanding. We pay particular attention to ensuring there is no gender bias in materials or in access to resources, including ICT. Teachers should pay attention to the equal distribution of their questions across all groups. Any displays and references to mathematics in society should show positive role models of gender, race, ethnicity and disabilities.

ICT

The use of ICT is an integral part of mathematics teaching and learning. The teaching of mathematics is supported by the ICT software that accompanies the Primary Framework. This provides tools for assessment, planning and

teaching and learning. Staff make use of online resources, software and hardware to enhance their teaching and learning. A wide range of ICT software is available for pupils to use to reinforce concepts, to provide investigational activities and to demonstrate new concepts. Teachers also use the NNS Interactive Teaching Programme (ITP) to enhance their teaching.

Maths across the curriculum

Although the mathematics curriculum is organised as a discrete subject, there are many potential cross-curricular activities.

Making links between areas of learning deepens children's understanding by providing opportunities to reinforce and enhance learning.

Learning is enhanced by:

- Giving further opportunities to practise taught skills through purposeful use in other curriculum areas;
- Providing real experiences, context and meaning for the development of core mathematical skills;
- Assisting memory through providing opportunities for children to use skills in a different context;
- Providing opportunities for the application of knowledge in new contexts, to involve children in higher order thinking skills, such as reasoning and problem solving;
- Providing opportunities for learners to recognize and develop key aspects of learning, e.g. looking for patterns and relationships, problem solving and reasoning;
- Building concepts by providing children with opportunities to meet the same or related information in different ways, adding to the richness of their experience.

Record Keeping

Teachers should keep a record of the work they have done with the children by highlighting a copy of the medium -term planning format for the class.

Records will be kept of the extent to which each child in the class has achieved the key objectives. Class tracking sheets are used to record class test results, e.g. tables and mental maths tests.

Teachers should ensure that summative test results and teacher assessments are recorded on the school tracking system, Target Tracker.

Reporting to parents

Reporting to parents is carried out through the twice-yearly parent / teacher consultation meetings and annually through the written report. Parents are given teacher assessments and the results of any testing carried out. They are provided with information on children's areas of strength and / or weakness

and on their rate of progress in mathematics. Any specific areas of difficulty or clarification can be discussed with the parents on an informal basis.

Monitoring and evaluation

The purpose of monitoring and evaluating activities is to raise the overall quality of teaching and levels of pupil attainment. The mathematics co-ordinator, the Head teacher and Deputy Head teacher will monitor the quality of teaching and learning and the monitoring will include:

- Scrutiny of planning
- Quality of teaching and learning through lesson observations and feedback
- Moderation of standards in children's work
- Evaluation of children's attainment against targets

The quality of mathematics in the school will also be inspected as part of any Ofsted inspection of the school as a whole. The LA inspector and numeracy consultant may carry out similar evaluations from time to time.

The role of the mathematics co-ordinator is to:

- Take the lead in policy development and review, including the implementation of the National Numeracy strategy and the Primary Framework;
- Keep up-to-date on local and national initiatives and disseminate information;
- Take responsibility for the purchase and organisation of mathematics resources;
- Monitor the planning for mathematics across the school;
- Write, review, implement and update the Numeracy Action Plan.
- Encourage the professional development of staff.
- To monitor Mathematics lessons.

Essential Classroom Resources

See attached list in appendix.

Numeracy Strategy Resources and Publications

- *Mathematical Vocabulary Book*
- *Springboard Y3-6*
- *Unit Plans Y1-6*
- *Using assessment and Review Lessons (DfES 0632/2001)*
- *Assessment Toolkit to support pupils with EAL (DfES 0319/2002)*
- *Primary National Strategy(DfES 02011-2006)*

- *Guidance to support pupils with specific needs in the daily mathematics lesson (DfES 0545/2001)*
- *Wave 3 Mathematics (DfES 0389/2003)*
- *Mathematics challenge for able pupils*
- *Teaching written calculations (QCA/99/486)*
- *Teaching mental calculation strategies (QCA/99/380)*
- *Curriculum Guidance for the Foundation Stage (DfES 2000)*

Policy monitoring and review

The Maths coordinator is responsible for the monitoring of the implementation of this policy. The coordinator reports on the effectiveness of the policy to the headteacher and the governing body. There is a designated numeracy governor who meets with the coordinator, reviews progress in Maths and reports to the full governing body. The headteacher reports to governors through the headteacher's report.

The policy will be reviewed every three years.

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