

## Introduction

This policy outlines the teaching, organisation and management of mathematics at Green Lanes Primary School. It is based on the 2014 aims and expectations of the National Curriculum for Mathematics and the Early Years Development Matters EYFS document.

This policy has been drawn up by the mathematics leader, shared and discussed with staff and has the full approval of the Governing Body.

## Purpose of study

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. (National Curriculum 2014)

## Aims (in line with the National Curriculum for Mathematics 2014)

Through the delivery of the mathematics curriculum at Green Lanes Primary School we aim for all children to:

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions
- make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems.
- apply their mathematical knowledge to science and other subjects.
- develop a sense of enjoyment and curiosity about mathematics.

## Organisation of the curriculum

At Green Lanes Primary School we follow the statutory requirements of the National Curriculum for Mathematics and the Early Years Development Matters EYFS document which help to ensure continuity and progression in the teaching of mathematics.

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. Teachers organise their medium term planning to ensure that this takes place.

The expectation is that the majority of our pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress are based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly are challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material are given opportunities to consolidate their understanding, including through additional practise, before moving on.

Pupils are provided with opportunities to work mathematically in other curriculum areas where they are encouraged to apply their mathematical knowledge and skills.

Information relating to the organisation of our curriculum on a year-by-year basis is available on our school website. The school website also contains our calculation policy which ensures continuity and consistency in written and mental strategies for addition, subtraction, multiplication and division

### Teaching and Learning

At Green Lanes Primary School teachers create medium term plans for mathematics, using the National Curriculum for Mathematics and the Early Years Development Matters EYFS documents as starting points. Hertfordshire planning materials or commercial schemes may be used alongside these in order to create a structured approach to the delivery of the programmes of study.

Short term planning is completed on a weekly basis and follows an agreed school format. These sequences of work are viewed as a flexible working document which takes into account the learning needs of pupils which may arise as lessons are taught. Lessons are evaluated on a daily basis and adaptations to future planning made where necessary.

Pupils are grouped by current levels of attainment across their year group, except in the upper phase where children are grouped across Years 5 and 6 and the Foundation Stage where children are taught in their classes. These groups are flexible and are reviewed at least every half term. Where children demonstrate a particular strength or difficulty in one area of the curriculum they may move to the other class during the teaching of that specific area.

All children participate in a daily mathematics lesson. The following elements are present in these lessons:

- whole class direct teaching with clear and progressive modelling of concepts and procedures
- the consistent use of core manipulatives and representations to support ability to access learning and deepen understanding
- rehearsal of core facts and strategies
- rich mathematical talk, supported by adult questioning
- emphasis placed on learning through reasoning and problem solving, including contextualised or 'real-life' learning where appropriate
- challenge for more able pupils through depth and breadth of experience
- differentiation achieved through adjustments to allow access to whole class learning (reasonable adjustment) or increase in challenge through adjustment for breadth and depth to whole class teaching
- steps to success – where possible children will help to create these and will use them to check that they are working towards meeting the learning objective
- paired, group and whole class discussions
- teaching assistants supporting or extending small groups or individuals
- daily response time to give children time to respond to teacher marking and feedback

In the Foundation Stage a range of mathematical activities are provided for children to access independently in order to practise their skills or through an adult led activity, in order for children's mathematical understanding to be developed.

### Differentiation and support (including provision for SEND, AG and T and EAL)

This is incorporated into all mathematics lessons and is done in various ways, such as:

- Setting challenging age related knowledge, reasoning and problem solving tasks based on the accurate assessment of pupils' prior knowledge, skills and understanding.
- Timely support and intervention and the systematic checking of pupils' understanding throughout lessons.
- Using manipulatives and representations
- Teachers working with focus groups, supporting pupils having difficulties or deepening understanding for those who have grasped the concept quickly.
- The use of specialist support staff.
- Using individualised programmes for pupils whose learning difficulties are severe or complex.

Where pupils have been identified as underachieving or not on track to meet age related expectations, interventions for mathematics will be provided. These should be short term and sharply focused upon specific needs. Leaders regularly assess the impact of these as part of the school monitoring cycle.

### Marking

Effective marking helps to ensure that children benefit from constructive guidance and next step feedback in order to consolidate learning and challenge further. Marking in mathematics is personal, frequent and of high quality. Children's work is marked on a daily basis and in-depth feedback marking takes place at least once a week. Dedicated response time is built into the start of every lesson to enable children to make corrections and respond to teacher comments. Marking in mathematics follows the agreed school marking policy where the 'tickled pink' and 'green to grow' approach is used. Peer and self-marking are also used throughout the school.

### Homework

Pupils in Years 1-6 will receive one differentiated mathematics task to complete at home each week. This work is set by the child's mathematics teacher and is designed to enable them to practise their skills at home with the support of their parent/carer. Homework clubs are provided for children who require further adult support or a suitable space to work in when completing this work. All homework is marked.

### Assessment, recording and reporting

Green Lanes Primary School is focused on formative assessment first and foremost. Teachers and teaching assistants assess pupils on a daily basis through methods such as mini plenaries, questioning and marking. Daily plans are evaluated and annotated and this informs next steps in teaching. Children are also encouraged to self-assess, recognising successes and identifying areas for improvement.

We use the Herts for Learning assessment criteria to judge how well individuals and groups are securing learning and to identify gaps and barriers. Moderation of these judgements takes place across classes and phases as well as with other local schools.

AM7 is used for tracking attainment and progress using the Herts for Learning steps and phases approach and the Development Matters document for EYFS. This allows the swift identification of pupils in danger of not meeting age related expectations or for whom progress has slowed. Data gathered from this is used during pupil progress meetings which take place on a termly basis. These meetings involve the identification of pupils at risk of underachievement or of not meeting age related expectations and the planning of appropriate intervention or support.

Statutory assessments take place at the following points:

- At the end of Foundation Stage where children's attainment in mathematics is measured against the Early Learning Goals.
- At the end of Key Stage 1 (Year 2) where children's attainment in mathematics is measured against age related expectations. Children's standard of attainment is teacher assessed but informed by the outcomes of government test papers (SATs).
- At the end of Key Stage 2 (Year 6) where children's attainment in mathematics is measured against age related expectations. Children are given a scaled score which demonstrates attainment below, at or beyond age related expectations. This judgement is based on the outcomes of government test papers (SATs). Teacher assessments are also made where attainment is measured as working at the expected standard or not working at the expected standard.

Progress and attainment in mathematics is fed back to parents at parent consultation evenings in the Autumn and Spring terms and via termly reports. Parents will also be asked to come and meet with the teacher outside of these times if specific learning issues have been identified. Parents of children in Foundation Stage, Year 2 and Year 6 will also receive information relating to the outcome of their child's end of key stage assessments in mathematics at the end of the summer term.

## Monitoring and evaluation

The monitoring of the standards of children's work and the quality of learning and teaching mathematics is the shared responsibility of the senior leadership team and the subject leader. The work of the 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.

Monitoring and evaluation activities may include the following:

- Scrutiny of long, medium and short term planning
- Scrutiny of pupils' work and teacher feedback and marking
- Classroom observation and feedback
- Pupil interviews
- Monitoring of assessments and record keeping
- Leading staff INSET
- Updating and evaluating the school development plan for mathematics
- Participating in pupil progress meetings
- Analysing data
- Liaising with teaching and learning advisors

A named member of the school governing body is briefed to overview the learning and teaching of mathematics in the school.