



Woodside Primary School MATHS POLICY

This policy outlines the teaching organisation and management of mathematics taught and learnt at Woodside Primary School. The policy is based on the 2014 expectations and aims of the 'New Curriculum' for mathematics and the Early Years 'Development Matters' EYFS document. This ensures continuity and progression in the learning and teaching of mathematics.

Purpose

Mathematics is a creative and highly interconnected 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 all forms of employment. A high-quality education in maths 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.

Aims

The new National Curriculum for mathematics aims to ensure that all pupils:

- Become fluent in the fundamentals of mathematics, including through varied and frequent practise 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.
- Can 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.

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 distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

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

Computing

Calculators should not be used as a substitute for good written and mental arithmetic. They should therefore only be introduced near the end of key stage 2 to support pupils' conceptual understanding and exploration of more complex number problems, if written and mental arithmetic are secure. Teachers should use their judgement about when computing tools should be used.

Spoken Language

The national curriculum for mathematics reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof. They must be assisted in making their thinking clear to themselves as well as others and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

Early Years (Foundation Stage 1 and 2)

Work undertaken within the Foundation Stage is guided by the requirements and recommendations set out in the 'Statutory Framework for the early years foundation stage' (September 2014) and the Early Years 'Development Matters' EYFS document.

Mathematics is a specific area of learning and focuses on developing skills in Numbers and Shape, space and measures.

All children are given ample opportunity to develop their understanding of mathematics through practical/hands-on learning experiences in the Early Years. We aim to do this through varied activities that allow children to use, enjoy, explore, practise and talk confidently about mathematics.

School curriculum: (KS1 and KS2)

The Programmes of study for mathematics are set out year by year for Key Stages 1 and 2 in the new National Curriculum (2014). The programmes of study are organised in a distinct sequence and structured into separate domains. Pupils should make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Key Stage 1

The principal focus of mathematics teaching in Key Stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources (e.g., concrete objects and measuring tools).

At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money.

By the end of Year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency.

Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at Key Stage 1.

Lower Key Stage 2

The principal focus of mathematics teaching in lower Key Stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers.

At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number.

By the end of Year 4, pupils should have memorised their multiplication tables up to and including the 12-multiplication table and show precision and fluency in their work.

Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Upper Key Stage 2

The principal focus of mathematics teaching in upper Key Stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio.

At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

By the end of Year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages.

Pupils should read, spell and pronounce mathematical vocabulary correctly.

Planning, learning and teaching (A typical lesson)

The approach to the teaching of mathematics within the school is based on:-

1. A mathematics lesson every day.
2. A clear focus on direct, instructional teaching and interactive oral work with both the whole class and smaller ability groups.

The curriculum is delivered by class teachers. All work is differentiated to give appropriate levels of work.

Teachers differentiate all parts of the lesson carefully include mental warmups, independent activities and plenaries.

Questioning is the key to success in all our mathematics sessions and questions will be continuously adapted by the teacher and support staff based on assessment for learning. Mental maths should be incorporated throughout all lessons and mental strategies for solving all mathematical concepts will be discussed and developed based on continuous assessment for learning.

Use of teaching assistant support is planned for in every part of the mathematics lesson to ensure they are used effectively in supporting, developing and assessing pupil progress throughout. At Woodside we value the impact that teaching assistant support has on all our children's learning and our teaching assistants are involved in planning through regular meetings with the teachers. Regular training opportunities are given to keep them fully updated and develop their skills further. They are encouraged to share assessment observations made in mini-plenaries, final plenaries and through discussions with teaching staff to have a shared impact on children's progression.

Progression of calculation methods

We have a policy for progression in calculation methods to ensure continuity and consistency throughout the school.

Differentiation and support

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 systematic, accurate assessment of pupils' prior skills, knowledge and understanding.
- In every lesson, children are provided with clear differentiated **success criteria**. This enables them to assess the progress they have made during and lesson and gives them clear next steps with regards lesson concepts.

- Timely support and intervention; systematically and effectively checking pupils' understanding throughout lessons.
- Ensuring that marking and constructive feedback is personal, frequent and of a consistently high quality. Thus, enabling pupils to understand how to improve and develop their work with planned in time for children to respond to feedback.
- Real life, practical links throughout all knowledge, reasoning and problem solving tasks. **Outdoor learning** is incorporated where possible.
- Range of practical, real life resources used to support all stages of learning within the class.
- Differentiated homework is set weekly.
- Intervention programmes/extra teacher support delivered where needed both in class and through extra sessions planned outside the sessions e.g., during assembly times.

Marking

The main purpose of our marking policy is to ensure that as children progress through the school they benefit from constructive guidance and next step questioning to challenge and consolidate their learning further. The school has a clear marking scheme, which is shared with the children verbally.

Children use their purple pen of power to correct mistakes, this enables teachers to see if pupils have identified their errors.

Assessment

Assessment is regarded as an integral part of teaching and learning and is a continuous process. It is the responsibility of the class teacher to assess all pupils in their class. This is mainly achieved through mini-plenaries, questioning, success criteria, marking, T.A feedback and pupil self-assessment.

Teachers record evidence in lesson evaluations, annotated planning and/or evaluation books.

Children will complete assessment tasks on blue paper which will be used to assess pupil progress and inform planning, identifying strengths and weaknesses.

Assessment evidence will be monitored by the maths subject leader, and the Headteacher. Short term as well as long term progress is evidenced and tracked.

Inclusion and equal opportunities

All children are provided with equal access to the mathematics curriculum. We aim to provide suitable learning opportunities regardless of gender, ethnicity, disabilities or home background.

Resources

Resources which are not used or required regularly are stored centrally and accessed by teachers when required. The Technology team take responsibility for auditing and ordering resources.

Displays

Each classroom should have a maths **challenge area** within their classroom. The challenge area can be used at any time during the school day and must provide children with a range of tasks which they can complete to help develop their understanding of mathematical concepts. In addition to this, teachers are encouraged to have a working wall displaying work relating to the current concepts taught.

Homework

Homework is sent home weekly to all children at Woodside Primary School. Tasks are either based upon the concepts covered during the lessons or developing children's mental arithmetic.

The main purpose of our maths homework will be to provide opportunities for children to discuss mathematical concepts with their families/friends in familiar contexts.

Monitoring of Standards

The monitoring of the standards of children's work and the quality of learning and teaching mathematics is the shared responsibility of the S.M.T and Math 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.

- Planning monitored by Maths co-ordinator and senior staff.
- Lesson observations by head-teacher, Maths co-ordinator and senior staff.
- Work scrutiny by Maths lead and senior staff.
- Data analysis (attainment and progress of all pupil groups).
- Analysis of staff, pupil and governor questionnaires and interviews.
- Moderation of end of Key Stage 1 and 2 by LEA.

Review

This policy will be reviewed in September 2022.

Headteacher: Richard Collings



Maths Lead: Chris Hayes



Chair of Governors: Mike Nelson

