LONG MEAD COMMUNITY PRIMARY SCHOOL POLICY

Policy name	**Mathematics Policy**
Date written	**June 2024**
Date of renewal	**June 2025**
Senior member of staff with oversight	**Maths Leader and Headteacher**

'A high-quality mathematics education 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.' (DfES 2014)

Our teaching approach in Maths is based upon the mastery model, using the rich and high-quality textbook scheme, Power Maths, from Year 1 to Year 6. Through this, children gain a solid and deep understanding of mathematical concepts - recognizing the power of thinking not just doing, which in turn will allow all to see patterns and make connections.

We are committed to delivering mathematics in innovative ways that link, where possible, to real-life experiences in order to prepare our children for the next phase of their school career.

Our Aims

Our aims for Maths at Long Mead Community Primary School are based on the 'The National Curriculum in England - mathematics programme of study, KS1 and KS2 framework' document which is designed to ensure that all pupils:

- Become **fluent** in the fundamentals of mathematics, including 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.
- Can **solve problems** by applying their mathematics to a variety of problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

To achieve these aims, we strive to:

- Develop a numerate environment where mathematical risk-taking, creativity and logical thought are encouraged in order to develop independent learners; Secure fluency with numbers and the number system;
- Develop the ability to solve problems through decision-making, reasoning and logic in a range of contexts;
- Promote a positive and confident attitude to mathematics through celebrating achievement, supporting and challenging all pupils;
- Develop mathematical communication through speaking and listening, practical activities and recording work.

Teaching for Mastery Principles

- It is achievable for all – we have high expectations and encourage a positive 'can do' mindset towards Maths in all pupils, creating learning experiences which develop children's resilience in the face of a challenge and carefully scaffolding learning so everyone can make progress.

- Deep and sustainable learning – lessons are designed with careful small steps, questions and tasks in place to ensure the learning is not superficial.
- The ability to build on something that has already been sufficiently mastered – pupils' learning of concepts is seen a continuum across the school.
- The ability to reason about a concept and make connections – pupils are encouraged to make connections and spot patterns between different concepts (e.g. the link between ratio, division and fractions) and use precise mathematical language, which frees up working memory and deepens conceptual understanding.
- Conceptual and procedural fluency – teachers move mathematics from one context to another (using objects, pictorial representations, equations and word problems). There are high expectations for pupils to learn times tables, key number facts (so they are automatic) and have a true sense of number. Pupils are also encouraged to think whether their method for tackling a given calculation or problem is Appropriate, Reliable and Efficient (A.R.E).
- Problem solving is central – this develops pupils' understanding of why something works so that they truly have an appreciation of what they are doing rather than just learning to repeat routines without grasping what is happening.
- Challenge through greater depth - rather than accelerated content, (moving onto next year's concepts) teachers set tasks to deepen knowledge and improve reasoning skills within the objectives of their year group.

Planning

In Nursery and Reception, children are given the opportunity to develop their understanding of number, shape, space and measurement through a combination of short, formal teaching sessions as well as a range of planned structured play situations, where there is plenty of scope for exploration. Children will become competent 'counters' so that their fluency with the number system provides a foundation for mathematical understanding. They will count reliably with numbers from one to twenty, place them in order and say which number is one more or one less than a given number. Using concrete objects, they add and subtract two single-digit numbers and count on or back to find the answer. Mastery is key in the Foundation stage to set up the platform for further learning.

In Year 1 – 6, teachers use Power Maths as a framework based upon the CPA approach (concrete, pictorial and abstract).

Within mixed year group classes each Maths lesson is split into two. One year group are taught and investigate a new concept with the support of the class teacher, whilst the other year group carries out independent Practice Book work with a Learning Support Assistant (LSA) support. The two year groups will then swap for the second half of the lesson. All new learning is delivered by the class teacher. In single year group classes, the teacher and LSA support the whole class together.
Within the 'taught' period of the lesson the children are encouraged to "Discover" – show how they are able to solve a mathematical concept; "Share" listen to the range

of representations that may be used and “Think Together” apply their developing understanding – scaffolded until they have grasped the concept.

Our Calculations Policies and Maths Progression Map reflect progression in the range of strategies taught, whilst giving flexibility to model the four operations in a variety of ways - this ensures consistency throughout the school.

Concepts are revisited through weekly arithmetic challenges and times table practice. This is supported through the use of Times Table Rock Stars which the children access at home, in some lessons and in lunchtime clubs. Other concepts are revised for “early morning work” and daily interventions run for key children who have been identified with specific gaps.

Mathematical Language

The 2014 National Curriculum is explicit in articulating the importance of children using the correct mathematical language as a central part of their learning (reasoning). It is therefore essential that teaching using the strategies outlined in this Policy is accompanied by the use of appropriate and precise mathematical vocabulary. New vocabulary should be introduced in a suitable context (for example, with relevant real objects, apparatus, pictures or diagrams) and explained carefully. Answers to discussion questions are given in full sentences using correct vocabulary. Stem sentences are used to assist the children in making their thinking clear to themselves and to others. These are introduced using the ‘I say’, ‘you say’, ‘we all say’ model.

Inclusion

Although the National Curriculum suggests children move through the programmes of study at a similar rate, we recognise that children sometimes need work that is “other and different” to support and/or challenge – their mathematics “stage” not “age.” It is important to us that all children are given access to opportunities to explore Maths at an appropriate level. This is achieved in a variety of ways:

- The use of a greater variety of concrete items to support consolidation
- Real-life planned links to support abstract concepts
- The use of problem-solving activities to further develop reasoning
- Timely support and intervention, systematically checking understanding throughout every lesson to embed conceptual development
- Differentiated questioning to support or extend learners
- Differentiated tasks/support to suit learning needs of all
- Effective AFL throughout every lesson, picking up misconceptions and moving others forward to deepen understanding with a range of tasks
- Marking and verbal feedback throughout every lesson

- Booster sessions delivered by class teachers and LSAs to address misconceptions on a daily basis
- Adapted curriculum delivered in small groups or on an individual basis for those few children working significantly below their age group.

Marking

In accordance with our Marking Policy, green and pink pens are used by teachers and LSAs. The children make corrections using purple pens. Please see the Marking Policy for further information.

Assessment

Formative - throughout the lesson assessment for learning (AFL) is a continuous process whereby teachers and LSAs review through mini-plenaries, targeted differentiated questioning, marking, verbal feedback and pupil's self-assessment.

At the end of each unit - Power Maths uses low-stakes "End of unit checks," mini-tests that enable children to reflect on their own understanding - "Power checks" of that concept and a game "Power play" to consolidate and demonstrate the depth of understanding.

Summative – testing takes place two or three times a year depending on the year group (in line with the Assessment Policy). The data from these assessments is analysed along with information from teacher assessment, to inform progress. This is then recorded on the SIMs tracking system, which is used to inform discussion in pupil progress meetings as well as the next term's learning and interventions.

Parental Links and Home Learning

At Long Mead, we encourage parents to be involved in their child's learning and aim to support this partnership through clear communication and sharing of aims and methods, for example by producing online videos modelling calculation strategies. Parents are invited to parents evening twice a year to discuss their child's progress and receive the annual report that highlights mathematical achievements and targets for the next school year.
Times Table Rock Stars is used to support the children's learning of times tables at home and mathematical tasks form part of the termly menu of home learning challenges.

Role of the Maths Leader

- Ensures teachers understand the requirements of the National Curriculum and how to use Power Maths to plan lessons.

- Leads by example by setting high standards in their own teaching.
- Leads continuing professional development for teachers and LSAs, including coaching and feedback for teachers to improve pupil learning.
- Leads the whole-school monitoring and evaluation of teaching and learning in mathematics by observing teaching and learning in mathematics regularly; analysing assessment data in order to plan whole school improvement in mathematics; conducting work scrutiny to inform evaluation of progress; conducting pupil interviews.
- Takes responsibility for managing own professional development by participating in external training, independent private study, engaging in educational research and scholarly reading and keeping up-to-date with Teaching for Mastery developments.
- Keeps parents informed about mathematics issues.
- Ensures that the school's senior leaders and governors are kept informed about the quality of teaching and learning in mathematics.
- Keeps the school's policy for mathematics under regular review.