

Mathematics Curriculum Policy:

Intent:

At Mereworth we believe that every child can succeed in Mathematics to become a confident and competent Mathematician equipped with the skills of logical reasoning, problem solving and the ability to think in an abstract way which are important in everyday life.

We teach Mathematics using the Maths No Problem scheme(MnP), based on a mastery approach to learning encompassing the National Curriculum (2014) year group expectations. This approach to learning Mathematics is based on over 30 years research and text books created in Singapore that were then recreated to fit the English National Curriculum for Mathematics.

At the heart of the Maths No Problem scheme are the development of the key concepts of fluency, relational understanding and problem solving. The Maths No Problem scheme enables children to explore key Mathematical concepts and procedures in detail by presenting them in a variety of ways, using Bruner's concrete, pictorially and abstract theory (CPA) as well as building understanding in small steps. Time is spent reinforcing past learning regularly to ensure that children continue to develop previously taught skills through early morning work and regular refocus and revisit lessons. This approach ensures that children make genuine progress and avoid gaps in their understanding that can become barriers to learning in the future.

Each year group's learning is designed with a spiral approach in mind, building on the previous year's learning.

Within the Maths No Problem scheme the use of precise, technical Mathematical language is consistent across all year groups. This enables children to develop the appropriate vocabulary to enable them to discuss, reason and explain their Mathematical understanding more clearly and precisely.

Implementation:

Maths no Problem Lessons are typically broken into 6 parts:

1. **A 15 minute Fluency session** helping children identify key relational understanding of numbers rather than simply relying on rote learning. Each week, in all classes, the Fluency session will be focused around Maths Passports. Maths Passports encourages children to learn key number facts both at School and at home with parental support.
2. **An In Focus Task** – the Class spend time on a question guided by the Teacher. During this time the children are encouraged to think of different ways to solve the problem.
3. **New Learning** – the Teacher introduces and explains new learning for the lesson.
4. **Guided Practice** – children practice new learning in groups, pairs or individually (as appropriate) guided by the Teacher.
5. **Independent Practice** – children practice new learning individually. The new learning is presented in a variety of different ways to enable the children to think and apply their learning more flexibly.
6. **Deepening Practice** – once the children have mastered the concept they use their reasoning and problem solving skills to develop their depth of understanding.

The majority of children progress through the curriculum content at the same pace. Differentiation is achieved by emphasising deep knowledge and through support and intervention. The questioning and scaffolding individual children receive in class will differ. Children who grasp concepts more rapidly are challenged through more demanding problems which deepen their knowledge further. This approach ensures that procedural and conceptual understanding are developed simultaneously. Additionally, as a result of ongoing, timely formative assessment there are **Daily 'Keep Up' Sessions** - at the end of each lesson children who have not fully grasped the learning have a 15 minute 'Keep Up' session supported by the Class Teacher and Teaching Assistant to address any misconceptions and further develop the child's understanding. This ensures that all children are ready to progress to the next step on the following teaching day.

For most lessons children are seated in groups to enable some element of collaborative learning as we believe children attain more highly when working with their peers.

Each Classroom has a Maths' Working Wall reflecting the current learning and key vocabulary, which the children are able to use as a reference point and a prompt for learning.

Every term there are summative assessments where the children are tested on their previous learning for the year to date and this is used to inform future teaching and planning for both the whole class and specific intervention groups.

To support learning in Class the children are set home learning using the Mathematics programme every fortnight, as well as weekly home learning for Maths Passports and Times Tables tests in Key Stage 2.

Within the Early Years Foundation Stage (EYFS) Mathematics is developed through purposeful play based experiences which are represented in a variety of indoor and outdoor environments. The Long term plan focuses on the expectations from Development Matters / Early Years Outcomes. Children are encouraged to record their mathematical thinking and the expectation of formal recording increases during the year.

Impact:

To assess the impact of teaching in Mathematics at Mereworth for Years 1 – 6 inclusive we use the 21 steps assessment system recording outcomes against age related expectations for each Mathematical strand, based on the National Curriculum (2014). For EYFS children are assessed during Term 1 providing a baseline assessment and termly thereafter against Development Matters / Early Years Outcomes.

Data from high quality termly summative assessments is collated into the 21 steps for each year group to give a snapshot of where each child's learning is compared to the year group expectations. Gaps in learning are immediately identified and this forms the starting point to plan appropriate strategies to close those gaps through intervention programmes and Fluency sessions.

The outcomes from these assessments are reviewed by the Maths Subject Leader and Head Teacher and any anomalies are discussed at the termly Pupil Progress Meetings. This ensures that any children not meeting year group expectations are identified and supported to enable them to develop the skills and understanding necessary to progress their learning.

Teachers and parents / carers are able to share information about the child's progress on a termly basis through Parent Consultation meetings in Terms 2 and 4, Celebration of Learning events in Terms 3 and 5 and the formal written end of year report in Term 6. The written report in Term 6 gives an overall description of each child's attainment across the whole of the Maths Curriculum for that academic year.

Appendix of Key Terminology:

Maths No Problem – see website for more details about this approach to teaching mathematics under the Maths curriculum section of the website.

Maths Journals – Maths exercise books used to record learning from in focus task, sometimes guided practice and any deepening activities, as well as refocus and revisit learning.

Maths no Problem Workbooks- Individual workbooks where the concept being learnt is presented in a variety of ways with both procedural and conceptual variation to allow children the opportunity to practise their skills.

Early Morning Work – Takes place between 8.40 – 9.00 to provide opportunities for children to practise skills and ensure that children have overcome previous misconceptions.

Refocus and Revisit Lessons – Take place regularly from Term 3 each academic year to revisit areas of previous learning with the opportunity to apply skills in a variety of ways.

Fluency Sessions – Primarily focused on developing relational understanding of number and the ability to immediately identify and use key number facts, for example number bonds, times tables, place value.

Maths' Working Wall – Reflect the current learning and key vocabulary as well as different representations of key concepts.

Mathletics Programme – An IT programme developed for each year group in line with National Curriculum 2014 expectations facilitating the revisiting of key concepts and tests.

Maths Passports – Year group specific number facts, in line with National Curriculum 2014 expectation, allocated to each year group's passport, identified as a specific continent for example Year 2 is Africa, to encourage children to learn key number facts for weekly testing. See website for more details about this approach to teaching mathematics under the Maths curriculum section of the website

Intervention Programmes – Specific programmes of learning delivered by a Class Teacher or Teaching Assistant focused on a specific area of learning. Usually in small groups.