Maths at MCPA

Intent

At Manchester Communication Primary Academy (MCPA), we believe every child can succeed in mathematics when given the right support and challenge. Through our use of **White Rose Maths**, we aim to:

- Build **secure number sense, fluency, and confidence** from Nursery through to Year 6, using the CPA (Concrete, Pictorial, Abstract) approach at the heart of learning.
- Develop pupils' ability to **reason mathematically**, solve problems, and make rich connections across mathematical ideas.
- Ensure children retain and revisit prior knowledge regularly so that **long-term memory** is strengthened.
- Match the **scope and rigour of the National Curriculum**, ensuring children are well-prepared for their Year 6 SATs and future study.
- Provide an **inclusive curriculum** where barriers to learning are reduced, and all children, including those with SEND, are supported to thrive.

We want our pupils to leave MCPA not only with strong mathematical skills but also with curiosity, resilience, and an appreciation of how maths underpins everyday life and the wider world.

Implementation

At Manchester Communication Primary Academy, we are committed to delivering a high-quality, coherent maths curriculum that allows every child to develop mastery and confidence in mathematics.

- We follow **White Rose Maths** small steps, ensuring clear progression and coherence from Nursery to Year 6.
- In Nursery and Reception, children develop strong number sense, explore early patterns, compare and measure, and build early mathematical vocabulary.
- Daily **Fluency Bee, Arithmetic practice and Flashback 4** strengthen recall and secure key number facts.
- Concepts are introduced in **small steps**, with opportunities to explore deeply and apply knowledge in reasoning and problem-solving.
- Key ideas are revisited regularly, ensuring learning is retained and built on over time.
- Lessons are carefully scaffolded with manipulatives, representations, pre-teaching,

and additional support where needed so that all children can access the curriculum.

Together, these approaches ensure that all children at MCPA can access, engage with, and make sustained progress in mathematics, building a strong foundation for future learning and everyday application.

Assessment

Assessment at MCPA ensures that every child's mathematical understanding is closely monitored and supported throughout their learning journey.

- Teachers use **ongoing formative assessment** in every lesson to identify misconceptions and adapt teaching.
- **PUMA tests are used termly** across the school to provide a standardised score, track attainment, and enable comparison across cohorts and nationally.
- Outcomes are reviewed termly to inform planning, identify pupils needing intervention, and celebrate progress.

These assessment practices ensure that teaching is responsive, gaps are addressed promptly, and every child is supported to achieve their full potential in mathematics.

Impact

The impact of our Maths curriculum at MCPA is seen in the confidence, fluency, and problem-solving abilities that pupils demonstrate as they progress through the school.

- Pupils demonstrate fluency, reasoning and problem-solving in line with the National Curriculum expectations.
- Children are confident and resilient, viewing mistakes as opportunities to learn.
- Pupils can recall and apply mathematical facts with increasing speed and accuracy.
- Children with SEND and disadvantaged pupils make strong progress from their starting points.
- Outcomes in maths show that progress is strong across all year groups, with pupils well-prepared for their Year 6 SATs and beyond.
- Pupils leave MCPA equipped with the mathematical skills, language, and confidence they need for everyday life and the next stage of their education.

As a result, children leave MCPA with not only strong mathematical knowledge and skills but also confidence, resilience, and the ability to apply their learning in real-world contexts.

Research

Research shows that mathematical thinking and understanding rely on both procedural **fluency** and conceptual **understanding**, which develop most effectively when learning moves from concrete to pictorial to abstract (CPA). Early numeracy experiences, including counting, subitising, pattern recognition, and problem-solving, are strongly linked to later achievement in mathematics and support development of working memory.

Studies also highlight the importance of regular **retrieval practice** and spaced repetition to strengthen long-term memory, which underpins fluency and reasoning. Daily opportunities to revisit prior learning, as well as consistent exposure to key facts through arithmetic practice, Fluency Bee, and Flashback 4, are aligned with evidence from cognitive science on memory and retention.

Furthermore, research by the Education Endowment Foundation (EEF) emphasises that children's attitudes towards maths, including resilience and willingness to tackle challenging problems, are strongly correlated with achievement. By embedding opportunities for reasoning and problem-solving across all year groups, MCPA ensures pupils develop confidence, persistence, and the ability to apply mathematics in new contexts.

Rosenshine's Principles also underpin our teaching: reviewing prior learning, presenting new material in small steps, modelling strategies, guided practice, and independent practice all support deep learning and mastery in maths. These strategies are applied in lessons to ensure children understand concepts fully before moving on, and to reduce misconceptions and gaps in knowledge.