

Reach for the Stars

Mathematics teaching for mastery

Mathematics teaching for mastery assumes everyone can learn and enjoy mathematics. Mathematical learning behaviours are developed such that pupils focus and engage fully as learners who reason and seek to make connections.

Curriculum design ensures a coherent and detailed sequence of essential content to support sustained progression over time. When taught to master maths, children develop their mathematical fluency without turning to rote learning and can solve non-routine maths problems without having to memorise procedures. Evidence shows that children need to be able to understand a concept, apply it in a range of situations and then be creative to really understand it.

Our chosen scheme, Maths No Problem (a DfE recommended scheme that follows the Singapore approach to teaching mastery maths), is at the heart of our maths curriculum and is adapted to suit our pupils. It teaches maths sequentially and has, at the heart of it, a Maths Mastery approach to teaching that gives pupils a deep, long-term, secure and adaptable understanding of mathematics. Additional quality materials are also used to supplement learning.

The Maths No Problem mission statement:

"We believe that every child can master an understanding and love of maths with the right kind of teaching and support. We want you to join our mission to build the confidence of the nation's maths teachers and learners." Maths No Problem (2016).

The core elements of the approach to Mastery are coherence, representation and structure, mathematical thinking, fluency and variation (these are known as the 5 big ideas).



More information can be found on Maths No Problem parent videos by following this link: <https://mathsnoproblem.com/en/parent-videos>

By adopting a Mastery Curriculum approach to our teaching of mathematics, this means spending greater time going into depth in areas or concepts rather than quickly moving through the curriculum and the year group objectives. In having high expectations that all children will achieve, all children are given the opportunity to explore, find and identify patterns, become fluent, reason and problem solve and are exposed to carefully crafted questions and activities with a wide range of manipulatives at hand for all to accomplish this.

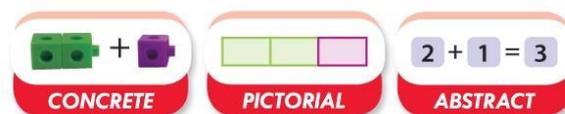
We strive to ensure that the whole class moves through content at the same pace and when we differentiate, it is through depth rather than acceleration; everyone is given time to think deeply about the maths and we strive to develop a positive attitude to build self-confidence, resilience, and a sense of achievement. Questions structured with a “greater depth” of complexity are used allowing children to explore and investigate the mathematical concept; develop their ability to reason, prove or question an approach. Children may support each other as collaborative learning allows them to support each other’s progress. Children understand that ‘deeper reasoning’ challenges provide them with opportunities to apply their learning with additional challenge.

Our intention is for every child to develop a sound understanding of Maths through a progressive acquisition of knowledge and skills. This helps our children to know and remember more through both well timed repetition and carefully planned tasks to introduce new learning.

How is our curriculum designed and implemented?

The way we structure our lessons ensures a consistent approach to teaching maths; a greater emphasis on the sequence of learning; better use of open-ended investigational type questions and the continued development of mathematical pedagogy.

The mastery approach we use ensures that there are high expectations for all children; little chance for passive learning as there is a greater emphasis on talk in maths, collaborating, exploring, and investigating; use of equipment which is actively encouraged and planned opportunities for children to make connections between subjects. The scheme has the concrete-pictorial-abstract (CPA) method at its heart which encourages children to use and discover through the use of equipment (concrete - such as cubes or tens and ones) then they progress to representing this in picture form (pictorial) and finally using equations and mathematical symbols (abstract). The CPA approach allows all children to access maths and deepens their understanding of key topics whilst also making crucial links between them.



[Click here for an explanation of the CPA approach](#)

In the EYFS, we have implemented the Maths No Problem Foundations, a programme of teaching and learning activities, exercises, and stories which deliver a firm foundation for developing maths mastery in Key Stage 1. Within each unit, there are a selection of activities which include talking time, thinking time and possible journal activities in a workbook; games which support the learning concept; suggested stories and assessment opportunities. Picture books also inspire children to the wonderful world of maths which is what the Foundations Programme advocates. The scheme is fully inline with the EYFS framework 2021 and the ELG for Maths.