



Maths Curriculum at Great Moor Junior School

Intent

Mathematics is a creative and highly inter-connected 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 most forms of employment. A high-quality mathematics education 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.

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

- become fluent in the fundamentals of mathematics, including through 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 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 apparently 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 the majority of 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.

Implementation

At Great Moor Junior School, we provide a balanced and broadly-based curriculum which promotes the spiritual, moral, cultural, mental and physical development of pupils and prepares them for the opportunities and responsibilities and experiences for later life.

Maths is a cross curricular subject and therefore children will use their Mathematical knowledge and skills throughout the curriculum.

Our curriculum:

- Contains well thought out lessons and topics that demonstrate progression.
- Uses a Concrete - Pictorial - Abstract approach to teaching various topics. This accommodates various learning styles as well as embedding the understanding of the concept taught. There is a clear calculation policy that incorporates the CPA approach clearly and progressively.
- Makes connections: connections between concepts are made where possible e.g. when multiplying and dividing by 10,100 and 1000, children will also convert metric measures at the same time to make the key links.
- Makes links to everyday life: it is important that children understand the use of mathematics in life. During each topic, teachers will focus on some of the ways in which the concept is used in everyday life. These will be displayed in the classroom.
- Links made with other subject areas such as Science, English, Computing and History thereby enabling pupils to notice connections and patterns in their learning.
- Improves fluency: children are given time to practise their fluency skills, during the start of lessons, and as part of our MAD time in the morning. We also give opportunities for children to select the most effective methods to use dependent of the calculation. We question them about the methods they selected,
- Makes concepts clear: teachers will make sure that children gain an understanding of the meaning of a concept by asking children "what... or why..." . For example, when teaching angles, teachers will ask "What is an angle?" and "Why is there a curved line between the lines?"
- Uses questioning to allow children to think: Questions such as the ones below are commonly used.
What do you notice?
What is the same? Different?
Which is the odd one out?
Always? Never? Sometimes?
If we know this, what else do we know?
The answer is.... What is the question?
Give me....tell me....show me.....
- Develops children's reasoning and problem solving skills: in order to successfully develop mathematical skills, children are given plenty of opportunity to apply their knowledge to a variety of problems. The school have invested in the Whiterose resources as well as a reasoning resource called "Build a sequence". Alongside other resources, teachers have a wealth of questions and activities to help develop these skills.
- Makes reasoning and problem solving skills explicit: skills are displayed in every classroom, and these skills are used in Learning Objectives and Success Criteria.
- Uses subtle differentiation: the majority of pupils will move through the programmes of study at broadly the same pace. However there will be differentiation in the form of

extra challenge for children who grasp concepts quickly. This could involve setting problems with different criteria, increasing the number size. For any learners that are slower in grasping concepts, there will be resources given to aid learning, problems with different criteria, decreasing number size and intervention where appropriate.

- Develops key vocabulary: as well as embedding reasoning and problem solving vocabulary, other key vocabulary, relating to specific concepts will be developed. A vocabulary display, which changes with every topic, is in each classroom. Vocabulary games are used to embed this vocabulary.
- Promotes collaborative learning: there are lots of opportunities for children to work together, in order to share their knowledge and understanding.
- The Maths subject leader will attend training to keep developing their own subject knowledge, skills and understanding, so they are able to support curriculum development and their colleagues throughout the school. They will provide regular whole staff on implementing Maths throughout the school.

Impact

The impact of our Maths curriculum:

- Children are able to make connections between concepts and where Maths is used throughout the world.
- Children will have clear enjoyment and confidence in Maths. They have a clear understanding of concepts through concrete materials, pictorial representations and abstract methods.
- Children are more fluent with methods as well as being able to select the most effective method based on different problems.
- Children are able to apply their knowledge to a range of problems. They will use the skills that they have developed to do this effectively.
- Children are able to make use of diagrams and informal notes to help record steps and part answers when using mental methods that generate more information than can be kept in their heads.
- The large majority of children will achieve age related expectations in Maths.

Assessment

- Year 6 children complete statutory end-of-key-stage SATs.
- Year 2 SATs assessments are given at the beginning of Year 3 to provide a baseline assessment when children enter the school.
- Daily formative assessment (gathered within and after the lesson via marking) is supported by summative assessment and is used to determine progress against the Age-related Expectations which are found in children's books. Assessment is used as a basis on which to plan future lessons based around the children's needs.
- Summative assessments are taken termly. They include Testbase Termly Tests for Year 3-5 and SAT papers for Year 6.

- Teachers will also track 4 pupils. They will assess them individually every term to identify any gaps in learning and inform future intervention groups.
- Year 4 will complete the multiplication tables check assessment.
- The children regularly self-assess and reflect on their progress.
- Weekly Maths tests, such as times tables tests, may also be used and the scores reported to parents.
- The children regularly self-assess and reflect on their progress.
- The Maths Leader analyses SIMS data and provides feedback to the Senior Leadership team in order to inform and improve future practice.