

Marsh Green Primary School



Mathematics Policy

Achieve, Believe & Celebrate

Our Vision

At Marsh Green Primary we value the role that Mathematics plays in our children's education. We aim to provide all children, regardless of their ability, with the opportunity to work confidently through fluency, problem solving and reasoning activities. All children can achieve, believe and celebrate in mathematics.

At Marsh Green Primary School, mathematics is a journey in which all children explore, practice and apply skills over time, in order to develop a deep conceptual understanding. Throughout the next academic year as a school we at Marsh Green intend to develop confident mathematicians who can apply a range of strategies across all aspects of the curriculum and be resilient when faced with a challenge. We also aim to ensure that ALL staff have a sound understanding of teaching for mastery and developing mathematical thinking.

Intent

Implementation

Marsh Green Primary School believes in a mastery approach to the teaching and learning of mathematics. We implement our approach through high quality teaching delivering appropriately challenging work for all individuals through a whole class teaching approach. To support the daily teaching of mathematics we incorporate concrete, pictorial and abstract opportunities, in order to help children explore and demonstrate mathematical idea, enrich their learning experience and deepen their understanding. Children are encouraged to explore new concepts through the use of concrete objects in order to develop an understanding of the concepts. They then build on the use of concrete materials through the use of pictorial representations, which can then be used to support problem solving and reasoning. Once the foundations have been firmly laid the children then move onto an abstract approach using numbers and key concepts with confidence. Pupils who grasp new concepts are challenged through the use of problem solving and reasoning to provide breadth and depth of the curriculum before any acceleration of new content. Children who are not sufficiently fluent in a given concept are given opportunities to consolidate their learning through in the moment interventions and additional practise, before moving on. Planning is supported by the use of the National Curriculum 2014, White Rose Hub, a wealth on concrete resources and the '5 big ideas of mastery'.

Impact

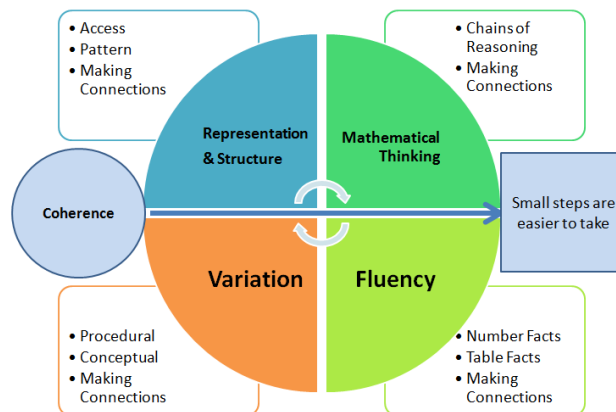
A mathematical concept or skill has been mastered when a child can show it in multiple ways, using mathematical language to explain their ideas, and can apply their understanding of a concept to problem solving and reasoning with confidence.

The three key aims of the National Curriculum should be addressed in each sequence of learning.

FLUENCY - REASONING - PROBLEM SOLVING

Teaching for Mastery

Our mathematics curriculum is underpinned by 'The 5 Big Ideas of Mastery'.



The 5 Big Ideas of Mastery are defined as follows:

Coherence- mathematical concepts are broken down into small steps that gradually allow children to an understanding of a given concept. This is then applied to a range of different concepts.

Representation and Structure- a variety of models and images are used to support the understanding of the concept, the aim that the children will eventually be able to visualise the concept in order to support them when using the concept.

Mathematical Thinking- in order for taught ideas to be understood deeply, they need to be: thought about, reasoned with and discussed with others.

Fluency- Quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics

Variation- Firstly about how the teacher represents the concept being taught, often in more than one way, to draw attention to the main aspects, and to develop a deep understanding. An example would be exploring a concept using multiple representations in order to deepen the children's understanding and underpin mathematical idea. Secondly, it is also about the children practising the

concept, paying attention to what remains the same and what changes. This also allows children to develop an understanding of mathematical relationships and structure.

Teaching and Learning

- Lessons are planned using the White Rose Hub medium term plans, which is broken down into topics by teaching in blocked units. The units consist of a sequence of small steps which feed into short term planning. White Rose Hub addresses the aims of the 2014 National Curriculum of fluency, problem solving and reasoning.
- Learning is broken down into small connected steps and should build on what the pupils already know.
- Collaborative planning between year groups is encouraged to ensure consistency.
- Key questions should be incorporated into short term planning to challenge thinking and develop learning for all pupils.
- Lessons should include the use of concrete resources where necessary to allow pupils to explore the mathematical concepts practically and to help children to link the ideas to abstract mathematical concepts.
- Lessons should be taught through the use of mixed ability groups. However, children working below age related expectations should access a range of interventions, for example, 'in the moment' interventions, 'keep up catch up' sessions or should access a pre-teach before new concepts are taught.
- Fluency, problem solving and reasoning should be interlinked and taught side by side, as opposed to being taught discretely.
- The use of high quality materials to support teaching and learning, is integrated into lessons. These may include White Rose Hub Schemes of Learning and Assessment Materials, classroom secrets, NRICH, NCETM Mastery Assessment, visual images and a range of concrete materials.
- Extra fluency practise should be available daily through the use of morning starter activities or during other times within the class timetable.

Marking

Where possible marking should take place 'in the moment' in order to allow opportunities for 'in the moment' interventions. Marking should be completed in line with the school marking policy. Marking should also include time for corrections to be completed before the following the lesson and where possible, within the lesson itself.

SEND and Inclusion

All pupils should have access to a broad and balanced curriculum, one which ensures that high expectations are set for all pupils, whatever their prior attainment. High quality teaching is essential for children working significantly below age related expectations. In addition to this, SEND provision should also include additional maths intervention and support. This may consist of the following:

- Bridging the Gap Project' (EYFS/Year 1)
- The use of B-Squared as an assessment tool
- Maths Recovery

- Pre- teaching
- 'In the moment' or 'Same day' intervention

It is important all children regardless of their provision, should be given the opportunity to work independently, even if it is only for a few minutes at a time.

Early Years Foundation Stage

Early Years Foundation Stage use 'Fluency in Number'. This is supported by the North West Maths Hub, focusing on a number each week and exploring each number in depth. In early years we have a heavy emphasis on enabling children have a depth of knowledge in each number; we strive for our learners to have fluency in numbers up to 20 by the end of Reception. We follow a 'number a week' approach, as learning a new number a week allows children to explore and deepen their understanding and knowledge of value and maths links with everyday life. Problem solving is at the heart of the 'number a week' approach. There are 7 core strands in EYFS mathematics that we use when planning to teach each individual number, these include; pattern, comparison, number operations (composition), measurement, shape & space, cardinality & counting. As these areas are incorporated each week repetitively with each new number the key skills are embedded which provides our learners with strong foundations of mathematical concepts.

The 5 counting principles are an important part of ensuring children are confident in understanding the value of a number. We use concrete and familiar resources that the children can touch and move around. Through planning short whole class inputs, group time and opportunities in play we strive to ensure our children are confident in counting and understanding value and meaning of a number, this is done by following the 5 counting principles. We strive for our children to understand 'the one-to-one principle' this is where children say one number name for each object being counted, 'the stable order principle' ensures children know that numbers have to be counted in a certain order. 'The cardinal principle' children understand that the last number counted represents how many objects there are altogether. 'The abstract principle' we know anything can be counted; claps, sounds, movements, objects. 'The order irrelevance principle' children know it doesn't matter which way you count an amount of objects, the total always remains the same.

Role of Subject Leader

- Ensures teachers understand the requirements of the National Curriculum and supports lesson planning.
- Leads continuing professional development; ensures all staff have received necessary training through relevant course, in-house staff training or providing coaching for individual teachers.
- Leads whole school monitoring and evaluation of teaching and learning in Mathematics by observing teaching and learning, carrying out learning walks, analysing assessment data in order to plan for whole school improvement, conducting work scrutiny to inform evaluation of progress and conducting pupil interviews to highlight pupils voice in regards to the teaching and learning within mathematics.
- Ensure that the school's senior leadership team and governors are kept informed about the quality of teaching and learning in Mathematics.

- Work alongside the school's senior leadership team to ensure the learning needs of all pupils are met effectively.
- Review the Mathematics Policy regularly to ensure it is kept up to date.

Mathematics Lead- Miss A Bootle

Linked Governor- Mrs H Lowe

Signed: *A. Bootle*

Signed: H. Lowe

Date agreed: April 2020

Review date: