

Maths

Intent

At North Marston C of E School our aim is to develop and foster an enjoyment and enthusiasm for Maths. We want our pupils to be curious about Mathematics as well as understanding its importance in our everyday lives.

The National Curriculum for Primary Mathematics has three aims that are central to Mathematics at North Marston C of E School.

Fluency, Reasoning and Problem Solving

Fluency

The first aim of the National Curriculum in England (DfE 2014) is that all children will *'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'*. As this suggests, fluency is the ability to know different mathematical facts and strategies and to understand how to use and apply them appropriately.

Reasoning

The second aim of the new National Curriculum is that all children can *'reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language'*. Reasoning is a child's ability to explain their understanding of a mathematical concept. In being able to articulate their knowledge, a child is building a secure understanding of a concept.

Problem solving

The third aim of the new National Curriculum is that all children *'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'*. This is where children are applying their knowledge in different contexts, which enables a greater depth of learning.

Implementation

Maths is taught in line with the National Curriculum following the White Rose Scheme of Learning.

We teach Maths for **Mastery** so that pupils develop a deep and adaptable understanding of the subject. Mastery implies being able to use one's knowledge appropriately, flexibly and creatively and to apply it in new and unfamiliar situations.

From Reception to Year 6, a **Concrete, Pictorial, Abstract** approach is central in classroom practice; this involves using a range of concrete and visual resources to help develop a deep understanding of key concepts.

Concrete: In this stage, the children are first introduced to an idea or skill by acting it out with real objects. **Pictorial:** When a child has sufficiently understood the hands-on experiences, they can progress to relating them to different representations, such as a diagram or picture of the objects. **Abstract:** This is the symbolic stage, where the children are able to represent problems using mathematical notations e.g. $10 \div 5 = 2$.

We encourage our pupils to become **independent** learners and to take responsibility for their own learning. Children take ownership of their tasks they complete through self-differentiation and are always encouraged to challenge themselves, understanding that we learn from mistakes. In Key Stage Two, it is regular practice for pupils to mark their own work and are expected to identify where and how mistakes have been made. Across the school, all children have regular opportunities to explain their reasoning verbally.

At the point in which children have secured their expectations in certain areas of the Maths Curriculum their thinking is challenged and extended through open ended, higher order questioning and problem solving activities.

Assessment, Monitoring and Evaluating

Work is marked and assessed in line with the Feedback and Marking Policy. Teachers make on-going assessments of children frequently using a range of methods including; the marking of work, unpicking of misconceptions, analysing errors, observations, questioning, talking and listening. These assessments are used to inform planning and teaching is adapted accordingly. More formal assessments are carried out termly in each year group and Children in Year 2 and Year 6 undergo national statutory assessments towards the end of the academic year. An age related assessment is provided for parents on the annual report.

Impact

The impact of our curriculum is that by the end of each topic, the vast majority of pupils will have sustained mastery of the content, that is, they remember it all and are fluent in it; some pupils have a greater depth of understanding.

Pupils will have:

- Quick recall of facts and procedures
- The flexibility and fluidity to move between different contexts and representations
- The ability to recognise relationships and make connections

There will be an increasing enjoyment, engagement, depth of understanding and attainment in Maths.