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Mill Hill Mathematics Policy

Introduction

‘Mathematics is a creative and highly interconnected 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 mathematical education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the power and beauty of mathematics, and a sense of enjoyment and curiosity about the subject.’ (DfE 2013)

Curriculum Intent, Implementation & Impact

Intent

Mathematics is an important discipline that we want all pupils to enjoy and master as it is essential for everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. Our aim is for our pupils to approach mathematics with a positive, can do attitude. Teachers have high expectations and promote the belief that ‘We can all do maths!’. Our curriculum focuses on securing and deepening pupils understanding of mathematical concepts through manageable steps. Mistakes and misconceptions are embraced as points for new learning and support pupils to embrace challenges, take risks and to be more resilient. We want children to be fluent with mathematical fundamentals and procedures, be able to recall facts rapidly and accurately, reason mathematically using correct vocabulary and be able to solve increasingly more complex and sophisticated problems. Further, we want our pupils to confidently apply and transfer key knowledge and skills to new contexts and recognise the interconnectedness of maths to other subjects and understand that maths is important in the wider world and serves a real purpose.

Implementation

At Mill Hill we have adopted a teaching for mastery approach that supports all children regardless of background, ability or additional needs to deepen their understanding of maths and to improve progress for all. We use the White Rose Maths Schemes of learning (WRM) designed to support a mastery approach to teaching and learning. They cover all the required statutory content and are in line with the aims and objectives of the National Curriculum (2014). The WRM curriculum focuses on pupils developing skills of fluency in the fundamentals of mathematics, being able to reason and to solve problems. Pupils in year groups in the main, move together through the curriculum content. Differentiation is demonstrated through higher attaining pupils being encouraged and challenged to go deeper whilst others are given additional support and intervention including, use of concrete equipment to support tasks, adult support in lessons, pre-teaching of some key ideas to increase confidence and participation in lessons, intervention outside of lessons to close gaps and/or deepen understanding.

The WRM curriculum is carefully structured for continuity and progression and ordered in such a way as to make the learning of mathematics more effective. For each year group, the schemes start with work on place value, followed by the essential calculation skills pupils need to succeed in maths. Some things are deliberately taught before others, e.g. place value needs to be understood before working with addition and subtraction, addition needs to be learnt before looking at multiplication (as a model of repeated addition). The curriculum has a strong emphasis on number skills first, carefully ordered, which can then be used and applied in different contexts. The early focus on number each year gives children confidence and helps them to access the rest of the maths curriculum.

The curriculum is organised into blocks of learning carefully sequenced. Each block is made up of a series of ‘small steps’ which again are sequenced in order of difficulty and dependency. Each step builds carefully from the previous step, building on pupils’ prior knowledge. Built into the curriculum are opportunities for pupils to revisit, consolidate and practice taught skills later in the year and to build further on these skills in subsequent years

Daily maths lessons are planned from the sequence of small steps for each block of learning. This helps pupils to understand new concepts gradually and over time, supporting them to feel confident and secure. Lessons build on prior learning and concepts are taught through making useful connections between identified mathematical ideas and using a variety of representations that aid understanding and retention. All lessons have a clear structure and include elements of fluency, reasoning and problem solving.

SEN Children

SEN children working well below their year group expectations will require a different curriculum design. This will be achieved in consultation with the school SENDCO and relevant bodies where appropriate.

Setting in Key Stage 2

In Key Stage Two children are grouped by attainment into two sets for maths. The aim of setting is to enable more effective and efficient teaching by narrowing the range of pupil attainment in a class. However, sets are fluent and allow for movement throughout the year, should the need arise. Over time, as the WRH scheme is embedded and the attainment spread in EYFS and KS1 is narrowed then setting in Key Stage 2 will be reviewed.

Lesson structure

In Reception –

5 x weekly 15 minute maths sessions (number sense)

Main maths group activity x 1 per week

Maths enhancement activities (part of daily provision)

In Key Stage One –

Children receive a daily lesson of maths (One hour and fifteen minutes)

The lesson is structured as follows

* Number Sense maths (systematic number fact teaching) (15 minutes)
* Memory Jogger (Retrieval Practice) (10 minutes)
* Main Learning and Plenary (50 minutes)

In Key Stage Two – (children are set for maths)

Children receive a daily lesson of maths (One hour and fifteen minutes)

The lesson is structured as follows

* Year 3 Number Sense Maths (systematic number fact teaching)/tables work 15 minutes
* Years 4, 5 and 6 Number Sense Times Tables Fluency Programme and One sum Five ways /Five sums one way (fluency in arithmetic) (15 minutes).
* Years 3, 4 ,5 and 6 Memory Jogger (Retrieval Practice) (10 minutes)
* Years 3, 4, 5 and 6 Main Learning and Plenary (50 minutes)

Class teachers recognise that while they need to have fidelity to the WRH scheme they need to design their lessons depending upon the needs of their class/set. For example, this may mean that the class/set need more fluency practice in a certain area, or that not all of the resources for a particular WRH lesson may apply to them.

Impact

The impact of the maths curriculum is measured through the following methods-

* Lesson Observations
* Learning Walks
* Book scrutinies
* Pupil Voice/ children’s attitudes to learning
* Pupil progress meetings (based on termly data input).

Teacher Assessment

* Written work, oral work, collaborative work in the classroom
* Formative assessments (WRH unit pre-assessments/post assessments)
* Summative assessments (Termly Testbase/ NFER)

Effective feedback from the above to relevant staff will highlight any need for CPD which will in turn, further improve the quality of curriculum delivery.

Interventions

Intervention takes place through

* pre-teaching, keep up (immediate intervention and catch up (planned intervention).
* EEF approved specific intervention schemes.