Grange Primary School



Intent, Implementation and Impact Statement: Maths

Intent

At Grange Primary school our aim is to provide effective and engaging learning opportunities to equip children with the foundational knowledge and skills to become confident mathematicians as they advance through their school years. We believe that every child has the potential to succeed in mathematics and beginning from the Early Years, we foster a love of the subject through activities that promote curiosity, critical thinking and problem solving from an early age. Through a combination of teacher-led instruction and child-led exploration, we aim to develop children's understanding of mathematical concepts, their ability to reason and best ways to communicate their mathematical thinking. We encourage children to learn from their mistakes and challenge them to persist until they find the answer; fostering resilience in the face of challenge.

We want the children of Grange Primary School to develop a sense of curiosity and enjoyment about mathematics. The use of a mastery approach to the teaching and learning of mathematics is based on the belief that all learners can enjoy and succeed in mathematics. Grange has taken on a curriculum that is ambitious and designed to give all learners, particularly the most disadvantaged, the knowledge and cultural capital they need to succeed in life. Children take part in daily mathematics lessons which foster an enquiry approach, reasoning skills are built on and children enjoy a daily discussion around the maths they learn.

Implementation

Teachers' subject knowledge is developed through regular CPD supported by the Maths Hub and NCETM. Senior leaders provide effective support for teachers and support staff who need additional development. The maths curriculum is coherently planned and sequenced towards cumulatively sufficient knowledge and skills for future learning. Mathematical concepts that are taught earlier in the curriculum are revisited in the context of a new area of mathematics. This helps learners to make connections between different mathematical concepts. Retrieving, using and applying concepts regularly, transferring to new contexts helps develop fluency as well as conceptual understanding.

This design helps learners to remember in the long term, the content they have been taught and to integrate new knowledge into larger concepts. Children are provided with the tools they need to develop their mathematical thinking, conceptual understanding and language and communication though the use of a concrete - pictorial - abstract approach to teaching and learning of maths.

From Early Years, we teach pupils specific mathematical vocabulary and encourage children to become fluent in their approach in the fundamentals of mathematics, to reason mathematically and to solve problems by applying their knowledge in a number of areas. We encourage talk throughout our lessons with the use of stem sentences, allowing children to express themselves orally to help them build communication skills. It forms an important part of developing understanding of mathematical concepts and their ability to reason mathematically. This also supports those with English as an additional language to participate on equal terms with their English-speaking peers.

This serves our school community well as 51% of our children speak English as an additional language and the curriculum focus on language and communication allows pupils to deepen their understanding by explaining, creating problems, justifying and proving using mathematical language. This acts as a scaffold for their thinking and deepening their understanding further.

Impact

Teaching mathematics through mastery beginning in the Early Years has a significant impact of on students' understanding and confidence in their mathematical abilities. The impact of this approach to the teaching and learning of mathematics is increasing enjoyment, resilience, understanding and attainment in maths for all children. By teaching students through the process of breaking down concepts into smaller, more manageable pieces, with the use of manipulatives and pictorial representations, students are able to build a strong foundation of understanding. Learners know more, remember more and are able to do more mathematics because the curriculum has developed their ability to take new ideas or relationships and incorporate them into their current understanding and see how they connect with ideas and relationships they have previously encountered.

The mastery approach allows pupils at Grange Primary to build a strong foundation of understanding, allowing them to apply this knowledge in a variety of situations- confidently moving forward as they encounter more complex concepts and problems. Students make sense of the mathematics they are learning, and have more memorable and enjoyable experiences, encouraging long-term mathematical memory. They will also be able to do more as they understand how to push the boundaries of what they know and apply it to solve problems. The curriculum provides opportunities and guides teachers in asking questions that will reveal learners' understanding of a concept. It provides opportunities for meaningful dialogue to take place in lessons. It is by giving learners opportunities to talk, and by listening carefully to what they say, that teachers gather some of the richest data on their understanding. This data influences next steps, future planning and teaching, while providing formative assessment opportunities. In addition, termly summative assessments provide information to further support teacher judgements and identify any gaps in learning.

Children at Grange Primary gain the opportunities to practise, reinforce and discuss their processes, which helps students retain knowledge and build fluency in order to become life-long mathematicians.