

Mathematics Intent, Implementation and Impact

Mathematics Curriculum Aims & Rationale

Intent

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

At Sacred Heart RC Primary School our intention is to provide a high-quality mathematics curriculum which promotes confidence and enjoyment, and inspires curiosity about Maths. It is our belief that every maths lesson should be a hive of activity, where hands-on exploration and peer-to-peer discussion creates excitement, builds positive attitudes and ensures that children feel safe to make mistakes. We want every child to thrive and succeed in their maths lessons, enabling them to transition to secondary school as confident mathematicians with a secure foundation upon which to build in Key Stage 3 and 4. We ensure that lessons are carefully and skilfully crafted to be engaging and accessible to every learner irrespective of their ability or starting point. Through Teaching for Mastery, we intend for our children to develop a deep-rooted and long-term understanding in all areas of Maths, allowing them to become adept in the three overarching aims of the

National Curriculum. By adopting a concrete, pictorial, abstract approach in lessons, every child has access to a wide range of quality manipulatives, models, diagrams and representations, which supports their conceptual understanding.

Implementation

Maths lessons take place daily across the school and are delivered through quality first teaching using a 'spiral' curriculum. This approach introduces concepts progressively and revisits them regularly, thereby giving children the opportunity to build on and develop their skills, and ultimately to achieve mastery of them.

In EYFS, we recognise the importance of children becoming grounded in mathematical concepts as early as possible. To facilitate this, we ensure that there are many rich opportunities for our children to build and apply their understanding across all areas of mathematics, with a strong emphasis on counting confidently; gaining a deep understanding of numbers to 10; spotting patterns and relationships within and between numbers; calculating simple addition and subtraction problems; and developing their spatial reasoning skills. All children have dedicated time to work with staff, both in small groups and on a one-to-one basis, where learning is tailored to individual needs and ability. Furthermore, there are a wide range of carefully-planned maths activities and games within the continuous provision for the children to access. As children transition from Reception into Year 1, the majority will have developed a secure base of knowledge and vocabulary.

In both Key Stage 1 and Key Stage 2, maths lessons broadly follow the Maths No Problem scheme, which is endorsed by the DfE. Each year group has four Maths No Problem lessons each week, adapted by our teachers to ensure they meet the individual needs within their classes. Each lesson has a strong emphasis on problem solving and reasoning, and immediately 'hooks' the children with a real-life problem for them to investigate. They then explore different methods and strategies to solve the problems, drawing on a range of age-appropriate manipulatives and models, including cubes, counters, tens frames, rekenreks, Base Ten, number lines and bar models. During lessons, children are encouraged to articulate their learning using words, diagrams and abstract representations, in their daily maths journal. Each lesson culminates with the opportunity for children to work independently, applying their skills to a range of similar problems. Differentiation is

through pre-planned, targeted questioning which ensures all learners are challenged appropriately. Whilst scaffolds are provided for children who need additional support to reach the expectation within the lesson, extension challenges are provided for those who have met or exceeded expectations, with the aim of deepening their understanding of the concept even further.

One of the five weekly maths lessons in each year group is given to the discrete teaching of fluency skills in order to develop rapid recall of number facts including times tables, number bonds and addition and subtraction facts, and to develop speed and accuracy when performing mental and written calculations. To further embed fluency, we have three short fluency sessions delivered in 10 minute bursts throughout the week, aimed at repeating key skills and knowledge until they become automatic. These sessions are based on fluency resources created by Herts for Learning.

In all lessons, pupil talk is highly valued as a means of developing the children's skills in mathematical reasoning and ensuring they acquire a broad mathematical vocabulary.

All staff receive high quality CPD in maths which is provided internally by the maths leads within Romero Academy and through Origin Maths Hub. Maths Leads at Sacred Heart provide coaching for staff in Maths lessons to ensure that teaching and learning in lessons is of the highest standard.

Impact

Through targeted questioning and a wide range of AFL strategies, children are continuously assessed within maths lessons to track the progress of every child. Where possible, teachers use on-the-spot marking to give children immediate feedback on their learning within lessons. Through this approach, children who find the learning difficult are swiftly identified and support is given so that they can access and succeed within the lesson. Across the school, maths interventions are delivered every afternoon for those who require it, to ensure that errors and misconceptions are addressed, gaps are filled and every

learner is ready to access the lesson the following day. In addition, we provide pre-teaching to a small number of children who we feel may benefit from a short introduction to new concepts or vocabulary prior to the lesson; this ensures they enter the lesson with confidence.

From Key Stage 1, maths skills are assessed termly and in-depth question-level analysis follows. This enables teachers to identify individuals and groups for targeted intervention in areas specific to them.

On leaving KS2, pupils will have a secure foundation in the key skills and aims of the Primary Mathematics National Curriculum. They will be fluent mathematicians with the ability to problem solve and reason confidently. Furthermore, they will have a positive attitude towards maths as they move forward with the next stage of their maths learning.