

Mathematics: Intent, Implementation, Impact

Without mathematics, there's nothing you can do. Everything around you is mathematics.

Everything around you is numbers. — Shakuntala Devi, Indian writer and mental calculator

Intent *How does it link to our curriculum vision? What is the scope of learning? What do we intend children to learn?*

At North Clifton Primary School, we intend on delivering a rich and ambitious curriculum which:

- Teaches progressive skills and knowledge from EYFS to Year 6, that are well sequenced and that meet the statutory requirements of the EYFS Framework and the National Curriculum
- Uses the Teaching for Mastery approach so that all children achieve
- Allows children to become fluent in the fundamentals of mathematics through creative and engaging lessons that give them a range of opportunities to explore mathematics
- Gives children opportunities to reason and problem solve, by applying mathematics to a variety of increasingly complex challenges in Maths and across the curriculum
- Develops conceptual understanding and the ability to recall and apply knowledge fluently and rapidly
- Develops oracy so children can communicate their ideas effectively
- Ensures children believe in themselves as mathematicians, and so that they are able to apply resilience and perseverance
- Has high aspirations; by the end of each key stage we aim for all children, regardless of context, background or starting points, to make rapid progress towards achieving age-related expectations or beyond and to be at least in line with their peers nationally. Where this is not the case, any gap to their national peers is closing rapidly
- Prepares children for the next stage in their education
- Prepares children for using mathematics in their future careers

Implementation *How is the teaching of Mathematics organised?*

The school's curriculum meets the statutory requirements of the EYFS Statutory Framework and the National Curriculum. This is studied by all children in their relevant Key Stage. In school, we use the White Rose Schemes of work as a guide to support the delivery of the EYFS Framework and the National Curriculum. This creates continuity and progression, applying a Mastery approach in the teaching and learning of mathematics. Children are taught in Year group specific groups.

Mastery: 'Mastering maths means pupils acquiring a deep, long-term, secure and adaptable understanding of the subject' (NCETM). Our curriculum is designed to develop children's knowledge of coherence, representation & structure, mathematical thinking, fluency and variation.

The Concrete Pictorial Abstract (CPA): The CPA approach is used throughout all stages of the lessons, to support conceptual understanding and to make links across topics. Through this, our children gain a secure understanding of concepts to support fluency in maths and their ability to problem solve.

Vocabulary: Key vocabulary is introduced and revisited regularly to develop language acquisition and for children to be able to communicate their ideas and thoughts effectively. Adults model reasoning and problem solving, providing sentence stems to support children to articulate their thinking. We ensure our children have opportunities throughout every lesson to apply mathematical vocabulary through the use of peer support, talk partners and verbal reasoning explanations.

Enrichment/Challenges: Children who have shown understanding at a deep level access enrichment/challenges with deeper knowledge questions or activities to develop their skills further.

SEND: All lessons are inclusive. Children with additional needs are included in mixed ability groups and teachers provide scaffolding and relevant support as necessary. Lessons are planned and resourced to enable all children to access their learning, helping them to engage and be challenged. All lessons take account of individual children's SEND needs. The structure of the Mastery approach supports SEND children at all stages of the lesson.

Recall, Retrieve and Assessment:

Recall /Activating prior knowledge: The recall of key basic skills facts e.g. subitising, number bonds, times tables is fundamental to problem solving. Each lesson begins with starter questions, which recalls prior knowledge to support new learning. Opportunities to practice basic skills are timetabled every day, using 'Fluent in 5' materials (NCETM), and Timetables Rockstars (TTR).

Retrieve: Daily 'Flashback' questions ensure children are revisiting key concepts. Questions provide opportunities to retrieve and consolidate previous learning i.e. from the previous step; the previous week; from 2-3 weeks ago and from the previous term. Where errors/misconceptions are identified from Flashbacks, concepts are revisited either at the point of marking or during a Next Day Intervention (NDI).

Assessment: Formative assessment (Assessment for Learning-AfL): occurs within every lesson, identifying children who need more support to achieve the intended outcome and those who are ready for greater challenges; Staff respond and adapt their teaching as necessary based on the outcomes of AfL strategies. Misconceptions are addressed swiftly within a lesson and further opportunities are provided for children to revisit a concept e.g. Next day Interventions (NDIs)

Summative assessments:

EYFS- End of Key Stage assessment judgements for the Early Years are based on teacher assessments using the ELGs from the EYFS Statutory Framework. Teacher judgement is supported by the Reception Small Steps in Progress documents (White Rose Maths). Over the three terms, assessment information will inform end of year progress towards a Good Level of Development (GLD)

Children are defined as having reached a Good Level of Development (GLD) at the end of the EYFS if they have achieved the expected level for the ELGs in the prime areas of learning (which are: communication and language; personal, social and emotional development; and physical development) and the specific areas of mathematics and literacy (Early Years Foundation Stage Profile 2024 handbook, p.6)

KS1 & KS2: Summative assessments are completed each term (Using White Rose Assessments Y1, 2, 3, 4, 5 and past SATs papers Y2, Y6), to inform the gaps in learning which can be addressed in subsequent lessons. Access arrangements are in place for all year groups where required, based on the Y6 criteria.

The school is supported by the East Midlands Mastery Maths Hub which also provides additional training and networking opportunities.

Impact *How do we know how well the children are doing?*

- As a result of our comprehensive maths curriculum, children know more, remember more and can do more
- They are able to demonstrate Mastery skills in coherence, representation & structure, mathematical thinking, fluency and variation. This is evidenced in books and through overall outcomes
- Children show fluency and efficiency in calculation
- Children are efficient, effective problem solvers, applying problem-solving and reasoning skills, able to explain their methods and thinking processes and apply skills in context
- They have the flexibility and fluidity to move between different contexts and representations of mathematics.
- Lessons are rich in concrete manipulatives, pictorial representations, which lead to the abstract.
- Children use high quality, accurate vocabulary appropriate for the task or discussion.
- Children show a positive attitude to maths in lessons and during pupil interviews. They are confident and able to recall and apply mathematical knowledge in different contexts. They show Resilience (a school Value), to setbacks, demonstrating persistence in the face of difficulties, especially when working on problem solving challenges.
- Maths books and assessments show progress for each child; By the end of each Key Stage, children make progress towards achieving age-related expectations, at least in-line with their peers nationally. Where this is not the case, any gap to their national peers is closing rapidly.
- They enjoy maths and understand the value of maths for their future careers.
- They are ready for the next stage in their education.