Corbridge C of E First School
Maths Policy

Purpose of study

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 mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Intent

Mathematics enables children to make sense of the world around them. Our aim is to provide a rich, stimulating and connected curriculum accessible to all pupils right through from Nursery to Year 4 and beyond.

In doing so, we want to ensure our pupils:

1. 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
2. Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
3. 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.
4. Become confident with maths language; to be able to present their thinking and reasoning through the use of maths vocabulary.

We are committed to developing children's curiosity about the subject, as well as an appreciation of the beauty and power of Mathematics.

Implementation

We use the White Rose Schemes of Learning to guide our teaching of maths from Nursery to Year 4 (WRM Nursery scheme factored in from Autumn 2 2024). In EYFS there are two main strands to learning - 'number' and 'numerical patterns'. Within number, children develop an in depth knowledge of numbers to ten, recognising quantities to 5 and number bonds to 5. Within numerical patterns, children will learn to count beyond 20, compare quantities up to 10 and explore and represent patterns.

White Rose is based on the mastery approach which aims to challenge each child across school to be the best they can be. It breaks the curriculum down into small, manageable steps that all children work on in a daily lesson together. Those that need support are given additional teaching or structuring, this may be before, during or after the lesson as appropriate. Those that need further challenge are given rich tasks and deeper problems to build a more profound understanding.

The schemes interleave prior content in new concepts. For example, when children look at measurement, there are lots of questions that practice the four operations and fractions. This helps children make links between topics and understand them more deeply.

There is a distinct focus on number work. Children who have an excellent grasp of number make great mathematicians. Spending longer on mastering key topics will build a child's confidence and help secure understanding. We look to reinforce number fluency throughout the year. This is done as mental and oral starters or in additional maths time during the day.

Reasoning and problem solving are integral to the schemes and to our approach. We expect each lesson to have an element of applying knowledge and skills. It is through such activities that children see the real purpose of maths, and gain the most enjoyment and satisfaction.

Times tables are practised regularly both at school and at home and are assessed weekly. We use interactive, exciting resources such as Times Tables Rockstars to support exploration, progression and fluency through various ICT and manipulatives including online

EYFS

In Early Years, continuous provision is carefully planned to ensure a variety of mathematical activities are available for children to access freely. These activities encourage the learning of Maths in a child-led environment, where teachers model and use questioning to encourage children to explore mathematical concepts. Mathematical language is modelled to children in order to encourage discussion during play and through the use of books and rhymes. Children are also taught in groups each day, where the White Rose planning is used to support the Early Learning Goals, to ensure that children are given the opportunity to master the fundamental mathematical skills.

KS1 & 2

The curriculum is designed to support pupils to be able to perform simpler tasks so that they can move on to more complex ones. This leads to a sequence of 'blocks' of mathematics. Within each of these blocks are 'small steps' which again are sequenced in order of difficulty and dependency. Each step leads carefully from the previous one, building on pupils' prior knowledge in order to develop new skills. Fluency, reasoning and problem solving are integrated into classroom practice.
We provide pupils with a variety of concrete and pictorial representations to reinforce their learning. Teachers use careful questions to draw out children's discussions and their reasoning. Everyone has access to a range of equipment to embed and deepen their understanding. Some pupils may require additional support out of class to look back over the steps covered or to deliver short targeted sessions before a topic is taught. Lessons provide opportunities to achieve greater depth, with children being offered rich and sophisticated problems, as well as exploratory and investigative tasks.

Arithmetical fluency is reinforced daily across all year groups. These concepts are revisited through other topics across the year. In Years 3 & 4, times tables are practised regularly both at school and at home and are assessed weekly.

We encourage opportunities for exploring and investigating maths across the curriculum, outdoors and in the wider world.

Impact

We believe that the impact of using our personalised Maths curriculum, together with the progressive steps and blocks, will result in:

- children responding enthusiastically and with enjoyment to maths in all contexts in the belief that 'we can all do maths'
- fast recall of facts and procedures
- flexibility and fluidity to move between different contexts and representations of maths
- ability to recognise relationships and make connections in maths lessons
- level of pride in the presentation of the work
- regular and ongoing assessment that informs teaching which, in turn, supports each child to make progress
- a lifelong connection with and love of maths

Inclusion

Within the mastery curriculum, inclusion is achieved by emphasising deep knowledge and through individual support and intervention. Teachers use precise questioning in order to develop, extend and assess pupil's knowledge. The intention is to provide all children with full access to the curriculum, enabling them to achieve confidence and competence – 'mastery' – in mathematics.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Children with gaps in their knowledge or who experience difficulties with mathematical concepts are supported through a variety of methods including; pre-teaching of concepts, small group tuition, over learning strategies, bespoke learning plans and specific interventions such as the concept development model.

Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who show a particular aptitude for maths are challenged to visualise and represent mathematics in different ways. They use and apply their knowledge in complex problem solving and develop their mathematical explaining and reasoning skills through exploring and reflecting.

The Maths curriculum is adapted and enabled to allow access for all pupils.

Assessment

EYFS

Nursery are assessed against termly progress check points.

The Reception Baseline Assessment (RBA) is carried out in the Autumn Term (in the first six weeks of pupils starting school) and includes assessment of mathematics. The practical one-to-one assessment tasks consist of:

- early number
- early calculation (early addition/subtraction)
- mathematical language
- early understanding of pattern

Throughout the rest of Reception Year the children are assessed against the Early Learning Goals termly progress check points.

Key Stage 1 and Lower Key Stage 2

Assessment is used to guide the progress of individual pupils and groups of pupils in mathematics. It involves:

Assessment for Learning

- learning objectives are shared with the children in each lesson;
- pre-assessment and pre-teaching as appropriate
- close observation of the children at work and targeted questioning;
- peer and self-assessment used to allow children to consider their progress in relation to a lesson's learning objectives or overall block e.g. length and perimeter;
- marking that relates to how well a child has achieved against the learning objectives for the lesson;
- a marking system that is agreed across the school to ensure consistency of assessment;
- verbal (in the moment) and written feedback;
- reviewing, evaluating and modifying planning in light of children's achievements.

Assessment of Learning

- formal summative assessment which is carried out at the end of each National Curriculum Key Stage (i.e. Year 2) through the use of SATs and teacher assessment;
- White Rose Maths block assessments
- White Rose Maths end of term assessments (arithmetic and problem solving and reasoning);
- teacher assessment in mathematics for each child is updated termly using curriculum assessment grids and GDS (greater depth standard) trackers where appropriate.
- internal and external moderation;
- annual summative assessment using evidence and data gathered;

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