Maths Policy

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WillowTree
Primary School

Your adventure starts here

Rationale

Mathematics is a creative and highly inter-connected 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.

Purpose of Study, National Curriculum 2014

Aims

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.*

Aims, National Curriculum 2014

Implementation

Willow Tree is working towards developing '**Teaching for Mastery**' in our maths curriculum.

An important feature of teaching for mastery is that the whole class works on the same topics at broadly the same pace, with lots of time and practice in each topic before moving on. An idea is carefully introduced and formed, then reinforced by lots of practice over a series of lessons. This enables children to develop a deep and long-lasting understanding of the concepts being taught.

Teachers are supported in delivering a teaching for mastery curriculum by a range of carefully chosen resources and schemes, including the 'Maths-No Problem!' scheme (in Years 1 to 6), the Mastering Number Programme (in Reception, Year 1 and Year 2) and the Earlybird Kindergarten Mathematics textbooks (in Nursery and Reception).

Why did we choose the 'Maths – No Problem!' scheme for Years 1 to 6?

- The scheme is based on **research and evidence** and endorsed by the Department for Education, Ofsted and the NCETM (National Centre for Excellence in Teaching Mathematics).
- It builds students' **mathematical fluency**, **reasoning** and develops their ability to **solve problems -** the key aims of the maths curriculum.
- The scheme teaches pupils to understand maths in stages, often beginning with **concrete objects** (such as counters, Base 10 and number disks), then moving to **pictorial representations** (representing problems using pictures), and finally working in the **abstract** (where children represent problems using mathematical notation, such as 12 ÷ 4 = 3). Through this process, children learn numerous strategies to work with numbers and build understanding and confidence in maths.
- The scheme encourages pupils **learn to think mathematically**, as opposed to reciting formulas/'tricks' they don't understand.

What would you see in a 'Maths – No Problem!' lesson?

Each lesson is divided into distinct parts: an explore task, guided practice and independent practice. During the explore task, children work in groups on a problem from the textbook, discussing, clarifying and developing their ideas and sharing these with the rest of the class. During guided practice, children work through further questions from the textbook with a partner but under the guidance of the teacher, to practise an idea that has been developed in the anchor task. The final section of the lesson is independent practice, where the children work in their own workbook to apply the ideas taught that lesson.

Within a mastery curriculum, the differing abilities of the children within our school will be catered for through the questioning and scaffolding individual pupils receive in class as they work through problems. Children who grasp ideas quickly and confidently will be challenged through more demanding problems which deepen their knowledge of the content. Where children are struggling, they will receive intervention to support them to keep pace with their peers.

For more information, please feel free to talk to the staff in school or visit the 'Maths - No Problem!' website, which includes a range of information and videos about the ideas behind the scheme's approach. Two useful links to the website are:

https://mathsnoproblem.com/en/mastery/what-is-maths-mastery/

https://mathsnoproblem.com/en/mastery/what-is-singapore-maths/

Mastering Number Programme

The Mastering Number Programme was developed by the NCETM (National Centre for Excellence in Teaching Mathematics) and Maths Hubs. The project aims to secure firm foundations in the development of good number sense for all children from Reception through to Year 1 and Year 2. The aim over time is that children will leave Key Stage 1 with fluency in calculation and a confidence and flexibility with number.

The programme involves a daily 10-15 minute teaching session for all pupils in the class. In Reception, the Mastering Number sessions are the basis of the main mathematics lesson each day. In Year 1 and Year 2, the Mastering Number sessions are taught in addition to the main 'Maths – No Problem!' lesson.

Mathematics in the Early Years (Nursery and Reception)

Maths teaching in the Early Years involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers; calculating simple addition and subtraction problems; and describing shapes, space, and measures. Children will develop their understanding through planned, purposeful play and through a mix of adult-led and child-initiated activity.

Teachers in Nursery use the 'Earlybird Kindergarten Mathematics' textbooks to support children's mathematical development.

In Reception, teachers use the 'Mastering Number' Programme supplemented by some sections of the 'Earlybird Kindergarten Mathematics' textbooks.

Assessment

Assessment will be based on observation, discussion and product, where appropriate, and will be a continuous process throughout school. Formative assessments will inform teachers' planning and termly judgements.

At the end of each term, teachers in Years 1 to 6 will assess the overall achievement of each child in Mathematics and enter their teacher assessment onto the class' Assessment Excel Book. The teacher assessment will be informed by any RTP criteria achieved that term, reviews of learning and any summative assessments carried out. Summative assessments will include Maths - No Problem reviews and revisions (carried out as the scheme progresses) and the NfER tests (which will be carried out at the end of each year in Years 1, 3, 4 and 5). SATs will also form part of the assessment process in Year 2 and Year 6. The result of teacher assessments and the standardised tests will form part of the school's monitoring procedures.

In the Foundation Stage, children are assessed using the Baseline at the start of Reception. Nursery and Reception children are informally assessed throughout the year to inform their next steps of learning. Children's progress through the curriculum and against the Early Learning Goals associated with the Mathematics area of learning are assessed on an ongoing basis and recorded. These judgments inform the Early Years Foundation Stage Profile at the end of Reception. For further details see the school's Assessment Policy.

Reporting to Parents

Mathematics is part of the written report given to parents at the end of the school year. Verbal reports are also made at the Parents' Evenings in the Autumn and Spring terms. Parents may ask for further details and clarification throughout the year.

Staff Development

Identified training needs of individuals or the whole staff will be supported by the provision of in-service courses, either within school, within the LA or by other providers, mainly the Turing NW Maths Hub.

Monitoring

The maths team and SLT will monitor the implementation of this subject, through pupil interviews, learning walks, observations in classroom, scrutiny of work and monitoring of planning.

Class teachers and the Headteacher meet on a termly basis for a pupil progress meetings to analyse the cohort data for each year group and identify children that need further help to meet age-related expectations.

The governing body are kept updated through reports from the Headteacher and subject leader.

Policy Review

This policy will be reviewed every two years, or as and when it is necessary due to changes in the curriculum or implementation of government initiatives.