Mathematics Policy

The Willows Primary School

Explore - Dream - Discover

Aim

At The Willows we have adopted a mastery approach for the teaching of mathematics. Underpinning this pedagogy is the belief that all children can achieve in maths. We believe in promoting sustained and deepened understanding by employing a variety of mastery strategies, with teaching for conceptual understanding at the heart of everything we do. We aim to create independent mathematicians who are well equipped to apply their learning to the wider world.

Intent

At The Willows Primary School, our children are Mathematicians!

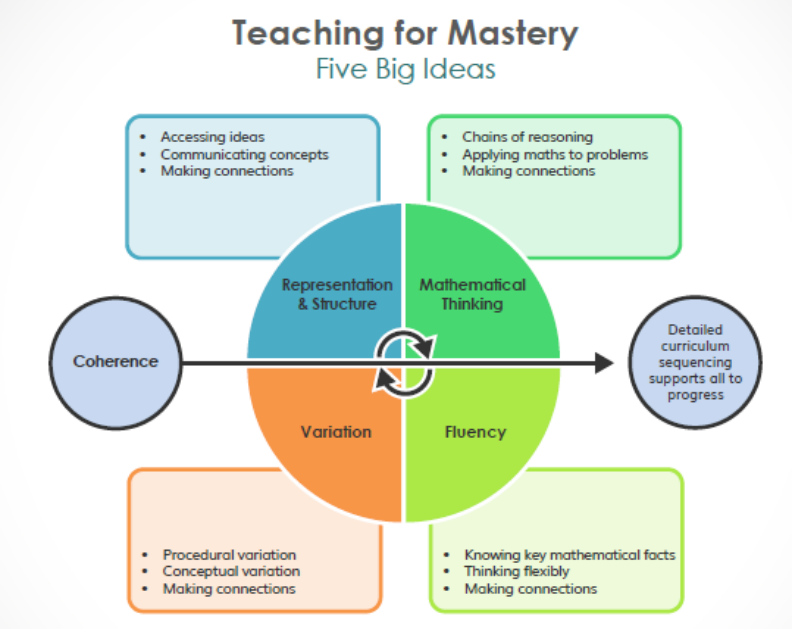
Our Maths provision at The Willows Primary School aims to build a curriculum which develops learning and results in the acquisition of knowledge and skills so that all pupils know more, remember more and understand more.

When teaching mathematics, we intend to use a variety of teaching methods and resources that allow all pupils equal access to mathematics and to experience maths success and enjoyment throughout their lives. Over time, children will become more resilient learners who are able to understand that to make mistakes or become stuck is a necessary step in any learning. Children will be appropriately challenged and supported through varied fluency, reasoning and problem solving. Irrespective of personal starting points, children will explore maths in depth, and use a range of mathematical vocabulary to reason and explain their own thinking. Pupils will continue to build their knowledge by recalling and adding to previous knowledge and skills, then apply these new skills to a wide variety of contexts both within maths and across the curriculum.

We implement our approach through quality first teaching and the delivery of appropriately pitched work for all groups of learners supported by the materials from White Rose Scheme of Learning, NCETM and links with local Mastery Hub.

Embedded throughout lessons are the 5 Principles of Mastery. To ensure lessons are coherent they are broken down into small, connected steps that gradually unfold the concept, providing access for all children and leading to a generalisation of the concept and the ability to apply to a range of concepts. Representations are used in lessons to expose the mathematical structure being taught, with the aim to be that pupils can do the maths without recourse to the representation. Mathematical thinking encourages the pupils to think, reason and discuss ideas and strategies within their classroom environment. Pupils become fluent mathematicians through quick and efficient recall of facts and procedures and the flexibility to move between different contexts and representations of mathematics. Variation is built on over a sequence of lessons and represents concepts in more than one way.

Implementation



At The Willows, we follow the National Curriculum and use White Rose Mastery maths resources to support the planning and delivery of mathematics throughout the school. Our curriculum is designed to develop children's knowledge and understanding of mathematical concepts from the Early Years to the end of Year 6. We strongly believe that all children can achieve in mathematics.

- Coherence: Our carefully, sequential and progressive planning builds on this key element of mathematics and children's learning. We provide the children with the opportunity to develop a deep and connected understanding of mathematics which they can apply in a range of contexts.
- Representation and structure: Children are given opportunity to develop their learning and understanding through a CPA approach which runs throughout The Willows.
- Mathematical Thinking: Mathematical thinking is central to how pupils learn mathematics and includes looking for patterns and relationships, making connections, conjecturing, reasoning, and generalising. Pupils actively engage in mathematical thinking in all lessons, communicating their ideas using precise mathematical language.
- Fluency and Variation: Much emphasis is place on recall of key number facts and procedures for fluency, so that pupils can think deeply about concepts and problems. We aim for our children to move between different contexts and representations of mathematics, to recognise relationships and make connections, and to choose appropriate methods and strategies to solve problems.

EARLY YEARS

Through our Maths Mastery approach, number fluency is continually developed within early years, our Mathematical curriculum covers 'Number and Shape, Space and Measures.' Children participate in short maths sessions daily and are given time to explore mathematical concepts, test ideas, develop their understanding and practise taught skills

through play. Maths can be found in all areas of our provision and children experience it in a purposeful and meaningful context within their play and daily routines: children are encouraged to use their mathematical understanding and skills to solve real life problems.

EYFS read a wide range of texts which are carefully linked to their main themes. They also have a list of texts which are used throughout the year to support mathematical concepts.

KEY STAGE 1 AND 2

- From Y1 through to Y6, Maths lessons are planned and delivered using the White Rose Scheme of Learning resources to support the careful planning of each small step for each unit. It is underpinned by the concrete, pictorial, abstract (CPA) approach. Classrooms have a range of mathematical resources made available for children in each key stage. These include, but are not limited to, Numicon, Base 10, place value counters, bead strings, number lines, digit cards and hundred squares. Pre teaching and same day interventions are utilised in response to teachers' ongoing formative assessments through effective deployment of teaching assistants.

- In addition to daily maths lessons, KS1 access the mastering Number programme which aims to secure the firm foundations needed in the development of good number sense through the use of appropriate manipulatives.

- Y2 - Y6 children access a daily maths skills session designed by their teacher. This provides opportunities for all children to practise their mental and calculation knowledge. This serves to reinforce and consolidate previous learning; increase fluency, speed and accuracy; and improve confidence through the spaced learning approach. Regular use of 'TT Rockstars' within school and home enables children to practise multiplication and division knowledge**.**

- Throughout each lesson formative assessment takes place and feedback is given to the children through live marking. Teacher's then use this assessment to influence their planning and ensure they are providing a mathematics curriculum that will allow all children to progress.

- In addition to the daily maths lessons children complete a daily five which secures fluency in current and previously taught lessons as well as a once weekly arithmetic session (Y2-6).

Impact

By the end of KS2 we aim for children to be fluent in the fundamentals of mathematics with a conceptual understanding and the ability to recall and apply knowledge rapidly and accurately. They should have the skills to solve problems by applying their mathematics to a variety of situations with increasing sophistication, including in unfamiliar contexts and to model real-life scenarios. Children will be able to reason mathematically by following a line of enquiry and develop and present a justification, argument or proof using mathematical language. Children will also recognise the importance of Mathematics as a facilitating subject to enable them to access other areas of learning and operate successfully is everyday life both now and in the future.