

# Maths at Whitehouse Primary School

Our maths provision aims to create a culture of high achievement in maths which leads to confident children who master the key concepts of fluency of calculation, logical reasoning and problem solving i.e. a Mastery Approach to mathematical learning

## Big Ideas

•**Fluency:** the ability to perform mathematical operations and processes accurately and quickly. Mathematical fluency has 4 parts: accuracy, automaticity, speed, flexibility.

•**Reasoning:** The ability to logically justify and identify key information in problems. To select the most appropriate process to arrive at a solution.

• **Problem Solving:** to able to think systematically in order to make appropriate decisions to apply known skills in a variety of contexts.

The Mastery approach is at the core of all our learning from EYFS to Y6.



## Content and Sequencing

In the Foundation Stage we follow the Big Ideas in Early Mathematics taken from the Erikson Institute Early Math Collaborative (Chicago) which cover themes around sets, number sense, counting, number operations, pattern, special relationships, shape, measurement and data analysis. As outlined in the National Curriculum, the principle focus in **Key Stage 1** is to ensure that children develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and four operations, including practical resources. Children should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. In Year 2 teaching ensures that the content provided in exemplification materials is also covered.

**Lower Key Stage 2-** (Years 3 and 4) it is expected that children become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that children develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage children develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that children draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number. By the end of year 4, pupils should have memorised their multiplication tables to and including the 12 multiplication table and show precision and fluency in their work.

**Upper key stage 2** –(Years 5 and 6) The principal focus at this stage is to ensure children have the opportunity to extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio. At this stage, children should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, children are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them.

School progression documents are available for the following topics:

- Place Value
- Addition and subtraction
- Multiplication and Division
- Fractions, Decimals and Percentages
- Geometry
- Measures
- Statistics



## Links with Wider Curriculum

•**History:** Chronological ordering of dates and timelines, calculating timescales including reigns of monarchs, Roman Numerals.

•**Geography:** Map work with links to position and direction including grid references, knowledge of time zones, data handling and analysis of statistics, measures including temperature, straight line distances and economic activity links to money.

•**Science:** Gathering and recording scientific results including through a variety of different measures and then presenting this information through data handling. Links to 3D shapes with the moon being a roughly spherical body(Year5).

•**Art:** Patterns. Use of perpendicular and parallel lines.

•**Design Technology:** Links to measures including measuring materials accurately and to money with costing products.

•**Languages:** Counting, reading and writing numbers in a different language.

•**Music:** identifying repeated patterns.

•**Computing:** To reason about algorithms making amendments to sets of instructions to debug code overcome any experienced problems.



## Automaticity

•**EYFS:** ability to count fluently forwards and backwards. Instant recall of key number bonds.

•**KS1:** continue consolidation of all number bonds within 20. Instant recall of majority addition and subtraction facts to 10 +10.

•**Lower KS2:** instant recall of multiplication facts and corresponding division facts.

•**Upper KS2:** build on knowledge to apply to decimal complements and fractions, decimals and percentages equivalences



## Progress

Units of work are carefully sequenced so prior knowledge and concepts are built upon Regular formative assessment and assessment for learning ensures gaps are filled.

Effective questioning and higher order thinking features at every level

Progress and attainment within units is recorded and tracked and used to inform further teaching and support

Opportunity for revisiting content and consolidating or applying learning at greater depth

Opportunities for Low stakes Quizzes incorporated for children to retain key mathematical facts



## Support

•**For staff:**  
National Curriculum  
Calculation Policy  
NECTM  
White Rose Materials

•**For Pupils:**  
Ambitious targets for all pupils  
Quality first planning and teaching in first instance to meet all needs  
Guidance from any individual support plans used when meeting any specific needs  
Use of evidence-based interventions  
Use of Maths apps.

