



Maths at Yarm Primary

At Yarm Primary, our intent is to provide children with a broad and balanced curriculum, which builds on their needs and prepares them for the future. We have adopted the mastery approach to maths with support from the White Rose scheme, which we enhance with materials from NCETM progression documentation, in order to provide an engaging and purposeful context for learning. Pupils are encouraged to apply the skills and knowledge in a range of situations such as investigations and games, as well as reasoning and problem solving opportunities. We place emphasis on mastering key skills to provide a solid foundation for lifelong learning.

Within the National Curriculum:

Pupils should be taught:

- to 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
- to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- to 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.

The principal focus of mathematics teaching in Early Years involves providing children with opportunities to develop and improve their skills in cardinality and counting, composition and comparison. We also ensure there are opportunities for the development of numerical patterns, measure and shape and space which are explored through a range of engaging and purposeful activities.

The principal focus of mathematics teaching in Key Stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the 4 operations, including with practical resources. This is also supported by the 'Mastering Number programme' from the NCETM. Pupils 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. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge. Opportunities are also provided to enable children to discuss and reason with their mathematical knowledge and understanding.

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the 4 operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. Pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils 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 up to and including the 12 multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word-reading knowledge and their knowledge of spelling.

The principal focus of mathematics teaching in upper key stage 2 is to ensure that pupils 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. Pupils 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, pupils 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. By the end of year 6, pupils should be fluent in written methods for all 4 operations, including long multiplication and division, and in working with fractions, decimals and percentages. Pupils should read, spell and pronounce mathematical vocabulary correctly.

To implement the offer, pupils are presented with a range of representations from the concrete, pictorial and abstract, in order for them to gain a thorough understanding of the concepts taught. The mastery approach is influential in the teaching of maths throughout the school, with pupils understanding being made deeper and more secure. Links across mathematical areas are encouraged to allow pupils to practice, rehearse and transfer knowledge and skills and apply them in a range of contexts. Early Years and KS1 are supported to develop their fluency through the 'Mastering Number Programme' from the NCETM, using a range of high quality materials. Children in KS2 are supported to develop their fluency and mathematical recall through the use of Schofield and Sims, a mental maths approach.

The impact of our maths curriculum has been, and continues to be a positive one. Children leave Yarm Primary with a rounded mathematical understanding, which prepares them well for their secondary education. This is evidenced through our Key Stage 2 SATS results and pupil voice.

Assessment is used to monitor progress and to identify any child needing additional support as soon as they need it.

Assessment for learning is used daily within class to identify children needing additional support and this information is acted upon as soon as staff are able – same day if possible. Areas for development are then planned into future lessons to ensure gaps close.

Summative assessment is used to identify gaps in learning and retention that needs to be addressed in consolidation weeks. These assessments are set after a block of learning has been completed and a significant amount of time has passed. This provides staff with accurate information on children's understanding of the key concepts.