

Mathematics



Intent

At Nerrols Primary School and Nursery, we recognise the important role mathematics plays in the everyday lives of our children, both now and in their futures. We want our children to understand mathematical concepts, recall and apply their knowledge quickly and accurately to solve mathematical problems and reason, perform calculations and procedures efficiently and fluently and to have the knowledge, understanding and skills to apply their learning in a range of contexts. By building strong mathematical foundations, children will develop creativity and enjoyment with their mathematical understanding, not only being able to work out the correct solutions but can also develop their reasoning skills to explore mathematical situations with confidence. We believe that a high-quality mathematics education provides children with an appreciation of mathematics and curiosity now and into their future education journey.

Implementation

At Nerrols Primary School and Nursery we aim for children to develop an interest in and a positive attitude towards maths. We actively encourage children to look for patterns and relationships and spot connections. We know that developing a strong mathematical grounding in number is essential in the Early Years so that all children develop the necessary mathematical building blocks to enable them to succeed. We teach children to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. The children explore numbers with manipulatives and develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. We provide rich opportunities for children to develop their spatial reasoning skills across all areas of mathematics including shape, space and measures.

At Nerrols, we use the NCETM prioritisation and progression documents throughout the school. This provides us with a coherent sequencing of the primary mathematics curriculum. The progression ensures distributed practice allowing teachers and children to revisit, repeat and embed their learning. To supplement the NCETM progression, we use MyMaths, White Rose, TT Rockstars and I See Reasoning to ensure our children experience a broad mathematics curriculum with a range of representations which enables them to approach new problems successfully.

We aim to provide children with high quality teaching to ensure a thorough understanding of mathematics and a curriculum which caters for the needs of all individuals. New mathematical concepts are introduced using a 'Concrete, Pictorial and Abstract' approach; enabling all children to experience hands-on learning when discovering new mathematical topics, and allowing them to have clear models and images to aid their understanding.

Mathematics is taught at least 4 times a week in both KS1 and KS2, as well as opportunities maximised in other curriculum areas to enable children to apply their skills in a range of contexts.

Standard written methods are taught progressively as laid out in our calculation policies and summary posters.

We believe that arithmetic skills help children to confidently and flexibly approach mathematical problems. These skills are practised daily, for example through 'Daily 5' tasks at the start of a lesson, to ensure key mathematical concepts are embedded and children can recall this information to see the links between topics in Maths.

Children's learning is further enhanced through home learning sessions and tasks using MyMaths which follows our approach of using concrete, pictorial and abstract strategies to help children understand new topic areas and develop their understanding.

Scope and Sequence

	Autumn Half Term 1	Autumn Half Term 2	Spring Half Term 1	Spring Half Term 2	Summer Half Term 1	Summer Half Term 2
Reception	Match and Sort Compare Amounts Compare Size, Mass & Capacity Exploring Patterns	Representing, Comparing and Composition of 1,2,3 Representing numbers to 5 1 more, 1 less Circles & Triangles Positional language Shapes with 4 sides Time	Introducing Numbers Introducing numbers to 5 Composition of 4 & 5 Comparing Mass Compare Capacity Combining 6, 7 and 8 Making Pairs Combining 2 amounts	Length and Height Counting to 9 and 10 Comparing Numbers to 10 Bonds to 10 3D shapes Spatial awareness Patterns	Doubling Sharing & Grouping Even and Odd Spatial Reasoning Adding more Taking Away Visualise & Build Compose & Decompose	Building numbers beyond 10 Counting patterns beyond 10 Match, rotate, manipulate Deepening understanding Patterns
Year 1	Previous Reception experiences and counting within 100.	Comparison of quantities, part-whole relationships, numbers 0 - 5	2D and 3D shapes Numbers 0 - 10	Addition and Subtraction	Numbers 0 – 20	Money, position and direction, time.
Year 2	Numbers 10 – 100, calculations within 20.	Add and subtract within 10, addition and subtraction of two-digit numbers.	Multiplication, division.	Shape, addition and subtractions of two- digit numbers	Money, fractions, time, position and direction.	Multiplication and division inc. doubling, halving etc. Sense of measure.
Year 3	Adding and subtracting across 10, numbers to 1000.	Numbers to 1000.	Right angles, additive relationships, mental calculations.	Column addition, times tables, column subtraction.	Unit fractions.	Non-unit fractions, polygons, time.
Year 4	Addition, subtraction, numbers to 10,000.	Perimeter, times tables.	Times tables, multiplication.	Multiplication, coordinates.	Fractions, fractions greater than 1.	Shape, time, division.
Year 5	Decimal fractions, money.	Negative numbers, multiplication, division.	Area, scaling.	Calculating with decimal fractions, factors, multiples and primes.	Fractions.	Converting units, angles.
Year 6	Four operations, multiples of 1000.	Numbers up to 10,000,000 Shape.	Multiplication, division, area, perimeter, position and direction.	Fractions and percentages.	Statistics, preparation for KS2 assessments.	Ratio, proportion, order of operations, mean average.

Impact

Teachers use a range of assessment techniques to ensure they know where each child is within their learning, know what they need to achieve and use effective strategies to ensure they reach their full potential. Teachers use retrieval tasks regularly to explore children's recall of previous learning and better understand starting points for new learning. Formative assessment techniques supplement our retrieval tasks by assessing children's understanding of the new learning in a lesson. The use of TT Rockstars improves children's fluency of times tables, working towards the multiplication checks in Year 4.

Teachers carry out termly assessments in order to track attainment and progress within classes as well as throughout the school. Assessments provide in-depth analysis of understanding in all topic areas. The termly assessments enable us to analyse results across the school and make accurate plans accordingly. We carry out internal and external moderation to enable a comparison.

By the time children move on to the next stage of the education, we aim for our children to be able to talk about mathematical problems, suggest methods and prove their working out, demonstrating a flexibility to apply and move between contexts and make/recognise connections in their knowledge and understanding.