

MATHEMATICS

AT NANLEDRA

We aim to foster children's mathematical understanding and help all children to develop a confident, skilled and resilient approach to all aspects of mathematics. By offering flexible groupings, providing engaging activities and an environment that embraces mistakes as opportunities for further learning we enable children to succeed as mathematicians.

Through the teaching of key mathematics skills we enable our children to:

- Be fluent in the fundamentals of mathematics
- Reason mathematically by following a line of enquiry
- Solve problems by applying their mathematical understanding and knowledge

Below are our aims, principles, strategies and understanding of our approaches to the teaching and learning of Mathematics. It is a core subject and this policy has been written in accordance with its statutory requirements.

INTENT

We aim to equip pupils with the tools to understand Maths. These tools include reasoning, problem solving and the ability to think in abstract ways. Mathematics is integral to all aspects of life; with this in mind, we strive to ensure that our children develop a healthy and enthusiastic attitude towards mathematics that will stay with them and support them in the next stage of their education and beyond. At each stage of learning, children are actively supported to reach their full potential as mathematicians

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,
- can articulate justification or proof using mathematical language and 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.

IMPLEMENTATION

All teachers follow a termly overview plan and are encouraged to design lessons using a range of resources, including, but not limited to, the White Rose Maths Scheme of Learning from the White Rose Maths Hub. A typical Maths lesson provides the opportunity for all children, regardless of their ability, to become confident and capable learners. We are committed to building on prior learning and enabling our children to demonstrate a deep, conceptual understanding of each topic that they can develop over time.

Children are encouraged to develop fluency in their recall of key facts and a whole school approach to the teaching of calculation strategies is deployed across the school. This ensures a consistent and progressive approach and prepares our children for the upper key stage 2 curriculum.

Reasoning and problem-solving skills are explicitly taught to enable children to become independent learners who are prepared to take risks. Additional time is allocated to arithmetic through our aspirational bespoke 'morning maths' scheme to ensure key skills in calculation are retained. The teaching of multiplication facts continues to be a discrete focus, where the applications of these skills are essential for accessing other areas of mathematics. Children are encouraged to apply skills from all areas to complete real-life challenges and give learning a sense of purpose.



Class teachers provide high quality maths lessons ensuring that there is emphasis on direct whole-class teaching, groups/partner work and independent work. We use a range of approaches (concrete, pictorial and abstract methods) following the White Rose scheme of work, teaching mathematical concepts through small steps.

Staff are expected to teach and model correct mathematical language, which scaffolds children's reasoning and explanation skills – sentence stems are used to develop this.

COHERENCE

Lessons are broken down into small connected steps that gradually unfold the concept, providing access for all children that enables them to apply the concept to a range of contexts.

REPRESENTATIONS & STRUCTURE

Our core spine of representations are used in lessons to expose the mathematical relationships and structure being taught.

MATHEMATICAL THINKING

Ideas are worked on by the children: thought about, reasoned and discussed with 'talk partners'.

FLUENCY

We promote quick and efficient recall of facts and procedures and the flexibility to move between different contexts & representations.

VARIATION

We aim to represent the concept being taught in more than one way. We encourage children to pay attention to what is kept the same and what changes.





MATHS IN EARLY YEARS

In EYFS (Reception) we follow the EYFS framework. Teachers ensure the children learn through a mixture of adult led activities and child-initiated activities both inside and outside of the classroom. Mathematics is taught primarily through White Rose Maths and mastering number. The children have a wide range of structured play resources available to them throughout the year - this is known as "continuous provision". The adults model the use of these resources and the appropriate mathematical language as they support the children in their play.

Our over-arching aim is for children to:

Make good progress towards the Early Learning Goals

Be confident in communicating their ideas

Develop a positive attitude towards maths and be willing to 'have a go'

Our sessions cover all of the number work that will support the children to meet the Early Learning Goals and the learning trajectories that build children's understanding and help them make connections between different mathematical concepts.

MATHS IN YEAR 1 AND 2

In Years 1 and 2, the focus of Maths is to ensure the children develop confidence and mental fluency with whole numbers, counting and place value. This often involves working with numerals, words and the four operations (+ - x ÷).

The children should be precise in using and understanding place value and know number bonds to 20. The children also develop their ability to recognise, describe, draw, compare and sort different shapes. The children will use a range of measures to describe and compare different quantities (such as length, mass, capacity/volume, time and money).

Over the year, the children will experience using a range of resources and representations, including a small abacus-like piece of equipment called a rekenrek.

Our Year 2 pupils
are prepared for
KS1 SATs

MATHS IN LOWER KEY STAGE TWO

In Years 3 and 4, the focus is to ensure the children become increasingly fluent with whole numbers and the four operations (including number facts and place value).

Pupils begin to develop efficient written and mental calculations with increasingly large whole numbers. They begin to develop their ability to solve a range of problems, including simple fractions and decimal place value. The children develop mathematical reasoning to help them analyse shapes and their properties and confidently describe their relationships.

By the end of Year 4, children should have memorized their multiplication tables up to and including the 12 times table and be able to show precision and fluency in their work.

Our Year 4 pupils
are prepared for
the multiplication
tables check (MTC)

MATHS IN UPPER KEY STAGE TWO

In Years 5 and 6, the focus of Maths is to ensure that children extend their understanding of the number system and place value to include larger integers.

Pupils should be able to make connections between multiplication and division with fractions, decimals, percentages and ratio. Children should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems that demand the use of efficient written and mental methods of calculation. Children are introduced to algebra as a means for solving a variety of problems.

Our Year 6 pupils
are prepared for
KS2 SATs

The children's understanding and knowledge in geometry and measures consolidates and extends the knowledge they have developed in number; children should be able to classify shapes with increasingly complex geometric properties, using the vocabulary they need to describe them with accuracy and confidence.

IMPACT

The impact of our Maths curriculum is that at the end of Key Stage 2 our pupils achieve and make progress in line, or above, other pupils nationally, evident through:

Fluency in their recall of key number facts and procedures

Accuracy in the formal calculation methods for all four operations

The flexibility and fluidity to move between different contexts and representations of mathematics.

The ability to recognise relationships and make connections in mathematics

The confidence and resilience to reason mathematically and solve a range of problems.

SPECIAL EDUCATIONAL NEEDS

Children who have special educational needs are supported in a number of ways. See our adaptations document for details.