



**St Nicholas**<sup>CE</sup>  
First School

learning and believing, growing and achieving

# Subject Information: Mathematics

Fluency

**Learning and Believing,  
Growing and Achieving**

How will I solve...?

Sequences

Why does it work?

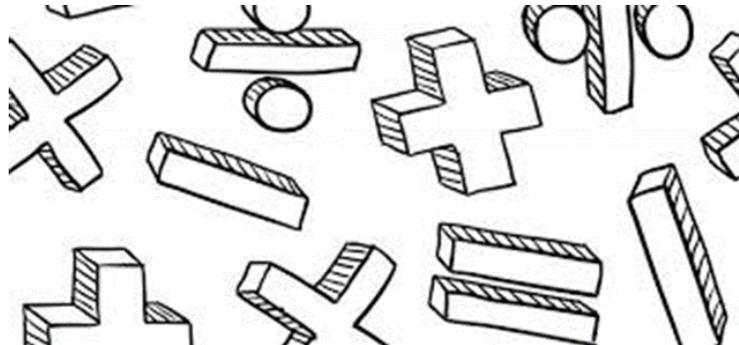
Always,  
sometimes,  
never?

Prove it!

# Principles of mathematics at St Nicholas CE First School

At St Nicholas CE First School, Maths is:

- Fun and engaging.
- Meaningful - using practical equipment and real life situations.
- An opportunity to take risks in problem solving and reasoning.
  - Developing fluency facts.
- Rewarding – mastering new strategies and refining skills.



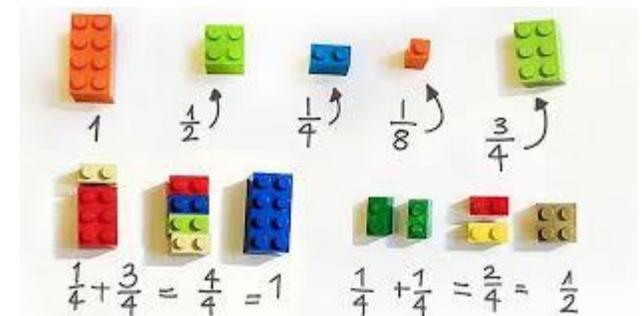
## What is Maths?

Maths is a core subjects in the primary curriculum and it is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. In Early Years maths is a specific area of learning and it is split into two stands, number and Shape, space and measure. In order to be awarded with a Good Level of Development at the end of Reception children will need to have met the Early Learning Goal in maths.



## How is Mathematics taught?

Mathematics is taught daily in school and in Years 1-4 totalling of 5 hours per week. In Reception a mathematical focus is taught each day with adult led tasks or choose provision available each week. The skills taught in maths are also used cross curricular, in subjects such as science and geography. A typical lesson would involve children practicing fluency and recall facts to warm up, then being taught a new concept which would be introduced using concrete apparatus and manipulatives. Children would then be given the time to practice and embed this new learning through independent activities, problem solving and reasoning. Children are encouraged to talk about the maths they are doing and explain and reason their answer. Children are always being asked to 'prove it!' when they give an answer. Once children are confident using manipulatives they move onto representing maths through pictures and finally then into a written calculation – the abstract. This strategy is used no matter what age the child is, as until they can solve the maths and see what is happening, they will never truly understand the concept. As a school we follow the National Curriculum alongside the White Rose Schemes of work, this provides our children to learn number facts and to become fluent through a variety of ways (varied fluency) so that they do not just recite number facts but understand them. The White Rose scheme also develops reasoning skills providing our children with the opportunities to describe and explain their answers.





## How will pupils learn?

Pupils will learn through a 'hands-on' approach by investigating and using a range of apparatus, problems and puzzles and fluency based questions, which enables their learning to come to life. Key learning vocabulary is shared and explored with pupils so that they are fluent in demonstrating their learning. To promote a rich partnership in learning between pupils, they will work independently, in pairs, and in small groups; this will enable effective learning discussions to take place and the sharing and modelling of knowledge, understanding and skills.

## What will pupils learn? Pupils will learn the following in each phase:

EYFS	Key Stage 1	Key Stage 2
<p style="text-align: center;"><u>Number</u></p> <p>Children count reliably with numbers from one to 20, place them in order and say which number is one more or one less than a given number. Using quantities and objects, they add and subtract two single-digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.</p> <p style="text-align: center;"><u>Shape, Space and Measure</u></p> <p>Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects and to solve problems. They recognise, create and describe patterns. They explore characteristics of everyday objects and shapes and use mathematical language to describe them.</p>	<ul style="list-style-type: none"> <li>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 four operations, including with practical resources [for example, concrete objects and measuring tools]. At this stage, 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. By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.</li> </ul>	<ul style="list-style-type: none"> <li>The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four 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. At this stage, 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.</li> </ul>

(Click on the links in the notes section to be taken to the early years development matters document and to the program of study in the national curriculum for maths for a more detail breakdown)



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## **How is learning assessed?**

Teachers use a broad range of assessment tools, including standard tests, daily maths books and teacher assessment. PUMA testing takes place at the end of each term and this alongside daily lessons informs teachers of the levels (emerging, developing, secure or mastering) that each child has achieved. These tools allow teachers to effectively monitor progress, target gaps in children's understanding and provide a tailored approach to their daily practice.

In the Early Years Foundation Stage, focused adult led learning tasks form the basis of the primary assessment, this is then consolidated through children accessing maths independently in the setting. These observations and achievements are assessed against the development matters working towards all children achieving a Good Level of Development by the end of the Reception year.





## How does it promote SMSC?

S - Problem solving skills and teamwork are fundamental to Mathematics, through creative thinking, discussion, explaining and presenting ideas. Throughout the key stages, children are provided with opportunities to work together productively on mathematical tasks and supported to see that the result is often better than any of them could achieve separately.

Experimental and investigation work provides an ideal opportunity for children to work collaboratively.

C - Within Key Stage One and EYFS, children begin to understand the importance of counting and explore early counting ideas from other countries, such as tallies. Towards the end of Key Stage One, children explore the importance of zero as a place holder. In Key Stage Two, children begin to explore more developed number systems, such as Roman numerals. This supports the children to realise how our counting system has developed throughout the ages and shaped the decimal system that we use today.

