



# MATHS POLICY

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## DEFINITIONS

The following terms shall have the following meanings for the purposes of this document:

<b>the School</b>	means Clifton All Saints Academy
<b>KPIs</b>	means Key Performance Indicators
<b>ELG</b>	means Early Learning Goals

## CURRICULUM INTENT

The School has adopted a Mastery approach to teaching and learning mathematics. The School believes that ability within maths is not fixed and that all pupils have the potential to achieve. Mastery is not just being able to memorise key facts and procedures. Mastery involves knowing why as well as knowing that and how. It means being able to use knowledge appropriately, flexibly and creatively and to apply it to new and unfamiliar situations.

The School's curriculum for mathematics reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof.

*'Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. 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'.*

The National Curriculum 2014.

## AIMS

The School share the aims of the National Curriculum to ensure that all pupils:

- Become fluent in the fundamentals of mathematics, including the 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, justification or proof using mathematical language.
- 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.
- Develop skills that will give them the confidence to discuss their mathematical experiences fluently.
- Can work independently as well as co-operatively.

## **CURRICULUM IMPLEMENTATION**

### ***Early Years Foundation Stage***

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. Children should be able to count confidently, develop a deep understanding of the numbers to 10, the relationships between them and the patterns within those numbers. By providing frequent and varied opportunities to build and apply this understanding, children will develop a secure base of knowledge and vocabulary from which mastery of mathematics is built. In addition, it is important that the curriculum includes rich opportunities for children to develop their spatial reasoning skills and develop positive attitudes and interests in mathematics, and not be afraid to make mistakes.

### ***ELG: Number***

Children at the expected level of development will: -

- Have a deep understanding of number to 10, including the composition of each number.
- Subitise (recognise quantities without counting) up to 5.
- Automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.

### ***ELG: Numerical Patterns***

Children at the expected level of development will:

- Verbally count beyond 20, recognising the pattern of the counting system
- Compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity
- Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

### ***Key Stage 1***

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. 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 and be able to recall easily the number bonds to 20 and be precise in using and understanding place value. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

### ***Lower Key Stage 2***

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. Pupils should develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. They 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.

### **Upper Key Stage 2**

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. 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 four operations, including long multiplication and division, and in working with fractions, decimals and percentages. Pupils should read, spell and pronounce mathematical vocabulary correctly.

### **CURRICULUM IMPACT**

The impact of the School's Maths curriculum on its children is clear: progress, sustained learning and transferrable skills. The mathematical journey that the children embark on is embedded and taught thoroughly in all key stages. As a result, the children are becoming much more confident in talking about maths, explaining their thinking and applying concepts and ideas to a variety of different situations.

Termly assessment is showing that most children at the School are achieving well. Each year the School has children achieving at a greater depth in Maths, and this will be further supported by the format and content of the curriculum for teaching mastery in maths.

Skills and concepts taught within maths are easily transferred to other subject areas like Science and Geography and fluency and flexibility of thinking supported by Maths mastery supports this effectively.

### **ASSESSMENT**

Ongoing assessments take place throughout the year. Teachers use this information to inform future lessons; ensuring children are supported and challenged appropriately. Teachers update this each term, using Balance. This data is analysed to inform and address any trends or gaps in attainment. Attainment and attitudes to learning in Maths is reported to Parents annually in school reports.

The curriculum overview can be found [here](#).