

Maths Curriculum

Our aims are for the children at Hill Top to become **fluent** in the fundamentals of mathematics, developing the ability to recall and apply knowledge rapidly and accurately. They use mathematical language and follow a line of enquiry to **reason** and **solve problems**.

We follow the National Curriculum programmes of study, preparing children to be “Secondary- ready” when they leave Year 6. An understanding of counting, place value and number operations, precedes written calculation methods, and at all stages, children are encouraged to use mental strategies.

Number sense and practical calculations are developed through:

- Counting forwards and backwards, in different size steps
- Making arrays to group numbers
- Showing numbers as tens and ones (partitioning)

Mathematical vocabulary and signs are used to record calculations but it is not a written method:

$$2 + 3 = 5 \qquad 5 = 2 + 3 \qquad \begin{array}{r} 2 \\ + \quad 3 \\ \hline \end{array}$$

Key Stage 1

In Key Stage 1 a variety of practical resources are used to teach all areas of number and calculation. There are 6 main pieces of equipment which are used for a wide variety of reasons:

- They support visualisation of the number system
- They are non-gender or age specific
- They are highly transferable across the curriculum and used to support learning in KS2
- They are easy to manipulate and help the children draw connections within their Maths

We use equipment like this in the early stages of a child’s maths learning to ensure they have a very secure understanding of number and the number system. Only then would we move on to written methods and more regular recording of calculations- particularly in Year 2 where some SATs questions ask the children to show their working out.

Here are some examples of how the equipment might be used with the children to develop their number sense and develop their understanding of different calculations:

- **Double- sided counters:** one of the pieces of equipment first introduced to the children: from simple 1:1 correspondence: e.g. can you count out 5 counters, to finding number bonds to 10.
- **The 100 square:** demonstrating patterns e.g. odd and even, multiples of 2,5 and 10, finding 10 more and 10 less than a number
- **Bead strings:** 1:1 correspondence, number facts to 20
- **Number tracks and number lines:** addition and subtraction, 1:1 correspondence, relative size of numbers
- **Tens and ones equipment:** partitioning a number into 10's and 1's, addition, counting in steps of different sizes
- **Place value cards:** developing understanding of the value of each digit in a number.

Key Stage 2

Children continue to count and use the equipment, extending to hundreds and thousands.

Number sense is further developed through partitioning (place value or digit cards).

Mental strategies are applied (rounding numbers to estimate answers).

Written calculation methods are introduced as appropriate to the numbers involved:

- Addition in columns
- Subtraction on a number line by finding the difference, or using base ten equipment to exchange values
- Multiplication by partitioning in a grid, or in columns
- Division by grouping base ten equipment, recording groups along a number line, or a written sum ☐