Mathematics Key Stage 1

Purpose of Study

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.

Key Aims

- 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, 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.

Programme of Study Year 1

Number
Pupils should be taught to:
- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- Count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens
- Given a number, identify one more and one less
- Identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least
- Read and write numbers from 1 to 20 in numerals and words.
  Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs
- represent and use number bonds and related subtraction facts within 20
- Add and subtract one-digit and two-digit numbers to 20, including zero
- Solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = - 9$.

- Solve one-step problems involving multiplication and division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.
- Recognise, find and name a half as one of two equal parts of an object, shape or quantity
- Recognise, find and name a quarter as one of four equal parts of an object, shape or quantity.

Measurement

Pupils should be taught to:

- **Compare, describe and solve practical problems for:**
  ➢ Lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]
  ➢ Mass/weight [for example, heavy/light, heavier than, lighter than]
  ➢ Capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]
  ➢ Time [for example, quicker, slower, earlier, later]
- **Measure and begin to record the following:**
  ➢ Lengths and heights
  ➢ Mass/weight
  ➢ Capacity and volume
  ➢ Time (hours, minutes, seconds)
- Recognise and know the value of different denominations of coins and notes
- Sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]
- Recognise and use language relating to dates, including days of the week, weeks, months and years
- Tell the time to the hour and half past the hour and draw the hands on a clock face to show these times.

Geometry

Pupils should be taught to:

- **Recognise and name common 2-D and 3-D shapes, including:**
  ➢ 2-D shapes [for example, rectangles (including squares), circles and triangles]
  ➢ 3-D shapes [for example, cuboids (including cubes), pyramids and spheres].
- **Describe position, direction and movement, including whole, half, quarter and three-quarter turns.**