**Mathematics Year 4 – Programme of Study Descriptors**

**Number and Place Value:**

Pupils should be taught to:

* count in multiples of 6, 7, 9, 25 and 1000
* find 1000 more or less than a given number
* count backwards through zero to include negative numbers
* recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)
* order and compare numbers beyond 1000
* identify, represent and estimate numbers using different representations
* round any number to the nearest 10, 100 or 1000
* solve number and practical problems that involve all of the above and with increasingly large positive numbers
* read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.

**Number – Addition and Subtraction:**

Pupils should be taught to:

* add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
* estimate and use inverse operations to check answers to a calculation
* solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

**Number – Multiplication and Division:**

Pupils should be taught to:

* recall multiplication and division facts for multiplication tables up to 12 × 12
* use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers
* recognise and use factor pairs and commutativity in mental calculations
* multiply two-digit and three-digit numbers by a one-digit number using formal written layout
* solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

**Number – Fractions (including decimals):**

Pupils should be taught to:

* recognise and show, using diagrams, families of common equivalent fractions
* count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
* solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number
* add and subtract fractions with the same denominator
* recognise and write decimal equivalents of any number of tenths or hundredths
* recognise and write decimal equivalents to , , 
* find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths
* round decimals with one decimal place to the nearest whole number
* compare numbers with the same number of decimal places up to two decimal places
* solve simple measure and money problems involving fractions and decimals to two decimal places.

**Measurement:**

Pupils should be taught to:

* Convert between different units of measure [for example, kilometre to metre; hour to minute]
* measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
* find the area of rectilinear shapes by counting squares
* estimate, compare and calculate different measures, including money in pounds and pence
* read, write and convert time between analogue and digital 12- and 24-hour clocks
* solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.

**Geometry – Properties of Shape:**

Pupils should be taught to:

* compare and classify geometric shapes, including quadrilaterals and triangles**,** based on their properties and sizes
* identify acute and obtuse angles and compare and order angles up to two right angles by size
* identify lines of symmetry in 2-D shapes presented in different orientations
* complete a simple symmetric figure with respect to a specific line of symmetry.

**Geometry – Position and Direction:**

Pupils should be taught to:

* describe positions on a 2-D grid as coordinates in the first quadrant
* describe movements between positions as translations of a given unit to the left/right and up/down
* plot specified points and draw sides to complete a given polygon.

**Statistics:**

Pupils should be taught to:

* interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.
* solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.