

## The End of Year 5 Expectations in Maths are:

### Place Value:

Can read and write numbers to at least 1 000 000 and determine the value of each digit.

Can order and compare numbers to at least 1 000 000.

Can count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000.

Can interpret negative numbers in context, and count forwards and backwards with positive and negative whole numbers through zero.

Can round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.

Can solve number problems and practical problems that involve all of the above.

Can read Roman numerals to 1000 (M) and recognise years written in Roman numerals.

### Addition and Subtraction:

Can add and subtract whole numbers with more than 4-digits, including using formal written methods (columnar addition and subtraction).

Can add and subtract numbers mentally with increasingly large numbers.

Can use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.

Can solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

### Multiplication and Division:

Can identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.

Knows and uses the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.

Can establish whether a number up to 100 is prime and recall prime numbers up to 19.

Can multiply and divide numbers mentally drawing upon known facts.

Can multiply numbers up to 4-digits by a 1-digit number using a formal written method.

Can multiply numbers up to 4-digits by a 2-digit number using a formal written method, including long multiplication for 2-digit numbers.

Can divide numbers up to 4-digits by a 1-digit number using the formal written method of short division.

Can interpret remainders appropriately for the context when using short division.

Can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.

Can recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3).

Can solve problems involving multiplication and division, including using their knowledge of factors and multiples, squares and cubes.

Can solve problems involving addition, subtraction, multiplication and division, and a combination of these, including understanding the meaning of the equals sign.

Can solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

### Measurement:

Can convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).

Can understand and use equivalences between metric units and common imperial units, such as inches, pounds and pints.

Can measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.

Can calculate and compare the area of squares and rectangles, including using standard units, square centimetres (cm<sup>2</sup>) and square metres (m<sup>2</sup>).

Can estimate the area of irregular shapes.

Can estimate volume (e.g. using 1 cm<sup>3</sup> blocks to build cubes and cuboids) and capacity (e.g. using water).

Can solve problems involving converting between units of time.

Can use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation, including scaling.

### Fractions:

Can compare and order fractions whose denominators are all multiples of the same number.

Can identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.

Can recognise mixed numbers and improper fractions, and convert from one form to the other and write mathematical statements  $> 1$  as a mixed number (e.g.  $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1$  and  $\frac{1}{5}$ ).

Can add and subtract fractions with the same denominator and multiples of the same number.

Can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.

Can read and write decimal numbers as fractions (e.g.  $0.71 = 71/100$ )

Can recognise and use thousandths, and relate them to tenths, hundredths and decimal equivalents.

Can round decimals with two decimal places to the nearest whole number, and to one decimal place.

Can read, write, order and compare numbers with up to three decimal places.

Can solve problems involving numbers with up to three decimal places.

Can recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write percentages as a fraction with denominator hundred, and as a decimal.

Can solve problems which require knowing percentage and decimal equivalents of  $1/2$ ,  $1/4$ ,  $1/5$ ,  $2/5$ ,  $4/5$  and those with a denominator of a multiple of 10 or 25.

### **Geometry – Properties of Shape:**

Can identify 3-D shapes, including cubes and other cuboids, from 2-D representations.

Knows angles are measured in degrees and can estimate and compare acute, obtuse and reflex angles.

Can draw given angles, and measure them in degrees ( $^{\circ}$ )

Can identify angles at a point and one whole turn (total  $360^{\circ}$ ); angles at a point on a straight line and  $\frac{1}{2}$  a turn (total  $180^{\circ}$ ); other multiples of 90 degrees.

Can use the properties of rectangles to deduce related facts and find missing lengths and angles.

Can distinguish between regular and irregular polygons based on reasoning about equal sides and angles.

### **Geometry – Position and Direction:**

Can identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

### **Statistics:**

Can solve comparison, sum and difference problems, using information presented in a line graph.

Can complete, read and interpret information in tables, including timetables.