Key Learning in Mathematics – Year 4

Number – number and place value	Number – addition and subtraction	Number – multiplication and division
▪ Count in multiples of 6, 7, 9, 25 and 1000. ▪ Count backwards through zero to include negative numbers. ▪ Count up and down in hundredths. ▪ *Read and write numbers to at least 10 000.* ▪ *Read and write numbers with up to two decimal places.* ▪ Recognise the place value of each digit in a four-digit number. ▪ *Identify the value of each digit to two decimal places.* ▪ *Partition numbers in different ways (e.g. 2.3 = 2+0.3 & 1+1.3).* ▪ Identify, represent and estimate numbers using different representations *(including the number line).* ▪ Order and compare numbers beyond 1000. ▪ *Order and* compare numbers with the same number of decimal places up to two decimal places. ▪ Find *0.1, 1, 10, 100 or* 1000 more or less than a given number. ▪ Round any number to the nearest 10, 100 or 1000. ▪ Round decimals (one decimal place) to the nearest whole number. ▪ Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer. ▪ *Describe and extend number sequences involving counting on or back in different steps, including sequences with multiplication and division steps.* ▪ Read Roman numerals to 100 and know that over time, the numeral system changed to include the concept of zero and place value. ▪ Solve number and practical problems that involve all of the above and with increasingly large positive numbers.	▪ *Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).* ▪ *Select a mental strategy appropriate for the numbers involved in the calculation.* ▪ *Recall and use addition and subtraction facts for 100.* ▪ *Recall and use +/- facts for multiples of 100 totalling 1000.* ▪ *Derive and use addition and subtraction facts for 1 and 10 (with decimal numbers to one decimal place).* ▪ *Add and subtract mentally combinations of two and three digit numbers and decimals to one decimal place.* ▪ Add and subtract numbers with up to 4 digits *and decimals with one decimal place* using the formal written methods of columnar addition and subtraction where appropriate. ▪ Estimate; 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. ▪ *Solve addition and subtraction problems involving missing numbers.*	▪ *Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method).* ▪ Recognise and use factor pairs and commutativity in mental calculations. ▪ Recall multiplication and division facts for multiplication tables up to 12 × 12. ▪ *Use partitioning to double or halve any number, including decimals to one decimal place.* ▪ 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. ▪ Multiply two-digit and three-digit numbers by a one-digit number using formal written layout. ▪ *Divide numbers up to 3 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context.* ▪ *Use estimation and inverse to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.* ▪ Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, *division (including interpreting remainders),* integer scaling problems and harder correspondence problems such as n objects are connected to m objects.

Key Learning in Mathematics – Year 4

Number – fractions, decimals and percentages

- *Understand that a fraction is one whole number divided by another (e.g. $\frac{3}{4}$ can be interpreted as 3 ÷ 4).*
- *Recognise, find and write fractions of a discrete set of objects including those with a range of numerators and denominators.*
- Recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
- *Count on and back in steps of unit fractions.*
- *Compare and order unit fractions and fractions with the same denominators (including on a number line).*
- Recognise and show, using diagrams, families of common equivalent fractions.
- Recognise and write decimal equivalents of any number of tenths or hundredths.
- Recognise and write decimal equivalents to $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}$.
- Add and subtract fractions with the same denominator *(using diagrams).*
- 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.
- Solve simple measure and money problems involving fractions and decimals to two decimal places.

Geometry – properties of shapes

- Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.
- 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.
- *Continue to identify horizontal and vertical lines and pairs of perpendicular and parallel lines.*
- Identify acute and obtuse angles and compare and order angles up to two right angles by size.

Geometry – position and direction

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

Measurement

- Estimate, compare and calculate different measures, including money in pounds and pence.
- *Order temperatures including those below 0°C.*
- Measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres.
- *Know area is a measure of surface within a given boundary.*
- Find the area of rectilinear shapes by counting squares.
- Convert between different units of measure [e.g. kilometre to metre; hour to minute].
- Read, write and convert time between analogue and digital 12- and 24-hour clocks.
- *Write amounts of money using decimal notation.*
- *Recognise that one hundred 1p coins equal £1 and that each coin is $\frac{1}{100}$ of £1.*
- Solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days *and problems involving money and measures.*

Statistics

- *Use a variety of sorting diagrams to* compare and classify *numbers and* geometric shapes based on their properties and sizes.
- Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts, time graphs.
- Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.