**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 |
| **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 |
| **Number – fractions and decimals** |
| * *Understand that a fraction is one whole number divided by another (e.g. 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 , , * 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 |
| **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 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* |
| **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 |
| **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 |