Year 4

Number – place value

- **Count in multiples of 6, 7, 9, 25, 10, 100 and 1000**
- **Count backwards through zero to include negative numbers** including in ones, tens, hundreds or thousands forwards or backwards from an 3 digit number
- Count up and down in tenths and hundredths
- Recognise that hundreths arise when dividing an object by one hundred and dividing tenths by 10
- Read and write numbers to at least 10 000
- Read and write numbers with up to two decimal places
- Add or subtract 0.1 from a number with one decimal place
- **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) four digit and numbers with 2 decimal places
- **Identify, represent and estimate numbers using different representations** (including the number line)
- **Order and compare numbers beyond 1000** using <, > and = signs
- Order negative numbers
- 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**

Addition and subtraction

- 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
- Continue to understand that the principles of the commutative and associative laws apply to addition and not to subtraction
- Continue to understand the inverse relationship between addition and subtraction
- Recall and use addition and subtraction facts for 100
- Recall and use +/- facts for multiples of 100 totalling and exceeding 1000 e.g.800 + 500
- Know complements to the next multiple of 100 e.g. 568 + ? = 600
- 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**
- Add and subtract decimals to 2 decimal places (in the context of money or measures)
- **Estimate; use inverse operations to check answers to a calculation**
- Use equivalent calculations to check answers
- **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

VOCABULARY:
Accurately understand, read and spell vocabulary related to addition: add, altogether, total,… more than…, plus, the sum of, increase

Accurately understand, read and spell vocabulary related to subtraction:

	Take away, subtract, how many are left, how many more to make, how many more, how many fewer, …less than…., leave, how many have gone, minus, the difference between, how much more is…than, how much less is….than, decrease
Multiplication and division	**Fractions and decimals**
• Choose an appropriate strategy to solve a calculation based upon the numbers involved (recall a known fact, calculate mentally, use a jotting, written method) • Continue to understand multiplication as: Repeated addition Describing an array Scaling Correspondence problems • **Recognise and use factor pairs and commutativity in mental calculations** • Continue to understand the operation of division as sharing and grouping • Relate division and fractions and begin to use scaling to compare • Begin to understand links to ratio problems • Understand the distributive law • Continue to understand that commutativity and associativity apply to multiplication and not to division • Continue to understand the inverse relationship between multiplication and division • **Recall multiplication and division facts for multiplication tables up to 12 × 12** and use place value to derive related facts • Count in multiples of 6, 7, 9, 25 and 1000 • Derive doubles of multiples of 5 to 100 and doubles of 100 to 500 (and derive corresponding halves) • 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**	• 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 up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by 10 (also in place value)** • 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) – up to 2 decimal places** • **Round decimals with one 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 as ones, tenths and hundredths (also in place value)** • **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**

• **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 • Use equivalent calculations to check answers • **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** • Continue to solve missing number problems • Continue to make sensible decisions about rounding up or down after division in the context of a problem	
VOCABULARY Understand, read and spell the vocabulary involved in multiplying: Double, pattern, array, row, column, groups of, lots of, multiple, multiply, times, table, once, twice, three, ten …times as big, repeated addition, product New for Year 4: **factor** Understand, read and spell the vocabulary involved in dividing: Share, halve, array, row, column, equal groups of, divide, left over, in every, remainder • New for Year 4: **for every, quotient, divisible by, factor**	
Measures	**Statistics**
• **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**	• 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**

• **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	Science: ▪ gathering, recording, classifying and presenting data in a variety of ways to help in answering questions ▪ recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables ▪ reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
Geometry – properties of shapes	**Geometry – position and direction**
• **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**	• **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**

Bold black = National Curriculum objectives

Black = Additional objectives added by LgfL

Red = Additional objectives added by maths development group