Key Learning in Mathematics – Year 4

Number – number and place value

- 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

Number – fractions and decimals

- *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

Number – 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*
- *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*

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

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

Number – multiplication and division

- *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

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*

The writing in black shows the New National Curriculum Objectives 2014 that will be taught in this year group.

The writing in green shows additional objectives historically taught in year 4 which will help the National Curriculum Aims to be met.