Key Learning in Mathematics – Year 3

Number – number and place value

- Count from 0 in multiples of 4, 8, 50 and 100
- Count up and down in tenths
- Read and write numbers up to 1000 in numerals and in words
- *Read and write numbers with one decimal place*
- Identify, represent and estimate numbers using different representations *(including the number line)*
- Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
- *Identify the value of each digit to one decimal place*
- *Partition numbers in different ways (e.g. 146 = 100+ 40+6 and 146 = 130+16)*
- Compare and order numbers up to 1000
- *Compare and order numbers with one decimal place*
- Find *1,* 10 or 100 more or less than a given number
- *Round numbers to at least 1000 to the nearest 10 or 100*
- *Find the effect of multiplying a one- or two-digit number by 10 and 100, identify the value of the digits in the answer*
- *Describe and extend number sequences involving counting on or back in different steps*
- *Read Roman numerals from I to XII*
- Solve number problems and practical problems involving these ideas

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*
- *Understand and use take away and difference for subtraction, deciding on the most efficient method for the numbers involved, irrespective of context*
- *Recall/use addition/subtraction facts for 100 (multiples of 5 and 10)*
- *Derive and use addition and subtraction facts for 100*
- *Derive and use addition and subtraction facts for multiples of 100 totalling 1000*
- Add and subtract numbers mentally, including:
  - a three-digit number and ones
  - a three-digit number and tens
  - a three-digit number and hundreds
- Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction
- Estimate the answer to a calculation and use inverse operations to check answers
- Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction

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)*
- *Understand that division is the inverse of multiplication and vice versa*
- *Understand how multiplication and division statements can be represented using arrays*
- *Understand division as sharing and grouping and use each appropriately*
- Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
- *Derive and use doubles of all numbers to 100 and corresponding halves*
- *Derive and use doubles of all multiples of 50 to 500*
- Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods
- *Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy*
- Solve problems, including missing number problems, involving multiplication and division *(and interpreting remainders),* including positive integer scaling problems and correspondence problems in which n objects are connected to m objects

Number – fractions

- *Show practically or pictorially that a fraction is one whole number divided by another (e.g. $\frac{3}{4}$ can be interpreted as 3 ÷ 4)*
- *Understand that finding a fraction of an amount relates to division*
- Recognise that tenths arise from dividing objects into 10 equal parts and in dividing one-digit numbers or quantities by 10
- Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
- Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators
- Recognise and show, using diagrams, equivalent fractions with small denominators
- Add and subtract fractions with the same denominator within one whole [for example, $\frac{5}{7} + \frac{1}{7} = \frac{6}{7}$]
- Compare and order unit fractions, and fractions with the same denominators *(including on a number line)*
- *Count on and back in steps of $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{1}{3}$*
- Solve problems that involve all of the above

Geometry – properties of shapes

- Draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them
- Recognise angles as a property of shape or a description of a turn
- Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle
- Identify horizontal and vertical lines and pairs of perpendicular and parallel lines

Geometry – position and direction

- *Describe positions on a square grid labelled with letters and numbers*

Statistics

- *Use sorting diagrams to compare and sort objects, numbers and common 2-D and 3-D shapes and everyday objects*
- Interpret and present data using bar charts, pictograms and tables
- Solve one-step and two-step questions [for example, 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables

Measures

- Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
- *Continue to estimate and measure temperature to the nearest degree (°C) using thermometers*
- *Understand perimeter is a measure of distance around the boundary of a shape*
- Measure the perimeter of simple 2-D shapes
- Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks
- Estimate/read time with increasing accuracy to the nearest minute
- Record/compare time in terms of seconds, minutes, hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon, midnight
- Know the number of seconds in a minute and the number of days in each month, year and leap year
- Compare durations of events [for example to calculate the time taken by particular events or tasks]
- *Continue to recognise and use the symbols for pounds (£) and pence (p) and understand that the decimal point separates pounds/pence*
- *Recognise that ten 10p coins equal £1 and that each coin is $\frac{1}{10}$ of £1*
- Add and subtract amounts of money to give change, using both £ and p in practical contexts
- *Solve problems involving money and measures and simple problems involving passage of time*