2014 MATHEMATICS CURRICULUM - Year 3

Number - Number and place value

- Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
- Recognise the place value of each digit in a 3-digit number (hundreds, tens, ones)
- Compare and order numbers up to 1000
- Identify, represent and estimate numbers using different representations
- Read and write numbers up to 1000 in numerals and in words
- Solve number problems and practical problems involving these ideas
- Use multiples of 2, 3, 4, 5, 8, 10, 50 and 100
- Use larger numbers to at least 1000, applying partitioning related to place value using varied and increasingly complex problems
  - eg. 146 = 100 + 40 + 6 and 146 = 130 + 16
- Use a variety of representations, including those related to measure
- Count in ones, tens and hundreds to become fluent in the order and place value of numbers to 1000

Number - Addition and subtraction

- Add and subtract numbers mentally including:
  - a 3-digit number and ones
  - a 3-digit number and tens
  - a 3-digit number and hundreds
- Add and subtract numbers up to 3 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
- Solve varied addition and subtraction questions
- Add 2-digit numbers mentally, the answers could exceed 100
- Use their understanding of place value and partitioning
- Practise using columnar addition and subtraction with increasingly large numbers up to 3 digits to become fluent

Number - Multiplication and division

- Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
- Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for 2-digit numbers times 1-digit numbers, using mental and progressing to formal written methods
- Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects
- Practise their mental recall of multiplication tables when they are calculating mathematical statements
- Connect the 2, 4 and 8 multiplication tables to doubling
- Develop efficient mental methods - eg. using commutativity and associativity ($4 \times 12 \times 5 = 4 \times 5 \times 12 = 20 \times 12 = 240$ and multiplication and division facts (using $3 \times 2 = 6$, $6 \div 3 = 2$ and $2 = 6 \div 3$)
- Develop reliable written methods for multiplication and division, starting with calculations of 2-digit numbers by 1-digit numbers and progressing to the formal written methods of short multiplication and division
- Solve simple problems in contexts, deciding which of the four operations to use and why
- Use measuring and scaling contexts - eg. four times as high, eight times as long etc and correspondence problems in which m objects are connected to n objects - eg. 3 hats and 4 coats, how many different outfits?; 12 sweets shared between 4 children; 4 cakes shared equally between 8 children

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 a 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
- Know the symmetrical and non-symmetrical polygons and polyhedra
- Describe the properties of 2-D and 3-D shapes using accurate language, including lengths of lines and acute and obtuse for angles greater than or lesser than a right angle
- Connect decimals and rounding to drawing and measuring straight lines in centimetres, in a variety of contexts

Statistics

- Interpret and present data using bar charts, pictograms and tables
- Solve one-step and two-step questions - eg. 'How many more?' and 'How many fewer?' using information presented in scaled bar charts and pictograms and tables
- Understand and use simple scales eg. 2, 5 , 10 units per cm in pictograms and bar charts with increasing accuracy
- Interpret data presented in many contexts

Measurement

- Measure, compare, add and subtract:
    - lengths (m/cm/mm)
    - mass (kg/g)
    - volume / capacity (l/ml)
- Measure the perimeter of simple 2-D shapes
- Add and subtract amounts of money to give change, using both £ and p in practical contexts
- 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 and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, a.m./p.m., morning, afternoon, noon and 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 - eg. calculate the time taken by particular events or tasks
- Measure using the appropriate tools, progressing to using a wider range of measures, including comparing and using mixed units eg. 1kg and 200g and simple equivalents of mixed units eg. 5m = 500cm
- Comparison of measures including simple scaling by integers - eg. a given quantity or measure is twice as long or five times as high and this connects to multiplication
- Recognise the value of coins, by adding and subtracting amounts, including mixed units, and giving change using manageable amounts. Record £ and p separately
- Use both analogue and digital 12-hour clocks and record their times

Number - Fractions

- Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing 1-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 - eg. 5/7 + 1/7 = 6/7, through a variety of increasingly complex problems
- Compare and order unit fractions, and fractions with the same denominators
- Solve problems that include all of the above
- Connect tenths to place value, decimal measures and to division by 10
- Begin to understand unit and non-unit fractions as numbers on the number line, and deduce relations between them, such as size and equivalence beyond the [0, 1] interval, including relating this to measure
- Understand the relation between unit fractions as operators (fractions of), and division by integers

    Recognise fractions in the contexts of parts of a whole, numbers, measurements, a shape, and unit fractions as a division of a quantity