Year 5 New Primary NC in Mathematics Statutory requirements	Comment
NUMBER: Number and place value • read, write, order & compare numbers to at least 1 000 000 & determine the value of each digit • count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero • round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • solve number problems and practical problems that involve all of the above • read Roman numerals to 1000 (M) and recognise years written in Roman numerals.	Y5 previously: 'Count from any given number in whole number and decimal steps, extending beyond zero when counting backwards; relate the numbers to their position on a number line' and 'explain what each digit represents in whole numbers'. Upper limit [i.e. at least 1 000 000] not previously specified. Y5 stated: 'Explain what each digit represents in whole numbers and decimals with up to 2 places, and partition, round and order these numbers. Upper limit of 1 000 000 not previously specified. Y4 previously stated: 'Partition, round and order 4 digit whole numbers'. No mention of Roman numerals previously.
Addition and subtraction • add and subtract whole numbers with more than 4 digits, including using formal-written methods (columnar addition and subtraction) • add and subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • solve addition & subtraction multi-step problems in contexts, deciding which operations & methods to use & why.	No previous mention of adding and subtracting whole numbers with more than 4 digits. Y4 previously stated: 'Refine and use efficient written methods to add and subtract 2 digit and 3 digit whole numbers', whereas Y5 stated: 'use efficient written methods to add and subtract whole numbers and decimals with up to 2 places'. No specific reference to columnar addition and subtraction. Previously only specified 'one step and two step problems'
Multiplication and division • identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. • know & use the vocabulary of prime numbers, prime factors & composite (non-prime) numbers • establish whether a number up to 100 is prime and recall prime numbers up to 19 • multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers. • multiply and divide numbers mentally drawing upon known facts • divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 • recognise & use square numbers and cube numbers, & the notation for squared (^{2}) and cubed (^{3}) • solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign • solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.	**Moved down from Y6:** 'Recognise that prime numbers have only two factors and identify prime numbers less than 100'. Y5 previously: 'Refine and use efficient methods to multiply HTU x U, TU x TU, U.t x U'. **Moved down from Y6**: 'Use efficient written methods to multiply 2 digit and 3 digit integers by a 2 digit integer'. 4 digit numbers not previously specified. Y5 previously: 'Refine and use efficient methods to divide HTU÷U'. **Moved down from Y6**: Use efficient written methods to divide integers by a one digit integer'. No specific reference 4 digit numbers, short division method or remainders, but remainders are referred to in earlier years (Years 2 - 4). **Moved down from Y6:** Use knowledge of multiplication facts to derive quickly squares of numbers to 12 x 12 and the corresponding squares of multiples of 10'. No mention of cube numbers previously although perhaps some familiarity though volume.
Fractions (including decimals and percentages) • compare and order fractions whose denominators are all multiples of the same number • Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. 2/5 + 4/5 = 6/5 = 1 1/5) • add and subtract fractions with the same denominator and multiples of the same number • multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.	**Moved down from Y6:** 'Order a set of fractions by converting them to fractions with a common denominator'; 'Express a larger whole number as a fraction of a smaller one (e.g. recognise that 8 slices of 5 slice pizza represent 8/5 or 1 3/5 pizzas) **Moved up from Y4**: 'Use diagrams to identify equivalent fractions'; 'find equivalent fractions (e.g. 7/10 = 14/20, or 19/10 = 19/10)' was Y5. 'Interpret mixed numbers and position them on a number line' has been **moved up from Y4.** No previous mention of improper fractions or writing mathematical
• read and write decimal numbers as fractions (e.g. 0.71 = 71/100) • recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents • round decimals with two decimal places to the nearest whole number and to one decimal place • read, write, order and compare numbers with up to three decimal places • solve problems involving number up to three decimal places. • recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator hundred, and as a decimal fraction • solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25.	**Moved down from Y6:** 'Use decimal notation for tenths, hundreths and thousandths'. **Moved down from Y6:** 'Partition, round and order decimals with up to three places and position them on the number line'. Problem solving not specified to such a degree in the previous framework.
Measurement • convert between different units of metric measure (e.g. kilometre and metre; metre and centimetre; centimetre and millimetre; kilogram and gram; litre and millilitre) • understand and use equivalences between metric and common imperial units such as inches, pounds and pints • measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres • calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes • estimate volume (e.g. using 1 cm³ blocks to build cubes and cuboids) and capacity (e.g. using water) • solve problems involving converting between units of time • use all four operations to solve problems measure (e.g. length, mass, volume, money) using decimal notation including scaling.	**Moved down from Y6 progression to Y7**: 'Measure and calculate using imperial units still in everyday use; know their approximate metric values'. Units not previously specified. Y5 previously stated: 'measure and calculate the perimeter of regular and irregular polygons'. Y6 mentioned calculating the 'perimeter of rectilinear shapes', no mention of 'composite' or the units of measurement previously. Y5 previously stated: 'Use the formula for the area of a rectangle to calculate the rectangle's area'. Standard units not previously specified. **Moved down from Y6:** 'Estimate the area of an irregular shape by counting squares'. Y5 previously: 'Read, choose, use and record standard metric units to estimate capacity to a suitable degree of accuracy.' 'Solving problems by measuring, estimating and calculating' and calculating the volume of cubes and cuboids was

Geometry: properties of shapes
• identify 3-D shapes, including cubes and cuboids, from 2-D representations
• know angles are measured in degrees; estimate and compare acute, obtuse and reflex angles
• measure them and draw a given angle, writing its size in degrees (º)
• identify:
  • angles at a point and one whole turn (total 360º)
  • angles at a point on a straight line and ½ a turn (total 180º)
  • other multiples of 90º
• use the properties of a rectangle to deduce related facts and find missing lengths and angles
• distinguish between regular and irregular polygons based on reasoning about equal sides and angles
	Moved up from Y4: 'Know that angles are measured in degrees'. Previously Y5: 'Estimate, draw and measure acute and obtuse angles using an angle measurer or protractor to suitable degree of accuracy'. 'Compare and order angles less than 180º' **moved up from Y4**. Reflex angles not previously specified. Calculating angles around a point was previously Y6, but knowing that angles on a straight line is the equivalent of 2 right angles was Y3 and one whole turn = 360º was Y4. It is likely that all these objectives would be explored further in Y5; calculating angles in a straight line was previously Y5. Not mentioned previously, although properties of squares are often used to calculate area or an irregular shape in KS2 test questions, for example. Linked through Y6 as: 'To make and draw shapes with increasing accuracy and apply knowledge of their properties.'

Position and direction • identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.	**Moved down** from Y6: 'Visualise and draw on grids of different types where a shape will be after reflection, after translations, or after rotation through 90 or 180 degrees about its centre or one of its vertices
Statistics solve comparison, sum and difference problems using information presented in line graphs • complete, read and interpret information in tables, including timetables.	