Year 5 Progression Map from September 2014

Key stage	Year 5
Number: Number and Place Value	Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit.
	Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.
	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.
Number: Addition and Subtraction	**Year 5**
	Add and subtract numbers mentally with increasingly large numbers.
	Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.
	Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
	Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
Number: Multiplication and Division	**Year 5**
	Multiply and divide numbers mentally drawing upon known facts.
	Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
	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.
	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.
	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 using their knowledge of factors and multiples, squares and cubes.
	Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.
	Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.
	Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.
	Establish whether a number up to 100 is prime and recall prime numbers up to 19.
	Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}).
Fractions, Decimals and Percentages	**Year 5**
	Compare and order fractions whose denominators are all multiples of the same number.
	Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $^2/_5 + {}^4/_5 = {}^6/_5 = 1\ {}^1/_5$.
	Add and subtract fractions with the same denominator and denominators that are multiples of the same number.
	Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
	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.
	Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.
	Read and write decimal numbers as fractions [for example, $0.71 = {}^{71}/_{100}$].
	Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.
	Write percentages as a fraction with denominator 100, and as a decimal.
	Solve problems which require knowing percentage and decimal equivalents of $^1/_2$, $^1/_4$, $^1/_5$, $^2/_5$, $^4/_5$ and those fractions with a denominator of a multiple of 10 or 25.
	Solve problems involving number up to three decimal places.

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Measurement	**Year 5**
	Convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).
	Understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.
	Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.
	Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.
	Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres(m^2) and estimate the area of irregular shapes.
	Estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water].
	Solve problems involving converting between units of time.
	Use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.
Geometry: Properties of Shapes	**Year 5**
	Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.
	Use the properties of rectangles to deduce related facts and find missing lengths and angles.
	Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
	Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.
	Draw given angles, and measure them in degrees (^{o}).
Geometry: Position and Direction	**Year 5**
	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.
Statistics	**Year 5**
	Complete, read and interpret information in tables, including timetables.
	Solve comparison, sum and difference problems using information presented in a line graph.
Algebra	**Year 5**
	Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit (Non-statutory guidance: Measurement)
	Recognise and use square numbers and cube numbers, and the notation for squared (^{2}) and cubed (^{3}) Number: Multiplication and Division