



Year 5 Mathematics Schema

<u>Autumn Term</u>	<u>Spring Term</u>	<u>Summer Term</u>
Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit		
<u>Number - Number and Place Value</u> Pupils should be taught to: *Read, write, order and compare numbers to at least 1 000 000 and 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. <u>Number - Addition and Subtraction</u> *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	<u>Number - Fractions (A)</u> *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 *Add and subtract fractions with the same denominator and denominators that are multiples of the same number <u>Number - Multiplication and Division (B)</u> *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 *Recognise and use cube numbers, and the notation for cubed (3) *Solve problems involving addition, subtraction, multiplication and division and a combination of these,	<u>Number - Fractions B (Including Decimals and Percentages)</u> *Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams *Read and write decimal numbers as fractions *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 100, and as a decimal *Solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and fractions



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*Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why. <u>Measurement</u> *Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres <u>Number – Multiplication and Division (A)</u> *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 *Multiply and divide numbers mentally drawing upon known facts *Recognise and use square numbers, and the notation for squared (2) *Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes	including understanding the meaning of the equals sign	with a denominator of a multiple of 10 or 25. <u>Number – Multiplication and Division</u> *Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. <u>Measurement: Converting Units</u> *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 *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.
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<u>JG Teaching (1 hr 20 mins per week)</u>		
<u>Geometry - Properties of Shape</u> * Identify 3-D shapes, including cubes and other cuboids, from 2-D representations * Distinguish between regular and irregular polygons based on reasoning about equal sides and angles. <u>Measurement - Volume</u> * Estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water]	<u>Geometry: Position and Direction</u> * 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. <u>Statistics</u> * Complete, read and interpret information in tables. * Solve comparison, sum and difference problems using information presented in a line graph	<u>Geometry - Properties of Shape</u> * Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles * Draw given angles, and measure them in degrees (°) * Identify: angles at a point and 1 whole turn (total 360°) - angles at a point on a straight line and half a turn (total 180°) other multiples of 90° * Use the properties of rectangles to deduce related facts and find missing lengths and angles <u>Measurement - Area</u> * Calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm²) and square metres (m²) and estimate the area of irregular shapes <u>Statistics</u> * Complete, read and interpret information in timetables.