

Progression in Mathematics – Year 5

Pupil name _____

Class/ Group (s) _____

Date (from - to) _____

	Dimension 1 – Number			Dimension 2 – Measurement
	Aspect 1 – Place Value	Aspect 2 – Four Rules	Aspect 3 – Fractions (including decimals and percentages)	Aspect 4 – Measurement
Year 5	<ul style="list-style-type: none"> • Reads, writes, orders and compares numbers to at least 1 000 000 and determine the value of each digit • <i>Counts forwards or backwards in steps of powers of 10 for any given number up to 1 000 000</i> • Interprets negative numbers in context, counts forwards and backwards with positive and negative whole numbers, including through zero • Rounds any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 • <i>Solves number problems and practical problems that involve all of the above</i> • <i>Reads Roman numerals to 1000 (M) and recognise years written in Roman numerals.</i> 	<ul style="list-style-type: none"> • Adds and subtracts whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • <i>Adds and subtracts numbers mentally with increasingly large numbers</i> • Uses rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • Solves addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why • Identifies multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. • Knows and uses the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • <i>Establishes whether a number up to 100 is prime and recall prime numbers up to 19</i> • <i>Multiplies numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers</i> • Multiplies and divides numbers mentally drawing upon known facts • Divides 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 • <i>Multiplies and divides whole numbers and those involving decimals by 10, 100 and 1000</i> • <i>Recognises and uses square numbers and cube numbers, and the notation for squared (2) and cubed (3)</i> • <i>Solves problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign</i> • Solves problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. 	<ul style="list-style-type: none"> • Compares and orders fractions whose denominators are all multiples of the same number • Identifies, names and writes equivalent fractions of a given fraction, represented visually, including tenths and hundredths • Recognises mixed numbers and improper fractions and converts from one form to the other and writes mathematical statements > 1 as a mixed number (for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$) • Adds and subtracts fractions with the same denominator and denominators that are multiples of the same number • <i>Multiplies proper fractions and mixed numbers by whole numbers, supported by materials and diagrams</i> • Reads and writes decimal numbers as fractions (for example, $0.71 = \frac{71}{100}$) • <i>Recognises and uses thousandths and relate them to tenths, hundredths and decimal equivalents</i> • Rounds decimals with two decimal places to the nearest whole number and to one decimal place • <i>Reads, writes, orders and compares numbers with up to three decimal places</i> • Solves problems involving number up to three decimal places • Recognises the per cent symbol (%) and understands that per cent relates to “number of parts per hundred” • Writes percentages as a fraction with denominator 100, and as a decimal • Solves 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 those with a denominator of a multiple of 10 or 25. 	<ul style="list-style-type: none"> • Converts between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre) • <i>Understands and uses approximate equivalences between metric units and common imperial units such as inches, pounds and pints</i> • Measures and calculates the perimeter of composite rectilinear shapes in centimetres and metres • Calculates and compares the area of rectangles (including squares) and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimates the area of irregular shapes • <i>Estimates volume (for example, using 1 cm^3 blocks to build cubes and cuboids) and capacity (for example, using water)</i> • Solves problems involving converting between units of time • Uses all four operations to solve problems involving measure (for example, length, mass, volume, money) using decimal notation including scaling.

	Dimension 3 – Geometry		Dimension 4 – Statistics	Dimension 5 – Algebra	Dimension 6 – Ratio and Proportion
	Aspect 5 – Properties of shapes	Aspect 6 – Position and direction	Aspect 7 – Statistics	Aspect 8 – Algebra	Aspect 9 – Ratio and Proportion
Year 5	<ul style="list-style-type: none"> • Identifies 3-D shapes, including cubes and other cuboids, from 2-D representations • Knows angles are measured in degrees • Estimates and compares acute, obtuse and reflex angles • <i>Draws given angles, and measures them in degrees ($^{\circ}$)</i> • <i>Identifies: angles at a point and one whole turn (total 360°)</i> <ul style="list-style-type: none"> ○ <i>angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°)</i> ○ <i>other multiples of 90°</i> • Uses the properties of rectangles to deduce related facts and find missing lengths and angles • <i>Distinguishes between regular and irregular polygons based on reasoning about equal sides and angles</i> 	<ul style="list-style-type: none"> • Identifies, describes and represents the position of a shape following a reflection or translation, using the appropriate language, and knows that the shape has not changed 	<ul style="list-style-type: none"> • <i>Solves comparison, sum and difference problems using information presented in a line graph</i> • Completes, reads and interprets information in tables, including timetables 		

Overall assessment (tick one box only) **Emerging Year 5** **Developing Year 5** **Secure Year 5**

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