Year 5 – End of Year Expectations

Using and applying

Solve number problems and practical problems with numbers to 1,000,000 in context including measurement

Recognise and describe linear number sequences E.g. 3, 3 ½, 4, 4 ½ …and find the term to term rule in words, E.g. add half

Solve addition and subtraction multi step problems in contexts, deciding which operations and methods to use and why.

Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes

Solve problems involving all operations and a combination of these, including understanding the meaning of the equal sign

Solve problems involving multiplication and division, including scaling, by simple fractions and problems involving simple rates

Solve problems which require knowing percentage and decimal equivalents of 1/2, ¼, 1/5, 2/5and 4/5, and those fractions with a denominator of a multiple of 10 or 25.

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

Solve comparison, sum and difference problems using information presented in a line graph

Solve problems involving number up to three decimal places

Counting and number relationships

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

Read roman numeral to 1000 (M) and recognise years written in Roman numerals

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 denominators that are multiples of the same number

Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams

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

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

Number facts

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

Identify multiples and factors, including finding all factor pairs of 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}

Calculations

Add and subtract numbers mentally with increasingly large numbers, e.g. 12,462 – 2300 = 10,162

Add whole numbers with more than 4 digits, including using formal written methods (columnar)

Subtract whole numbers with more than 4 digits, including using formal written methods (columnar)

Using rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy

Multiply numbers ThHTU x U or ThHTU X TU using a formal written method, including long multiplication

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 whole numbers and those involving decimals by 10, 100 and 1000

Divide whole numbers and those involving decimals by 10, 100 and 1000

Geometry – properties of shapes

Identify 3-D shapes, including cubes and other cuboids, from 2-D representations

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 one whole turn (total 360°)

Geometry – 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.

- angles at a point on a straight line and ½ a turn (total 180°)
- other multiples of 90°

Use the term diagonal and make conjectures about the angles formed between sides and between diagonals and parallel sides

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.
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Statistics

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Complete, read and interpret information in tables, including timetables

Measurement
Measurement

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

Measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres (E.g. 4 + 2b = 20 for a rectangle of sides 2cm and bcm and perimeter of 20)

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

Estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]