

Year 5 Statutory requirements for Maths

Number

1. Place Value

▪ 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.

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

3. Multiplication and Division

▪ 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 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 and use square numbers and cube numbers, and 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.

4. 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 [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$]
▪ 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, $0.71 = \frac{71}{100}$]
▪ 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 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 those fractions with a denominator of a multiple of 10 or 25.

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
▪ 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

▪ 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°); angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°); other multiples of 90°
▪ 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.

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.
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Statistics

▪ solve comparison, sum and difference problems using information presented in a line graph
▪ complete, read and interpret information in tables, including timetables.