



Being a mathematician in Five



A Year 5 Mathematician

Place Value

- I can read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit.
- I can count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.
- I can interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.
- I can round any number up to 1,000,000 to the nearest 10 100 1,000 10,000 and 100,000.
- I can solve number problems and practical problems that involve all of the above.
- I can read Roman numerals to 1000 (M) and recognise years written in Roman numerals.

Calculations

- I can add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).
- I can add and subtract numbers mentally with increasingly large numbers.
- I can use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- I can solve addition and subtraction multistep problems in contexts, deciding which operations and methods to use and why.
- I can identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.
- I know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.
- I can establish whether a number up to 100 is prime and recall prime numbers to 19.
- I can 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.
- I can multiply and divide numbers mentally drawing upon known facts.
- I can 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.
- I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
- I can recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3).
- I can solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.
- I can solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
- I can solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates.

Fractions

- I can compare and order fractions whose denominators are all multiples of the same number.
- I can identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.
- I can recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements.
- I can add and subtract fractions with the same denominator and denominators that are multiples of the same number.

- I can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
- I can read and write decimal numbers as fractions [for example, $0.71 = 71/100$].
- I can recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.
- I can round decimals with two decimal places to the nearest whole number and to one decimal place.
- I can read, write, order and compare numbers with up to three decimal places
- I can solve problems involving number up to three decimal places.
- I can recognise the percent symbol (%) and understand that percent relates to 'number of parts per hundred', write percentages as a fraction with denominator 100, & as a decimal.
- I can solve problems which require knowing the percentage and decimal equivalents of a quarter, a half, one fifth, two fifths, four fifths and those fractions with a denominator of a multiple of 10 or 25

Measurement

- I can convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre).
- I understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints.
- I can measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres.
- I can 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.
- I can estimate volume [for example, using 1 cm³ blocks to build cuboids (including cubes)] and capacity [for example, using water].
- I can solve problems involving converting between units of time.
- I can use all four operations to solve problems involving measure [for example, length, mass, volume, money] using decimal notation, including scaling.

Geometry & Statistics

- Identify 3-D shapes, including cubes and other cuboids, from 2-D representations.
- I know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.
- I can draw given angles, and measure them in degrees (°).
- I can identify: angles at a point and one whole turn (total 360°).
- I can identify angles at a point on a straight line & 1/2 a turn (total 180°).
- I can identify other multiples of 90°.
- I can use the properties of rectangles to deduce related facts and find missing lengths and angles.
- I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
- I can 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.
- I can solve comparison, sum and difference problems using information presented in a line graph.
- I can complete, read and interpret information in tables, including timetables.