

Maths – Key Performance Indicators



Band 1

Number and Place Value

- Count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number
- Count and read numbers to 100 in numerals
- Count and write numbers to 100 in numerals
- Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward
- Identify one more and one less of a given number

Addition and Subtraction

- Represent and use number bonds within 20
- Represent and use subtraction facts within 20

Fractions

- Recognise, find and name a half as one of two equal parts of an object, shape or quantity

Measurement

- Compare, describe and solve practical problems for lengths and heights e.g. long/short, longer/shorter, tall/short, double/half
- Compare, describe and solve practical problems for mass/weight e.g. heavy/light, heavier than, lighter than
- Compare, describe and solve practical problems for capacity and volume eg. full/empty, more than, less than, half, half full, quarter
- Compare, describe and solve practical problems for time e.g. quicker, slower, earlier, later

Properties of Shape

- Recognise and name common 2-D shapes e.g., rectangles (including squares), circles and triangles
- Recognise and name common 3-D shapes e.g. cuboids (including cubes), pyramids and spheres

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Band 2

Number and Place Value

- Count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward
- Compare and order numbers from 0 up to 100; use $<$, $>$ and $=$ signs

Addition and Subtraction

- Solve problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures
- Solve problems with addition and subtraction applying his/her increasing knowledge of mental and written methods
- Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100

Multiplication and Division

- Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers
- Solve problems involving multiplication and division, using concrete materials and mental methods
- Solve problems involving multiplication and division using arrays, repeated addition and multiplication and division facts, including problems in contexts

Fractions

- Recognise, find, name and write fractions $1/3$, $1/4$, $2/4$ and $3/4$ of a length, shape, set of objects or quantity

Measurement

- Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change

Properties of Shape

- Compare and sort common 2-D and 3-D shapes and everyday objects

Position and Direction

- Use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)

Statistics

- Ask and answer questions about totalling and comparing categorical data

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Band 3

Number and Place Value

- Count from 0 in multiples of 4, 8, 50 and 100; find 10 or 100 more or less than a given number
- Recognise the place value of each digit in a three-digit number (hundreds, tens, ones)
- Solve number problems and practical problems involving these ideas

Addition and Subtraction

- Add and subtract numbers mentally, including a three-digit number and ones
- Add and subtract numbers mentally, including a three-digit number and tens
- Add and subtract numbers mentally, including a three-digit number and hundreds

Multiplication and Division

- Recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables
- Write and calculate mathematical statements for multiplication and division using the multiplication tables that he/she knows, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods

Fractions

- Count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10
- Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators
- Recognise and show, using diagrams, equivalent fractions with small denominators

Measurement

- Measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)
- Add and subtract amounts of money to give change, using both £ and p in practical contexts
- Tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks

Properties of Shape

- Identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle

Statistics

- Interpret and present data using bar charts, pictograms and tables

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Band 4

Number and Place Value

- Count in multiples of 6, 7, 9, 25 and 1000
- Count backwards through zero to include negative numbers
- Order and compare numbers beyond 1000
- Round any number to the nearest 10, 100 or 1000

Addition and Subtraction

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

Multiplication and Division

- Recall multiplication and division facts for multiplication tables up to 12×12

Fractions

- Recognise and show, using diagrams, families of common equivalent fractions
- Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten
- Round decimals with one decimal place to the nearest whole number
- Solve simple measure and money problems involving fractions and decimals to two decimal places

Measurement

- Convert between different units of measure <eg>kilometre to metre; hour to minute</eg>

Properties of Shape

- Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- Identify lines of symmetry in 2-D shapes presented in different orientations

Position and Direction

- Plot specified points and draw sides to complete a given polygon

Statistics

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

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Band 5

Number and Place Value

- Read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit
- Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero

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

Multiplication and Division

- Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers
- Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes
- Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates

Fractions

- Compare and order fractions whose denominators are all multiples of the same number
- Read and write decimal numbers as fractions e.g. $0.71 = 71/100$
- Read, write, order and compare numbers with up to three decimal places
- Solve problems which require knowing percentage and decimal equivalents of $1/2$, $1/4$, $1/5$, $2/5$, $4/5$ and those fractions with a denominator of a multiple of 10 or 25
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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)
- 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

Properties of Shape

- Draw given angles, and measure them in degrees ($^\circ$)
- Distinguish between regular and irregular polygons based on reasoning about equal sides and angles

Statistics

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

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Band 6

Number and Place Value

- Round any whole number to a required degree of accuracy
- Use negative numbers in context, and calculate intervals across zero

Addition and Subtraction

- Solve multi-step problems in contexts, deciding which operations and methods to use and why.
- Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

Multiplication and Division

- Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
- Divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context
- Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy

Fractions

- Solve problems which require answers to be rounded to specified degrees of accuracy
- Use written division methods in cases where the answer has up to two decimal places
- Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts

Measurement

- Use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places

Properties of Shape

- Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons

Position and Direction

- Draw and translate simple shapes on the coordinate plane, and reflect them in the axis

Statistics

- Interpret and construct pie charts and line graphs and use these to solve problems
- Calculate and interpret the mean as an average

Ratio and Proportion

- Solve problems involving the calculation of percentages e.g. of measures, and such as 15% of 360 e.g. and the use of percentages for comparison
- Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples

Algebra

- Use simple formulae