

Mathematics Year 6 End of Year Expectations

Number & Place Value

Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit
Round any whole number to a required degree of accuracy
Use negative numbers in context, and calculate intervals across 0
Solve number and practical problems that involve all of the above.

Fractions (decimals & percentages)

Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
Compare and order fractions, including fractions >1
Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions
Multiply simple pairs of proper fractions, writing the answer in its simplest form
Divide proper fractions by whole numbers
Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction.
Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to three decimal places
Multiply one-digit numbers with up to 2 decimal places by whole numbers
Use written division methods in cases where the answer has up to 2 decimal places
Solve problems which require answers to be rounded to specified degrees of accuracy
Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

Calculation

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 whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context
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
Perform mental calculations, including with mixed operations and large numbers.
Identify common factors, common multiples and prime numbers
Use their knowledge of the order of operations to carry out calculations involving the 4 operations
Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why
Solve problems involving addition, subtraction, multiplication and division
Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.

Ratio & Proportion

Solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts
Solve problems involving the calculation of percentages and the use of percentages for comparison
Solve problems involving similar shapes where the scale factor is known or can be found
Solve problems involving unequal sharing and grouping using knowledge of fractions and multiples

Mathematics Year 6 End of Year Expectations continued

Properties of Shape

Draw 2-D shapes using given dimensions and angles
Recognise, describe and build simple 3-D shapes, including making nets
Compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons
Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius
Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

Position & Direction

Describe positions on the full coordinate grid (all 4 quadrants)
Draw and translate simple shapes on the coordinate plane, and reflect them in the axes

Statistics

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

Measurement

Solve problems involving the calculation and conversion of units of measure, using decimal notation up to 2 decimal places where appropriate
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 3 decimal places
Convert between miles and kilometres
Recognise that shapes with the same areas can have different perimeters and vice versa
Recognise when it is possible to use formulae for area and volume of shapes
Calculate the area of parallelograms and triangles
Calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units

Algebra

Use simple formulae
Generate and describe linear number sequences
Express missing number problems algebraically
Find pairs of numbers that satisfy an equation with two unknowns
Enumerate possibilities of combinations of 2 variables