



Place Value National Curriculum Statements

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 zero

Solve number and practical problems that involve all of the above

Manageable Steps

Numbers to 10 million

Compare and order any number

Round any number

Negative numbers (in context)

Negative numbers (more abstract)

Addition, Subtraction, Multiplication and Division National Curriculum Statements

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 four 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.

Manageable Steps

Add and subtract integers

Multiply up to a 4-digit number by a 2-digit number

Short division

Division using factors

Long division

Factors

Common factors

Common multiples

Primes to 100

Squares and cubes

Order of operations

Mental calculations and estimation

Reason from known facts

Fractions, Decimals and Percentages National Curriculum Statements

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

Identify the value of each digit in numbers given to three decimal places and multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places

Multiply one-digit numbers with up to two decimal places by whole numbers

Use written division methods in cases where the answer has up to two 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.

Manageable Steps

Simplify fractions

Fractions on a number line

Compare and order (denominator)

Compare and order (numerator)

Add fractions

Subtract fractions

Mixed addition and subtraction

Multiply fractions by integers

Multiply fractions by fractions

Divide fractions by integers

Four rules with fractions

Fraction of an amount

Fraction of an amount – find the whole

Three decimal places

Multiply by 10, 100 and 1,000

Divide by 10, 100 and 1,000

Multiply decimals by integers

Divide decimals by integers

Division to solve problems

Decimals as fractions

Fractions to decimals

Fractions to percentages

Equivalent Fractions Decimals Percentages

Order FDP

Percentage of an amount

Percentages (missing values)

Measurement National Curriculum Statements

Solve problems involving the calculation and conversion of units of measure, using decimal notation up to three 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 three 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 [for example, mm^3 and km^3]

Manageable Steps

Metric conversions

Convert metric measures

Calculate with metric measures

Miles and kilometres

Imperial measures

Shapes – same area

Area and perimeter

Area of a triangle

Area of a parallelogram

What is volume?

Volume – counting cubes

Volume of a cuboid

Ratio and Proportion National Curriculum Statements

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

Manageable Steps

Using ratio language

Ratio and fractions

Introducing the ratio symbol

Calculating ratio

Unequal sharing

Using scale factors

Calculating scale factors

Ratio and proportion problems

Algebra National Curriculum Statements

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 two variables

Manageable Steps

Find a rule – one step

Find a rule – two step

Forming expressions

Substitution

Formulae

Forming equations

Solve simple one-step equations

Solve two-step equation

Find pairs of values

Geometry – Properties of Shape National Curriculum Statements

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

Manageable Steps

Measure with a protractor

Introduce angles

Calculate angles

Vertically opposite angles

Angles in a triangle

Angles in a triangle – special cases

Angles in a triangle – missing angles

Angles in special quadrilaterals

Angles in regular polygons

Draw shapes accurately

Draw nets of 3-D shapes

Parts of a circle

Geometry – Position and Direction National Curriculum Statements

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

Manageable Steps

The first quadrant

Four quadrants

Translations

Reflections

Statistics National Curriculum Statements

Interpret and construct pie charts and line graphs and use these to solve problems

Calculate and interpret the mean as an average.

Manageable Steps

Line graphs

Circles

Read and interpret pie charts

Draw pie charts

The mean