

A Year 6 Mathematician

Autumn Term

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 zero.

Solve number and practical problems that involve all of the above.

Number - addition subtraction, multiplication + division

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

Multiply multi-digit number up to 4 digits by a 2-digit number using the formal written method of long multiplication.

Divide numbers up to 4 digits by a 2-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 2-digit number using the formal written method of short division, 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 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.

Fractions

Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.

Compare and order fractions, including fractions > 1

Generate and describe linear number sequences (with fractions)

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 [for example $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$]

Divide proper fractions by whole numbers [for example $\frac{1}{3} \div 2 = \frac{1}{6}$]

Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example $\frac{3}{8}$]

Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

Geometry Position and Direction

Describe positions on the full coordinate grid (all four quadrants).

Draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

Spring Term

Number: Decimals

Identify the value of each digit in numbers given to 3 decimal places and multiply numbers by 10, 100 and 1,000 giving answers up to 3 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.

Number: Percentages

Solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison.

Recall and use equivalences between simple fractions, decimals and percentages including in different contexts.

Number: 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 two variables.

Measurement Converting Units

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 3dp.

Convert between miles and kilometres.

Measurement: Perimeter, Area and Volume

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 cm^3 , m^3 and extending to other units (mm^3 , km^3)

Number: Ratio

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 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.

Summer Term

Geometry: Properties of Shapes

Draw 2-D shapes using given dimensions and angles.

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

Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.

Problem Solving

Statistics

4. Illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius.
5. Interpret and construct pie charts and line graphs and use these to solve problems.
6. Calculate the mean as an average.

Investigations

A Year 5 Writer

I can convert verbs into nouns by adding a suffix.

I can distinguish between homophones and other words which are often confused.

I can spell the commonly mis-spelt words from Y5/6 word list.

I can spell most words correctly (Y5/6)

I can maintain legibility, fluency and speed in handwriting through choosing whether or not to join specific letters.

I can use inverted commas, commas for clarity and punctuation for parenthesis mostly correctly and making some correct use of semi-colons, dashes, colons and hyphens.

I can use commas to mark phrases or clauses.

I can use semi-colon, colon and dash.

I can use the colon to introduce a list and a semi-colon within lists.

I can use a hyphen to avoid ambiguity.

I can create atmosphere and integrating dialogue to convey character and advance the action.

I can select vocabulary and grammatical structures that reflect the level of formality required mostly correctly.

I can use a range of cohesive devices including adverbials within and across sentences and paragraphs.

I can use a wide range of clause structures, sometimes varying their position within the sentence.

I can use adverbs, prepositional phrases and expanded noun phrases effectively to add detail, qualification and precision.

I can choose the appropriate form and register for the audience and purpose of writing.

I can vary sentence structure, text features and make appropriate vocabulary choices for the audience, purpose and degrees of formality.

I can use a range of sentence starters to create specific effects.

I can use developed noun phrases to add detail to sentences.

I can use the passive voice for emphasis.

I can use a variety of organisational and presentational devices correct to the text type.

I can write in paragraphs which can clearly signal a change in subject, time, place or event.

A Year 5 Reader

Within my discussion circle I will compare and contrast the different structures of texts and evaluate how effective this is.

I can demonstrate my ability to retrieve information from a range of text in my reading journal.

I will contribute to the discussion circle by reading aloud accurately, fluently and confidently.

I can recommend books to others, stating my reasons on a blog.

I can identify, compare and contrast themes and evidence this in a table.

I can explain my opinions with evidence from the text using Point, Evidence and Explain – PEE)

I can identify and discuss the conventions of different text types in my journal.

I can summarise the main ideas, identify key details and use quotations when analysing complex text in a creative manner.

I can contribute to group performance of poetry and record as part of a group.

I can attempt the pronunciation of unfamiliar words drawing on prior knowledge of similar looking words and add include these in my tolerance list.

I can contribute to our zone reading wall when predicting what might happen next and use details from the text to justify my thoughts.

I can identify the different question types and reflect on my strengths and weaknesses within them.

I can identify at least one strategy, in my reading journal and on reading wall, when tackling each of the different question types that I can apply in my reading task.

I can explain the meaning and impact of vocabulary in a text in my journal and reading wall.

I can evaluate how authors use language including figurative and consider the impact on the reader.

I can sequence the subtle events in a text

I can make predictions based on the details stated and implied in guided reading sessions.