

Year 6 – Phase 1

Place Value

- read, write, order and compare numbers to at least 10,000,000 and determine the value of each digit
- round any whole number to a required degree of accuracy
- identify the value of each digit to 3dp, and multiply and divide numbers by 10, 100 and 1000 where the answers are up to 3dp

Multiplication and Division

- use their knowledge of the order of operations to solve problems involving all four operations
- multiply numbers up to 4-digits by a 2-digit number using long multiplication
- divide numbers up to 4-digits by a 2-digit number using long division,
- solve problems using all four operations
- use estimation to check answers to calculations and use the context to determine accuracy
- identify common factors, common multiples and prime numbers

Addition and Subtraction

- solve addition and subtraction problems in context, explaining their chosen operation and method
- use their knowledge of the order of operations to carry out calculations involving all four operations
- solve problems involving all four operations
- use estimation to check answers to calculations and use the context to determine the accuracy
- perform mental calculations, including with mixed operations and large numbers

Statistics

- calculate and interpret the mean as an average

Fractions

- use common factors to simplify factors
- use common multiples to express fractions in the same denominations
- 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
- associate a fraction with division and calculate decimal equivalents for a simple fraction
- multiply 1 digit numbers with up to 2dp by a whole number
- solve problems which requires answers to be rounded to specified degrees of accuracy
- recall and use equivalences between simple fractions, decimals and percentages in different contexts

Algebra

- use simple formulae
- generate and describe linear number sequences
- find pairs of numbers that satisfy number sequences involving two unknowns

Measurement/Geometry

- solve problems involving the calculation and conversion of units of measure, using decimal notation to 3dp
- use, read, write and convert between standard units for length, mass, volume and time using decimal notation up to 3dp
- recognise that shapes with the same area can have different perimeters and vice versa
- recognise when it is possible to use formulae for area and volume of shapes
- draw 2D shapes using given dimension and angles
- compare and classify geometric shapes based on their properties and sizes, and find unknown angles in triangles, quadrilaterals and other regular polygons
- illustrate and name parts of circles including diameter, radius and circumference, and know 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

Ratio and Proportion

- solve problems involving the relative sizes of two quantities where missing values can be found using integer multiplication and division facts
- solve problems involving the calculation of percentages (eg of measures) such as 15% of 360 and the use of percentages for comparison

Year 6 – Phase 2



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Place Value

- use negative numbers in context, and calculate intervals across 0
- solve number and practical problems that involve all of the above

Addition and Subtraction

- continue practising phase 1 objectives
- work on addition and subtraction through algebra

Fractions

- divide proper fractions by whole numbers
- use written division methods in cases where the answer has up to 2dp

Measurement/Geometry

- convert between miles and kilometres
- calculate the area of parallelograms and triangles
- Calculate, estimate and compare volumes of cubes and cuboids using standard units (cm³ and m³) and extend to other units (mm³ and km³)
- recognise, describe and build simple 3D shapes, including making nets
- 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

Multiplication and Division

- continue practising phase 1 objectives
- interpret remainders as whole number remainders, fractions or by rounding as appropriate for context

Algebra

- express missing number problems algebraically (addition and subtraction)
- enumerate all possibilities of combinations of two variables (addition and subtraction)
- find pairs of numbers that find pairs of numbers that involve number sentences with two unknowns (all 4 operations)

Statistics

- interpret and construct pie charts and line graphs, and use these to solve problems

Ratio and Proportion

- 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



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Year 6 – Phase 3



Place Value

-solve number and place value problems

Addition and Subtraction

-solve multi-step problems in a range of contexts, deciding which operations to use and why

Fractions

-solve problems which require answers to be rounded to specified degrees of accuracy
-recall and use equivalences between simple fractions, decimals and percentages in a range of contexts

Measurement/Geometry

-solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3dp
-compare and classify geometric shapes based on their properties and sizes
-find unknown angles in triangles, quadrilaterals and regular polygons

Multiplication and Division

-solve problems involving all four operations

Algebra

-use simple formulae
-find pairs of numbers that satisfy number sentences involving two unknowns

Ratio and Proportion

-solve problems involving ratio and proportion