Year 6 Long Term Planning

Number and place value

● Children should use the whole number system - saying, reading and writing numbers accurately.

Fractions (including decimals and percentages)

● Children should practise, use and understand the addition and subtraction of fractions with different denominators by identifying equivalent fractions with the same denominator. They should start with fractions where the denominator of one fraction is a multiple of the other and progress to varied and increasingly complex problems.

● Children should use a variety of images to support their understanding of multiplication with fractions. They should use their understanding of the relationship between unit fractions and division to work backwards by multiplying a quantity that represents a unit fraction to find the whole quantity. They practise with simple fractions and decimal fraction equivalents to aid fluency, including listing equivalent fractions to identify fractions with common denominators.

● Children can explore and make conjectures about converting a simple fraction to a decimal fraction. For simple fractions with recurring decimal equivalents, children should learn about rounding the decimal to three decimal places, or other appropriate approximations depending on the context.

● Children also develop their skills of rounding and estimating as a means of predicting and checking the order of magnitude of their answers to decimal calculations.

Algebra

● Children should be introduced to the use of symbols and letters to represent variables and unknowns in mathematical situations that they already understand, such as: • missing numbers, lengths, coordinates and angles • formulae in mathematics and science • arithmetical rules (e.g. a + b = b + a) • generalisations of number patterns • number puzzles

Geometry: properties of shapes

● Children should draw shapes and nets accurately, using measuring tools and conventional markings and labels for lines and angles.

● Children should describe the properties of shapes and explain how unknown angles and lengths can be derived from known measurements. These relationships might be expressed algebraically.

Geometry: position and direction

● Children should draw and label a pair of axes in all four quadrants with equal scaling.

● Children draw and label rectangles, parallelograms and rhombuses, specified by coordinates in the four quadrants, predicting missing coordinates using the properties of shapes.

Addition, subtraction, multiplication and division

● Children should practise addition, subtraction, multiplication and division for larger numbers, using the efficient written methods of columnar addition and subtraction, short and long multiplication, and short and long division.

● They should undertake mental calculations with increasingly large numbers and more complex calculations.

● Children should continue to use all the multiplication tables to calculate mathematical statements in order to maintain their fluency.

● Children should round answers to a specified degree of accuracy.

● Children explore the order of operations using brackets.

● Common factors can be related to finding equivalent fractions.

Ratio and proportion

● Pupils recognise proportionality in contexts when the relations between quantities are in the same ratio.

● Pupils link percentages or 360° to calculating angles of pie charts.

● Children should consolidate their understanding of ratio when comparing quantities, sizes and scale drawings by solving a variety of problems. They may use the notation a:b to record their work.

● Children should solve problems involving unequal quantities. These problems are the foundation for later formal approaches to ratio and proportion.

Measurement

● Using the number line, children should use, add and subtract positive and negative integers for measures such as temperature.

● They should know approximate conversions and be able to tell if an answer is sensible.

● They should relate the area of rectangles to parallelograms and triangles, and be able to calculate their areas, understanding and using the formula to do this.

● Children could be introduced to other compound units for speed, such as miles per hour, and apply their knowledge in science or other subjects as appropriate.

Statistics

● Children should connect their work on angles, fractions and percentages to the interpretation of pie charts.

● Children should both encounter and draw graphs relating two variables, arising from their own enquiry and in other subjects. ● They should connect conversion from kilometres to miles in measure to its graphical representation. ● Children should know when it is appropriate to find the mean of a data set. Key Maths Concepts in Year 6 Ratio and Proportion: solving problems involving unequal sharing Children will already know that if they want to work out how to share, for example, 20 sweets equally between two people,