

## Year 5 Long Term Planning

### Number and place value

- Children should identify the place value in large whole numbers.
- They should continue to use number in context, including measurement. Children extend and apply their understanding of the number system to the decimal numbers and fractions they have met so far.
- They should recognise and describe linear number sequences, including those involving fractions and decimals, and find the term-to-term rule.

### Multiplication and division

- Children should practise and extend their use of the formal written methods of short multiplication and division (see National Curriculum Appendix 1). They apply all the multiplication tables and related division facts, commit them to memory and use them confidently to make larger calculations.
- They should use and understand the terms factor, multiple and prime, square and cube numbers.
- Children should interpret non-integer answers to division by expressing results in different ways according to the context, including with remainders, as fractions, as decimals or by rounding
- Children use multiplication and division as inverses to support the introduction of ratio in Year 6, by multiplying and dividing by powers of 10 in scale drawings or by multiplying and dividing by powers of a 1000 in converting between units such as kilometres and metres. Distributivity can be expressed as  $a(b + c) = ab + ac$  in preparation for using algebra.

### Measurement

- Children should use their knowledge of place value and multiplication and division to convert between standard units.
- Children should calculate the perimeter of rectangles and related composite shapes, including using the relations of perimeter or area to find unknown lengths. They calculate the area from scale drawings using given measurements.
- Children should use all four operations in problems involving time and money, including conversions.

### Geometry: properties of shapes

- Children should become accurate in drawing lines with a ruler to the nearest millimetre, and measuring with a protractor. They use conventional markings for parallel lines and right angles.
- Children should use the term diagonal and make conjectures about the angles formed by diagonals and sides, and other properties of quadrilaterals, for example using dynamic geometry ICT tools.
- Children should use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems.

### Statistics

- Children should connect their work on coordinates and scales to their interpretation of time graphs.
- They should begin to decide which representations of data are most appropriate and why.

### Geometry: position and direction

- Children recognise/use reflection and translation in a variety of diagrams, including continuing to use a 2D grid and coordinates in the first quadrant. Reflection should be in lines parallel to the axes.

### Addition and subtraction

- Children should practise using the formal written methods of columnar addition and subtraction with increasingly large numbers to aid fluency.
- They should practise mental calculations with increasingly large numbers to aid fluency.

### Fractions (including decimals and percentages)

- Children should be taught throughout that percentages, decimals and fractions are different ways of expressing proportions. They extend their knowledge of fractions to thousandths and connect to decimals and measures.
- Children should connect equivalent fractions  $>1$  that simplify to integers with division and fractions  $>1$  to division with remainders, using the number line and other models, and hence move from these to improper and mixed fractions.
- Children should connect multiplication by a fraction to using fractions as operators (fractions of), and to division, building on work from previous years. This relates to scaling by simple fractions.
- Children should practise adding and subtracting fractions to become fluent through a variety of increasingly complex problems. They should extend their understanding of adding and subtracting fractions to calculations that exceed 1 as a mixed number.
- Children should read and write proper fractions and mixed numbers accurately and practise counting forwards and backwards in simple fractions.
- Children should continue to develop their understanding of fractions as numbers, measures and operators by finding fractions of numbers and quantities, writing remainders as fractions.
- Children extend counting from Year 4, using decimals and fractions including bridging zero, for example on a number line.
- Children should say, read and write decimal fractions and related tenths, hundredths and thousandths accurately and are confident in checking the reasonableness of their answers to problems.
- They should mentally add and subtract tenths, and one-digit whole numbers and tenths.
- They should practise adding and subtracting decimals including whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1. Children should go beyond the measurement and money models of decimals.
- Children should make connections between percentages, fractions and decimals and relate this to finding 'fractions of'. They recognise that percentages are proportions of quantities as well as operators on quantities.