

## National Centre for Excellence in the Teaching of Mathematics

### National Curriculum: Year Overview - Year 4

#### Number and Place Value

- ▶ count in multiples of 6, 7, 9, 25 and 1000
- ▶ find 1000 more or less than a given number
- ▶ count backwards through zero to include negative numbers
- ▶ recognise the place value of each digit in a four-digit number (thousands, hundreds, tens, and ones)
- ▶ order and compare numbers beyond 1000
- ▶ identify, represent and estimate numbers using different representations
- ▶ round any number to the nearest 10, 100 or 1000
- ▶ solve number and practical problems that involve all of the above and with increasingly large positive numbers
- ▶ read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.

#### Addition and Subtraction

- ▶ add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate
- ▶ estimate and use inverse operations to check answers to a calculation
- ▶ solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

#### Multiplication and Division

- ▶ recall multiplication and division facts for multiplication tables up to  $12 \times 12$
- ▶ use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers
- ▶ recognise and use factor pairs and commutativity in mental calculations
- ▶ multiply two-digit and three-digit numbers by a one-digit number using formal written layout

- ▶ solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit, integer scaling problems and harder correspondence problems such as  $n$  objects are connected to  $m$  objects.

## Fractions (including decimals and percentages)

- ▶ recognise and show, using diagrams, families of common equivalent fractions
- ▶ count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
- ▶ solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number
- ▶ add and subtract fractions with the same denominator
- ▶ recognise and write decimal equivalents of any number of tenths or hundredths
- ▶ recognise and write decimal equivalents to  $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$
- ▶ find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths
- ▶ round decimals with one decimal place to the nearest whole number
- ▶ compare numbers with the same number of decimal places up to two decimal places
- ▶ solve simple measure and money problems involving fractions and decimals to two decimal places.

## Measurement

- ▶ Convert between different units of measure [for example, kilometre to metre; hour to minute]
- ▶ measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres
- ▶ find the area of rectilinear shapes by counting squares
- ▶ estimate, compare and calculate different measures, including money in pounds and pence
- ▶ read, write and convert time between analogue and digital 12- and 24-hour clocks
- ▶ solve problems involving converting from hours to minutes; minutes to seconds; years to months; weeks to days.

## Geometry - properties of space

- ▶ compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes
- ▶ identify acute and obtuse angles and compare and order angles up to two right angles by size
- ▶ identify lines of symmetry in 2-D shapes presented in different orientations
- ▶ complete a simple symmetric figure with respect to a specific line of symmetry.

## Geometry - position and direction

- ▶ describe positions on a 2-D grid as coordinates in the first quadrant
- ▶ describe movements between positions as translations of a given unit to the left/right and up/down
- ▶ plot specified points and draw sides to complete a given polygon.

## Statistics

- ▶ interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.
- ▶ solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.