

## Stage 5 attainment targets

### Place Value

- Read, write, order & compare numbers to at least 1 000 000 and determine the value of each digit.
- Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100
- Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.
- Solve number problems and practical problems that involve place value
- Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.

### Addition and Subtraction

- Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).
- Add and subtract numbers mentally with increasingly large numbers.
- Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

### Multiplication and Division

- Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers.
- Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. Establish whether a number up to 100 is prime and recall prime numbers up to 19.
- Multiply numbers up to 4 digits by a 1- or 2-digit number using a formal written method, including long multiplication for two digit numbers. Divide numbers up to 4 digits by a 1-digit number using the formal written method of short division and interpret remainders appropriately for the context.
- Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 using mental and written methods.
- Recognise and use square numbers and cube numbers, and the notation for squared and cubed.
- Solve problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.
- Solve problems involving addition, subtraction, multiplication and division and a combination of these including understanding of the equals sign.

- Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates

### Fractions

- Compare and order fractions whose denominators are all multiples of the same number.
- Add and subtract fractions with the same denominator and multiples of the same number
- Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.
- Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements  $> 1$  as a mixed number.
- Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
- Round decimals with two decimal places to the nearest whole number and to one decimal place.
- Read and write decimal numbers as fractions (e.g.  $0.72 = \frac{72}{100}$ ).
- Read, write, order and compare numbers with up to three decimal places.
- Solve problems involving number up to three decimal places.
- Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents.
- Write percentages as a fraction.
- Solve problems which require knowing percentage and decimal equivalents of  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{5}$ ,  $\frac{3}{5}$ ,  $\frac{1}{5}$  and those with a denominator of a multiple of 10 or 25.

### Measure

- Convert between different units of metric measure (e.g. km & m; cm & m; cm & mm; g & kg; l & ml). Use approx. equivalences between metric and imperial units (e.g. inches, pounds & pints).
- Measure & calculate the perimeter of composite rectilinear shapes in cm/m.
- Calculate and compare the area of squares/rectangles using standard units, square cm/m and estimate the area of irregular shapes.
- Estimate volume (e.g. using 1 cm blocks to build cubes/cuboids) and capacity (e.g. using water).
- Solve problems involving converting between units of time.
- Use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.

### Geometry

- Identify 3D shapes, including cubes and other cuboids, from 2D representations.

- Know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles.
- Draw given angles, and measure them in degrees.
- Identify: angles at a point and one whole turn (total  $360^\circ$ ); angles at a point on a straight line and  $\frac{1}{2}$  a turn (total  $180^\circ$ ); other multiples of  $90^\circ$ .
- Use the properties of rectangles to deduce related facts and find missing lengths and angles.
- Distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
- Identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed.

### Statistics

- Solve comparison, sum and difference problems using information presented in a line graph
- Complete, read and interpret information in tables, including timetables.