

## Stage 5

### Thinking and Working Mathematically

- **TWM.01** Specialising
- **TWM.02** Generalising
- **TWM.03** Conjecturing
- **TWM.04** Convincing
- **TWM.05** Characterising
- **TWM.06** Classifying
- **TWM.07** Critiquing
- **TWM.08** Improving

### Number

#### Counting and sequences

- **5Nc.01** Count on and count back in steps of constant size, and extend beyond zero to include negative numbers.
- **5Nc.02** Recognise the use of objects, shapes or symbols to represent two unknown quantities in addition and subtraction calculations.
- **5Nc.03** Use the relationship between repeated addition of a constant and multiplication to find any term of a linear sequence.
- **5Nc.04** Recognise and extend the spatial pattern of square and triangular numbers.

#### Integers and powers

- **5Ni.01** Estimate, add and subtract integers, including where one integer is negative.
- **5Ni.02** Understand which law of arithmetic to apply to simplify calculations.
- **5Ni.03** Understand that the four operations follow a particular order.
- **5Ni.04** Estimate and multiply whole numbers up to 1000 by 1-digit or 2-digit whole numbers.
- **5Ni.05** Estimate and divide whole numbers up to 1000 by 1-digit whole numbers.
- **5Ni.06** Understand and explain the difference between prime and composite numbers.
- **5Ni.07** Use knowledge of factors and multiples to understand tests of divisibility by 4 and 8.
- **5Ni.08** Use knowledge of multiplication to recognise square numbers (from 1 to 100).

**Place value, ordering and rounding**

- **5Np.01** Understand and explain the value of each digit in decimals (tenths and hundredths).
- **5Np.02** Use knowledge of place value to multiply and divide whole numbers by 10, 100 and 1000.
- **5Np.03** Use knowledge of place value to multiply and divide decimals by 10 and 100.
- **5Np.04** Compose, decompose and regroup numbers, including decimals (tenths and hundredths).
- **5Np.05** Round numbers with one decimal place to the nearest whole number.

**Fractions, decimals, percentages, ratio and proportion**

- **5Nf.01** Understand that a fraction can be represented as a division of the numerator by the denominator (unit fractions, three-quarters, tenths and hundredths).
- **5Nf.02** Understand that proper fractions can act as operators.
- **5Nf.03** Recognise that improper fractions and mixed numbers can have an equivalent value.
- **5Nf.04** Recognise that proper fractions, decimals (one decimal place) and percentages can have equivalent values.
- **5Nf.05** Estimate, add and subtract fractions with the same denominator and denominators that are multiples of each other.
- **5Nf.06** Estimate, multiply and divide unit fractions by a whole number.
- **5Nf.07** Recognise percentages of shapes, and write percentages as a fraction with denominator 100.
- **5Nf.08** Understand the relative size of quantities to compare and order numbers with one decimal place, proper fractions with the same denominator and percentages, using the symbols =, > and <.
- **5Nf.09** Estimate, add and subtract numbers with the same number of decimal places.
- **5Nf.10** Estimate and multiply numbers with one decimal place by 1-digit whole numbers.
- **5Nf.11** Understand that:
  - a proportion compares part to whole
  - a ratio compares part to part of two or more quantities.

## Geometry and Measure

### Time

- **5Gt.01** Understand time intervals less than one second.
- **5Gt.02** Compare times between time zones in digital notation (12- and 24-hour) and on analogue clocks.
- **5Gt.03** Find time intervals in seconds, minutes and hours that bridge through 60.
- **5Gt.04** Recognise that a time interval can be expressed as a decimal, or in mixed units.

### Geometrical reasoning, shapes and measurements

- **5Gg.01** Identify, describe, classify and sketch isosceles, equilateral or scalene triangles, including reference to angles and symmetrical properties.
- **5Gg.02** Estimate and measure perimeter and area of 2D shapes, understanding that shapes with the same perimeter can have different areas and vice versa.
- **5Gg.03** Draw compound shapes that can be divided into rectangles and squares. Estimate, measure and calculate their perimeter and area.
- **5Gg.04** Identify, describe and sketch 3D shapes in different orientations.
- **5Gg.05** Identify and sketch different nets for a cube.
- **5Gg.06** Use knowledge of reflective symmetry to identify and complete symmetrical patterns.
- **5Gg.07** Estimate, compare and classify angles, using geometric vocabulary including acute, right, obtuse and reflex.
- **5Gg.08** Know that the sum of the angles on a straight line is  $180^\circ$ , and use this to calculate missing angles on a straight line.

### Position and transformation

- **5Gp.01** Compare the relative position of coordinates (with or without the aid of a grid).
- **5Gp.02** Use knowledge of 2D shapes and coordinates to plot points to form lines and shapes in the first quadrant (with the aid of a grid).
- **5Gp.03** Translate 2D shapes, identifying the corresponding points between the original and the translated image, on square grids.
- **5Gp.04** Reflect 2D shapes in both horizontal and vertical mirror lines to create patterns on square grids.

## Statistics and Probability

### Statistics

- **5Ss.01** Plan and conduct an investigation to answer a set of related statistical questions, considering what data to collect (categorical, discrete and continuous data).
- **5Ss.02** Record, organise and represent categorical, discrete and continuous data. Choose and explain which representation to use in a given situation:
  - Venn and Carroll diagrams
  - tally charts and frequency tables
  - bar charts
  - waffle diagrams
  - frequency diagrams for continuous data
  - line graphs
  - dot plots (one dot per data point).
- **5Ss.03** Understand that the mode and median are ways to describe and summarise data sets. Find and interpret the mode and the median, and consider their appropriateness for the context.
- **5Ss.04** Interpret data, identifying patterns, within and between data sets, to answer statistical questions. Discuss conclusions, considering the sources of variation.

### Probability

- **5Sp.01** Use the language associated with likelihood to describe and compare likelihood and risk of familiar events, including those with equally likely outcomes.
- **5Sp.02** Recognise that some outcomes are equally likely to happen and some outcomes are more (or less) likely to happen, when doing practical activities.
- **5Sp.03** Conduct chance experiments or simulations, using small and large numbers of trials, and present and describe the results using the language of probability.