

Stage 4

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

- **4Nc.01** Count on and count back in steps of constant size: 1-digit numbers, tens, hundreds or thousands, starting from any number, and extending beyond zero to include negative numbers.
- **4Nc.02** Recognise and explain generalisations when adding and subtracting combinations of even and odd numbers.
- **4Nc.03** Recognise the use of objects, shapes or symbols to represent unknown quantities in addition and subtraction calculations.
- **4Nc.04** Recognise and extend linear and non-linear sequences, and describe the term-to-term rule.
- **4Nc.05** Recognise and extend the spatial pattern of square numbers.

Integers and powers

- **4Ni.01** Read and write number names and whole numbers greater than 1000 and less than 0.
- **4Ni.02** Estimate, add and subtract whole numbers with up to three digits.
- **4Ni.03** Understand the associative property of multiplication, and use this to simplify calculations.
- **4Ni.04** Know all times tables from 1 to 10.
- **4Ni.05** Estimate and multiply whole numbers up to 1000 by 1-digit whole numbers.
- **4Ni.06** Estimate and divide whole numbers up to 100 by 1-digit whole numbers.
- **4Ni.07** Understand the relationship between multiples and factors.
- **4Ni.08** Use knowledge of factors and multiples to understand tests of divisibility by 2, 5, 10, 25, 50 and 100.

Place value, ordering and rounding

- **4Np.01** Understand and explain that the value of each digit in numbers is determined by its position in that number.
- **4Np.02** Use knowledge of place value to multiply and divide whole numbers by 10 and 100.
- **4Np.03** Compose, decompose and regroup whole numbers.
- **4Np.04** Understand the relative size of quantities to compare and order positive and negative numbers, using the symbols =, > and <.
- **4Np.05** Round numbers to the nearest 10, 100, 1000, 10 000 or 100 000.

Fractions, decimals, percentages, ratio and proportion

- **4Nf.01** Understand that the more parts a whole is divided into, the smaller the parts become.
- **4Nf.02** Understand that a fraction can be represented as a division of the numerator by the denominator (unit fractions and three-quarters).
- **4Nf.03** Understand that unit fractions can act as operators.
- **4Nf.04** Recognise that two proper fractions can have an equivalent value.
- **4Nf.05** Estimate, add and subtract fractions with the same denominator.
- **4Nf.06** Understand percentage as the number of parts in each hundred, and use the percentage symbol (%).
- **4Nf.07** Use knowledge of equivalence to compare and order proper fractions, using the symbols =, > and <.

Geometry and Measure

Time

- **4Gt.01** Understand the direct relationship between units of time, and convert between them.
- **4Gt.02** Read and record time accurately in digital notation (12- and 24-hour) and on analogue clocks.
- **4Gt.03** Interpret and use the information in timetables (12- and 24-hour clock).
- **4Gt.04** Find time intervals between different units:
 - o days, weeks, months and years
 - o seconds, minutes and hours that do not bridge through 60.

Geometrical reasoning, shapes and measurements

- **4Gg.01** Investigate what shapes can be made if two or more shapes are combined, and analyse their properties, including reference to tessellation.
- **4Gg.02** Estimate and measure perimeter and area of 2D shapes, understanding that two areas can be added together to calculate the area of a compound shape.
- **4Gg.03** Draw rectangles and squares on square grids, and measure their perimeter and area. Derive and use formulae to calculate areas and perimeters of rectangles and squares.
- **4Gg.04** Estimate the area of irregular shapes on a square grid (whole and part squares).
- **4Gg.05** Identify 2D faces of 3D shapes, and describe their properties.
- **4Gg.06** Match nets to their corresponding 3D shapes.
- **4Gg.07** Identify all horizontal, vertical and diagonal lines of symmetry on 2D shapes and patterns.
- **4Gg.08** Estimate, compare and classify angles, using geometric vocabulary including acute, right and obtuse.
- **4Gg.09** Use knowledge of fractions to read and interpret a measuring scale.

Position and transformation

- **4Gp.01** Interpret and create descriptions of position, direction and movement, including reference to cardinal and ordinal points, and their notations.
- **4Gp.02** Understand that position can be described using coordinate notation. Read and plot coordinates in the first quadrant (with the aid of a grid).
- **4Gp.03** Reflect 2D shapes in a horizontal or vertical mirror line, including where the mirror line is the edge of the shape, on square grids.

Statistics and Probability

Statistics

- **4Ss.01** Plan and conduct an investigation to answer statistical questions, considering what data to collect (categorical and discrete data).
- **4Ss.02** Record, organise and represent categorical and discrete data. Choose and explain which representation to use in a given situation:
 - o Venn and Carroll diagrams
 - o tally charts and frequency tables
 - o pictograms and bar charts
 - o dot plots (one dot per count).
- **4Ss.03** Interpret data, identifying similarities and variations, within and between data sets, to answer statistical questions. Discuss conclusions, considering the sources of variation.

Probability

- **4Sp.01** Use language associated with chance to describe familiar events, including reference to maybe, likely, certain, impossible.
- **4Sp.02** Conduct chance experiments, using small and large numbers of trials, and present and describe the results using the language of probability.