Mathematics (Year 5)

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 180º and use this to calculate missing angles on a straight line.

Position and transformations

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.