A Year 5 mathematician

Number, place value, approximation and estimation/rounding
- I can count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000.
- I can read, write, order and compare numbers to at least 1,000,000.
- I can determine the value of each digit in numbers up to 1,000,000.
- I can read Roman numerals to 1,000 (M) and recognise years written in Roman numerals.
- I can round any number up to 1,000,000 to the nearest 10, 100, 1000, 10000 and 100000.
- I can interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero.
- I can solve number problems and practical problems with the above.

Calculations
- I can add and subtract numbers mentally with increasingly large numbers.
- I can add and subtract whole numbers with more than 4 digits, including using formal written methods.
- I can use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy.
- I can solve addition and subtraction multi-step problems in contexts, deciding which operations and
- methods to use and why.
- I can identify multiples and factors, including finding all factor pairs or a number and common factor pairs of two numbers.
- I use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.
- I can establish whether a number up to 100 is prime and recall prime numbers up to 19.
- I recognise and use square numbers and cube numbers, and the notation for squared and cubed.
- I can multiply and divide numbers mentally drawing on known facts.
- I can multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
- I can multiply numbers up to 4 digits by a 1-digit or 2-digit number using a formal written method, including long multiplication for 2-digit numbers.
- I can 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.
- I can solve problems involving multiplication and division including using knowledge of factors and multiples, squares and cubes.
- I can solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign.
- I can solve problems involving multiplication and division including scaling by simple fractions and problems involving simple rates.

Fractions, decimals and percentages
- I can recognise mixed numbers and improper fractions and convert from one form to the other.
- I can write mathematical statements >1 as a mixed number.
- I can identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.
- I can compare and order fractions whose denominators are multiples of the same number.
- I can add and subtract fractions with the same denominator and denominators that are multiples of the same number.
- I can multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
- I can read and write decimal numbers as fractions.
- I recognise and can use thousandths and relate them to tenths, hundredths and decimal equivalents.
- I can round decimals with 2 decimal places to the nearest whole number and 1 decimal place.
- I can read, write, order and compare numbers with up to 3 decimal places.
- I can solve problems involving numbers up to 3 decimal places.
- I recognise the percent symbol and understand that percent relates to 'number parts per hundred'.

- I can write percentages as a fraction with denominator hundred, and as a decimal.
- I can solve problems which require knowing percentage and decimal equivalents of ½, ¼, 1/5, 2/5, 4/5 and those fractions with a denominator or a multiple of 10 or 25.

Measurement
- I can solve problems involving converting between units of time.
- I can convert between different units of metric measure.
- I understand and use approximate equivalences between metric units and
- common imperial units, such as inches, pounds and pints.
- I can measure and calculate the perimeter of composite rectilinear shapes in cm and m.
- I can calculate and compare the area of rectangles (incl squares), and including using standard units (cm2 and cm3) to estimate the area of irregular shapes.
- I can estimate volume and capacity.
- I can use all four operations to solve problems involving money using decimal notation, including scaling.

Geometry – properties of shapes
- I can use the properties of rectangles to deduce related facts and find missing lengths and angles.
- I can distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
- I can identify 3D shapes, including cubes and other cuboids, from 2D representations.
- I know angles are measured in degrees.
- I can estimate and compare acute, obtuse and reflex angles.
- I can identify angles at a point and one whole turn.
- I can identify angles at a point on a straight line and ½ a turn.
- I can identify other multiples of 90°.
- I can draw given angles and measure them in degrees.

Geometry – position and direction
- I can 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
- I can complete, read and interpret information in tables, including timetables.
- I can solve comparison, sum and difference problems using information presented in a line graph.