End of Year 4 expectations - Maths

The National Curriculum for mathematics aims to ensure that all pupils:
- *Become fluent in the fundamentals of mathematics, so that pupils have conceptual understanding and can recall and apply their knowledge rapidly and accurately to problems*
- *Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument or proof using mathematical language*
- *Can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.*

Number and Place Value
- Count in multiples of 6, 7, 9, 25 and 1000; find 1000 more or less than a given number.
- Count backwards through zero to include negative numbers.
- Recognise the place value of each digit in a four-digit number and order and compare numbers beyond 1000.
- Identify, represent and estimate numbers using different representations.
- Round any number to the nearest 10, 100 or 1000.
- Solve number and practical problems that involve all of the above and with increasingly large positive numbers.
- Read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value.

Addition and Subtraction
- Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate.
- Estimate and use inverse operations to check answers to a calculation.
- Solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.
- Estimate the answer to a calculation. and use inverse operations to check answers.
- Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction.

Multiplication and Division
- Recall multiplication.and division facts for multiplication tables up to 12 × 12.
- Use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers.
- Recognise and use factor pairs and commutativity in mental calculations.
- Multiply 2-digit and 3-digit numbers by a 1-digit number using formal written layout.
- Solve problems involving multiplying and adding, using the distributive law to multiply two digit numbers by one digit, integer scaling problems, harder correspondence problems (n objects are connected to m objects.)

Measurement
- Convert between different units of measure [for example, km to m; hour to minute].
- Measure and calculate the perimeter of a rectilinear figure (including squares) in cm and m.
- Find the area of rectilinear shapes by counting squares.
- Estimate, compare and calculate different measures, including money (£ and p).
- Tell and write the time from an analogue clock using Roman numerals from I to XII.

Geometry: Property of Shape
- Compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes.
- Identify acute and obtuse angles and compare and order angles up to two right angles by size □ identify lines of symmetry in 2-D shapes presented in different orientations.
- Complete a simple symmetric figure with respect to a specific line of symmetry.

Fractions (including decimals)
- Recognise and show, using diagrams, families of common equivalent fractions.
- Count up and down in hundredths; recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten.
- Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number
- Add and subtract fractions with the same denominator.
- Recognise and write decimal equivalents of any number of tenths or hundredths, ¼, ½ ¾.
- Find the effect of dividing a 1- or 2-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths.
- Round decimals with one decimal place to the nearest whole number.
- Compare numbers with the same number of decimal places up to two decimal places.
- Solve simple measure and money problems involving fractions and decimals to 2 decimal places.

Geometry: Position and Direction
- Describe positions on a 2-D grid as coordinates in the first quadrant.
- Describe movements between positions as translations of a given unit to the left/right and up/down.
- Plot specified points and draw sides to complete a given polygon.

Statistics
- Interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs.
- Solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs.