H.C.J.S - Year 5 Mathematics

These expectations are based upon the National Curriculum. The skills outlined below consolidate, develop and extend those skills taught in previous years.

By the end of Year 5, we would expect the majority of pupils to be able to:

Year 5 Key Skills – Number
- ☐ count forwards and backwards with positive and negative whole numbers, including through zero.
- ☐ continue to count in any multiples of 2 to 10, 25 and 50.
- ☐ read and write numbers to at least 1 000 000 and determine the value of each digit.
- ☐ read Roman numerals to 1000 (M) and recognise years written in Roman numerals.
- ☐ interpret negative numbers in context.
- ☐ order and compare numbers to at least 1 000 000.
- ☐ round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000.
- ☐ know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers.
- ☐ add and subtract numbers mentally with increasingly large numbers.
- ☐ continue to develop knowledge of addition and subtraction facts and to derive related facts.
- ☐ multiply and divide numbers mentally drawing upon known facts.
- ☐ multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
- ☐ solve calculation problems involving multiplication and division including using their knowledge of factors and multiples, squares and cubes.
- ☐ solve problems involving scaling by simple fractions and problems involving simple rates.
- ☐ identify multiples and factors, including all factor pairs of a number, and common factors of 2 numbers.
- ☐ recall square numbers and cube numbers and the notation for them. Recall prime numbers up to 19.
- ☐ add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction).
- ☐ multiply numbers up to 4 digits by a one- or two digit number using a formal written method, including long multiplication for two-digit numbers.
- ☐ divide numbers up to 4 digits by a one-digit number using formal written method of short division and interpret remainders appropriately for the context.

Year 5 Key Skills – Fractions, decimals and percentages
- ☐ continue to apply their knowledge of multiplication table facts to find equivalent fractions.
- ☐ divide one- or two-digit numbers by 1000, identifying the value of the digits in the answer as ones, tenths, hundredths and thousandths.
- ☐ recognise the per cent symbol and understand that per cent relates to 'number of parts per hundred.
- ☐ identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths.
- ☐ recognise mixed numbers and improper fractions and convert from one form to the other.
- ☐ relate thousandths to decimal equivalents.

- ☐ read and write decimal numbers as fractions.
- ☐ write percentages as a fraction with denominator hundred, and as a decimal.
- ☐ know percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those with a denominator of a multiple of 10 or 25.
- ☐ compare and order fractions whose denominators are all multiples of the same number.
- ☐ add and subtract fractions with the same denominator and denominators that are multiples of the same number, including calculations > 1.
- ☐ multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams.
- ☐ round decimals with two decimal places to the nearest whole number and to one decimal place.
- ☐ read, write, order and compare numbers with up to three decimal places.
- ☐ add and subtract decimals including those with a different number of decimal places.
- ☐ solve problems which require knowing key percentage and decimal equivalents.

Year 5 Key Skills – Measurement
- ☐ continue to develop understanding of how analogue and digital clocks tell the time.
- ☐ develop fluency in using money expressed in £, converting to p when necessary.
- ☐ convert between different units of metric measure.
- ☐ understand and use approximate equivalences between metric units and common imperial units.
- ☐ understand the difference between perimeter as a measure of length and area as a measure of two dimensional space.
- ☐ measure the perimeter of composite rectilinear shapes.
- ☐ estimate the area of irregular shapes and volume and capacity.
- ☐ calculate the perimeter of composite rectilinear shapes.
- ☐ calculate and compare the area of rectangles.

Year 5 Key Skills – Geometry
- ☐ draw given angles, and measure them in degrees and draw shapes with sides measured to the nearest millimetre.
- ☐ use conventional markings for parallel lines and right angles.
- ☐ identify 3-D shapes, including cubes and other cuboids, from 2-D representations.
- ☐ distinguish between regular and irregular polygons based on reasoning about equal sides and angles.
- ☐ identify angles at a point and one whole turn, angles at a point on a straight line and ½ a turn and other multiples of 90°. Estimate and compare acute, obtuse and reflex angles. Use the properties of rectangles to deduce related facts and find missing lengths and angles.
- ☐ continue to use coordinates in the first quadrant to become fluent in their use. Identify the points required to complete a polygon. 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.

Year 5 Key Skills – Statistics
- ☐ interpret more complex tables, including timetables.
- ☐ complete tables, including timetables.

Year 5 Key Skills – Ratio

- multiply numbers up to 4 digits by a one- or two-digit number using a formal method, including long multiplication for two-digit numbers and divide numbers up to 4 digits by a one-digit number using formal short division, interpreting noninteger answers to division according to context.
- solve calculation problems involving scaling by simple fractions and simple rates.

Year 5 Key Skills – Algebra

- express missing measure questions algebraically.
- recognise and describe linear number sequences and find the term to term rule.