



H.C.J.S - Year 6 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 6, we would expect the majority of pupils to be able to:

Year 6 Key Skills – Number

- ☐ calculate intervals across zero.
- ☐ consolidate counting forwards or backwards in steps of powers of 10 for any given number to 1 000 000.
- ☐ consolidate counting in multiples of 2, through to 10, 25 and 50.
- ☐ read and write numbers to 10 000 000 and determine the value of digits.
- ☐ consolidate reading Roman numerals to 1000 (M) and recognising years written in Roman numerals.
- ☐ use negative numbers in context.
- ☐ order and compare numbers up to 10 000 000.
- ☐ round whole numbers to 10 000 000 to a required degree of accuracy.
- ☐ use knowledge of the order of operations.
- ☐ consolidate knowledge of types of number.
- ☐ perform mental calculations, including with mixed operations and large numbers.
- ☐ identify common factors, common multiples and prime numbers greater than 100.
- ☐ consolidate multiplying and dividing whole numbers and decimals by 10, 100 and 1000.
- ☐ solve multistep addition and subtraction problems in less familiar contexts, deciding which operations and methods to use and why
- ☐ consolidate recall of square numbers and cube numbers and the notation for them.
- ☐ consolidate recall of prime numbers up to 19.
- ☐ consolidate adding and subtracting whole numbers with more than 4 digits, including using formal written columnar addition and subtraction.
- ☐ multiply multi digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication.
- ☐ divide numbers up to 4 digits by a two-digit whole number using the formal methods of short or long division, and interpret remainders as appropriate for the context as whole numbers, fractions or by rounding.
- ☐ check answers to calculations with mixed operations and large numbers, choosing the most appropriate method, including estimation, and determining, in the context of a problem, an appropriate degree of accuracy.

Year 6 Key Skills – Fractions, decimals and percentages

- ☐ associate a fraction with divisions.
- ☐ consolidate understanding of equivalent fractions by extending to improper fractions.
- ☐ identify the value of each digit in numbers given to three decimal places.
multiply and divide numbers by 10, 100 and 1000 giving answers up to three decimal places.
- ☐ consolidate recognition of the per cent symbol and understanding that per cent relates to 'number of parts per hundred.
- ☐ use common factors to simplify fractions.
- ☐ use common multiples to express fractions in the same denomination.

- ☐ consolidate understanding of the relation between tenths, hundredths and thousandths and decimal notation.
- ☐ calculate decimal fraction equivalents for a simple fraction.
- ☐ consolidate understanding of the connection between fractions, decimals and percentages.
- ☐ recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.
- ☐ add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.
- ☐ multiply simple pairs of proper fractions.
- ☐ divide proper fractions by whole numbers.
- ☐ round decimals to three decimal places or other approximations depending on the context.
- ☐ use written division methods in cases where the answer has up to two decimal places.
- ☐ multiply one-digit numbers with up to two decimal places by whole numbers.
- ☐ solve problems which require decimal answers to be rounded to specified degrees of accuracy.

Year 6 Key Skills – Measurement

- ☐ continue to develop understanding of how analogue and digital clocks tell the time. Consolidate understanding of converting between units of time.
- ☐ consolidate fluency in using money expressed in £ and p.
- ☐ use, read and write standard units with up to three decimal places, including converting from smaller to larger units and vice versa.
- ☐ convert between miles and kilometres and use a conversion graph.
- ☐ recognise that shapes with the same areas can have different perimeters and vice versa.
- ☐ estimate volume of cubes and cuboids.
- ☐ add and subtract positive and negative measurements such as temperature.
- ☐ consolidate skills in calculating perimeter.
- ☐ calculate the area of parallelograms and triangles.
- ☐ calculate and compare volume of cubes and cuboids using standard units

Year 6 Key Skills – Geometry

- ☐ draw 2-D shapes accurately using given dimensions and angles.
- ☐ use conventional markings and labels for lines and angles.
- ☐ build simple 3-D shapes, including making nets.
- ☐ compare and classify geometric shapes based on increasingly complex geometric properties and sizes.
- ☐ illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter of a circle is twice the radius.
- ☐ recognise 3-D shapes from their nets.
- ☐ recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles.
- ☐ find unknown angles and lengths in triangles, quadrilaterals, and regular polygons.
- ☐ use positions on the full coordinate grid (all four quadrants).
- ☐ draw and label rectangles (including squares), parallelograms and rhombuses specified by coordinates in the four quadrants, predicting missing coordinates using the properties of shapes.
- ☐ draw and translate simple shapes on the coordinate plane, and reflect them in the axes.

Year 6 Key Skills – Statistics

- ☐ interpret data in pie charts.
- ☐ consolidate skills in completing tables, including timetables.
- ☐ solve problems using pie charts and line graphs.
- ☐ calculate and interpret the mean as an average.

Year 6 Key Skills – Ratio

- ☐ solve problems involving the calculation of percentages and the use of percentages for comparison.
- ☐ solve problems involving similar shapes where the scale factor is known or can be found.
- ☐ solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

Year 6 Key Skills – Algebra

- ☐ express missing number problems algebraically.
- ☐ use simple formulae.
- ☐ find pairs of numbers that satisfy an equation with two unknowns.
- ☐ generate and describe linear number sequences.