

Developing numerical reasoning: Key Stage 2

Level 1	Learners use mathematics as an integral part of classroom activities. They represent their work with objects or pictures and discuss it.
Level 2	Learners talk about their work using familiar mathematical language, and represent it using symbols and simple diagrams.
Level 3	Learners organise their work, check results, and try different approaches. They talk about and explain their work. They use and interpret mathematical symbols and diagrams. They find particular examples that satisfy a general statement.
Level 4	Learners develop their own strategies for solving problems, and present information and results systematically. They search for a solution by trying out ideas of their own. They check their results are reasonable by considering the context or the size of the numbers.
Level 5	Learners identify and obtain information to solve problems, and check whether their results are sensible in the context of the problem. They describe situations mathematically using symbols, words and diagrams and draw their own conclusions, explaining their reasoning. They make general statements of their own, based on available evidence. They check their solutions by applying inverse operations or estimating using approximations.
Level 6	Learners solve complex problems by breaking them down into smaller tasks, and give some mathematical justifications to support their methods, arguments or conclusions. They interpret, discuss and synthesise information presented in a variety of mathematical forms. They use trial-and-improvement methods involving approximating and ordering decimals.

Using number: Key Stage 2

Level 1	Learners count, order, add and subtract numbers when solving problems involving up to 10 objects, and can read and write the numbers involved. They count on and back in steps of different sizes and from different numbers. They are aware of the value of different coins.
Level 2	Learners count sets of objects reliably, and use mental recall of number facts to 10 to add or subtract larger numbers. They order numbers up to 100. They choose the appropriate operation when solving addition or subtraction problems. They identify and use halves and quarters in practical situations. They recognise sequences of numbers. They use mental calculation strategies to solve number, money and measure problems.
Level 3	Learners use place value in numbers up to 1 000 to make approximations. They use decimal notation in recording money, and recognise negative numbers in the context of temperature. They develop further mental strategies for adding and subtracting numbers with at least two digits. They use mental recall of the 2, 3, 4, 5 and 10 multiplication tables in solving whole-number problems involving multiplication and division, including those giving rise to remainders.
Level 4	They use their understanding of place value to multiply and divide whole numbers by 10 and 100. They use a variety of mental and written methods for computation, including recall of multiplication facts up to 10 x 10. They add and subtract decimals to two places. They check their results are reasonable by considering the context or the size of the numbers. They use simple fractions and percentages to describe approximate parts of a whole.
Level 5	Learners use their understanding of place value to multiply and divide whole numbers and decimals. They order, add and subtract negative numbers. They check their solutions by applying inverse operations or estimating using approximations. They calculate fractional or percentage parts of quantities and measurements.
Level 6	Learners use trial-and-improvement methods involving approximating and ordering decimals. They calculate one number as a fraction or percentage of another. They use the equivalences between fractions, decimals and percentages and calculate using ratios in appropriate situations.

Using measuring skills: Key Stage 2

Level 1	Learners measure and order objects using direct comparison, and order events.
Level 2	Learners use everyday non-standard and standard units to measure length and mass. They distinguish between straight and turning movements, recognise half-turns and quarter-turns and right angles in turns.
Level 3	Learners use standard units of length, capacity, mass and time.
Level 4	Learners choose and use suitable units and instruments, reading, with appropriate accuracy, numbers on a range of measuring instruments. They find perimeters of shapes, areas by counting squares, and volumes by counting cubes. They use and interpret co-ordinates in the first quadrant.
Level 5	Learners measure and draw angles to the nearest degree. They convert one metric unit to another and know the rough metric equivalents of imperial units in daily use. They make sensible estimates of a range of everyday measures. They find areas of rectangles and triangles and volumes of cuboids. They use co-ordinates in all four quadrants.
Level 6	Learners use formulae for finding circumferences and areas of circles, areas of plane rectilinear figures and volumes of cuboids,

Using data skills: Key Stage 2

Level 1	Learners sort and classify objects, demonstrating the criterion they have used.
Level 2	They sort objects and classify them using more than one criterion. When they have gathered information, they record their results in simple lists, tables, diagrams and block graphs.
Level 3	Learners extract and interpret information presented in simple tables and lists, and construct and interpret bar charts and pictograms.
Level 4	Learners collect discrete data, group data where appropriate, and use the mode and median as characteristics of a set of data. They draw and interpret frequency diagrams and construct and interpret simple line graphs. They understand and use simple vocabulary associated with probability.
Level 5	Learners read scales on maps, plans and graphs. They use the mean of discrete data and compare two simple distributions. They interpret graphs, diagrams and pie charts. They use the probability scale from 0 to 1, and appreciate that different outcomes may result from repeating an experiment.
Level 6	They collect and record continuous data, and construct and interpret frequency diagrams, pie charts and scatter diagrams. They use their knowledge that the total probability of all the mutually exclusive outcomes of an experiment is 1, and find and justify probabilities. They identify all the outcomes when dealing with a combination of two experiments.

Using geometry skills: Key Stage 2

Level 1	They use everyday language to compare and to describe positions and properties of regular shapes.
Level 2	No statement
Level 3	They classify shapes in various ways.
Level 4	They use their knowledge of shape to make 3D mathematical models, draw common 2D shapes in different orientations on grids, and reflect simple shapes in a mirror line.
Level 5	They recognise, identify and describe all the symmetries of 2D shapes.
Level 6	They use common 2D representations of 3D objects, and the properties of quadrilaterals to classify different types of quadrilateral. They solve problems using angle and symmetry properties of polygons and properties of intersecting and parallel lines.

Using algebra skills: Key Stage 2

Level 1	Learners recognise, use and make repeating patterns.
Level 2	Learners recognise sequences of numbers.
Level 3	Learners find particular examples that satisfy a general statement.
Level 4	Learners recognise and describe number patterns and relationships and use simple formulae expressed in words.
Level 5	Learners construct and use simple formulae involving one or two operations.
Level 6	Learners find and describe in words the rule for the next term or nth term of a sequence where the rule is linear, and they formulate and solve a variety of simple linear equations. They represent mappings expressed algebraically.