



Mathematical Vocabulary List

Addition	Finding the total value of two or more numbers. Denoted by the symbol +
Analogue clock	A clock which tells the time using an hour hand to indicate the hour as well as a minute hand to indicate minutes to and past the hour.
Angle	The space between two intersecting lines, measured in degrees.
Anticlockwise	In the opposite direction from the normal direction of travel of the hands of an analogue clock.
Array	A pictorial representation to help pupils understand multiplication and division. Typically shown as rows of dots, for example, 2×3 would be shown as two rows of three dots.
Arrow cards	Used to help pupils understand partitioning and recombining in place value. Each card shows a hundreds, tens or ones number, e.g. 200, 500, 50, 70, 3, 4, and can be placed on top of one another to make 2- and 3-digit numbers.
Bar chart	A chart that displays information using blocks of different heights displayed on axes.
Block graph	A simple chart which displays information using blocks, displayed on a horizontal axis labelled with categories, and a vertical axis labelled with numbers. Each block represents one unit.
Bridging through 10	A mental method of adding two numbers whose total is greater than 10. Pupils are taught to count on to 10 and then add the remainder of the number to 10. For example: $7 + 9$ - bridging from 7 to 10 requires 3, which leaves 6 (from the original 9), $10 + 6 = 16$.
Calculation	Working out the amount or number of something, usually by using one of the four operations. See the whole school calculation policy for the various methods.
Capacity	The term used when measuring how much fluid fits inside a container. Measured in millilitres and litres.
Cardinal numbers	Numbers used to count a set of objects and give information about quantity - one, two, three, four and so on.
Carroll diagram	A way of sorting and presenting information using columns and rows.
Centimetre	A unit of measurement that is equivalent to one-hundredth of a metre. The symbol for centimetre is cm.
Chart	Another term for a graph or other way of presenting information.
Circle	A 2D shape with one curved side where all the points are a fixed distance from the centre.
Clockwise	Clockwise involves a turn to the right as if following the normal direction of the hands of a clock.
Column addition and subtraction	An abstract written method of setting out an addition or subtraction using place value columns.
Commutative	Addition and multiplication have the property of commutativity - when two numbers are added or multiplied, this can be done in any order and the same answer will be obtained: $3 + 2 = 5$, $2 + 3 = 5$; $4 \times 6 = 24$, $6 \times 4 = 24$. Subtraction and division are not commutative.
Composite shape	A shape formed by combining two or more shapes.
Concrete materials	Anything which pupils may use to help them carry out practical maths activities, for example counters to help with addition, cubes and rods for place value or playdough to make 3D shapes.
Cone	A 3D shape with a circular base and a face that joins the circular base to one

	vertex.
Corner	When dealing with 2D and 3D shapes, the word vertex (singular) or vertices (plural) is preferred to describe a corner.
Cube	A 3D shape with six square faces, 12 edges and 8 vertices.
Cuboid	A 3D shape with six faces, some or all of which are rectangular, 12 edges and 8 vertices.
Cylinder	A 3D shape with two circular faces and a curved face which joins these.
Data handling	Now known as Statistics. The area of maths which looks at representation and analysis of information through charts and graphs.
Diagonal	A straight line that joins two vertices of a shape that are not next to each other.
Diagram	A picture, geometric figure or representation.
Dienes	Wooden or plastic cubes, rods and flats used to support pupils in learning place value. Each small cube represents one unit, a rod represents 10, a flat represents 100 and a large cube represents 1000.
Difference	The numerical difference between two numbers. For example the difference between 8 and 3 is 5.
Digit	The symbols of the number system. For example 45 is a two digit number.
Digital clock	A clock which tells the time using numbers only.
Division	The process of dividing a number up into equal parts, and finding how many equal parts can be made. It is represented by the symbol ' $\div$ ' or sometimes '/'.
Division fact	A division number sentence related to the times tables. For example, the division fact $16 \div 4 = 4$ is related to the 4x table.
Double	Multiply by 2.
Edge	A line joining two vertices on a 3D shape.
Equal	Having the same value as. Symbol is =
Equivalent fractions	Fractions which represent the same amount but are expressed using different numbers. For example $3/9$ is equivalent to $1/3$.
Even numbers	A whole number that is divisible by 2. Even numbers always end with 0, 2, 4, 6 or 8.
Face	Any flat surface of a 3D shape. Faces can be flat or curved and of many different shapes.
Finding the difference	A way of carrying out subtraction calculations by finding the numerical difference between two numbers. To solve the number sentence $47 - 34$, find the difference between 34 and 47. Most often taught by using a number line to count on from the smaller to the bigger number. See also jump method.
Fraction	A fraction is a number which represents part of a whole. The result of dividing one number by another.
Frequency	The number of times that something occurs.
Geometry	The study of shape, position and movement. Includes such aspects as 2D and 3D shapes, angles, symmetry, pattern, tessellation, turns and position.
Gram	A unit of mass equal to one thousandth of a kilogram. Symbol is g
Greater than (>) and less than (<)	Symbols used to show the relative size of numbers. The wide end of the symbol always faces the larger number, e.g. $25 > 10$.
Hexagon	A 2D shape with six sides and six vertices.
Horizontal	A horizontal line runs from left to right joining equivalent points that is parallel to the horizon.
Hour	A unit of time. There are 60 minutes in an hour and 24 hours in a day.
Hundred square	A 10 by 10 square grid with the numbers 1 to 100.

Infinite	Going on forever when referring to a sequence or a set.
Inverse operation	The calculation which is opposite to a given calculation, and effectively reverses it. Addition is the inverse of subtraction, multiplication is the inverse of division. For the calculation $4 + 3 = 7$, the following calculations also applies: $3 + 4 = 7$ (commutativity), $7 - 4 = 3$, $7 - 3 = 4$. For the calculation $3 \times 2 = 6$, we can also say $2 \times 3 = 6$ (commutativity), $6 \div 2 = 3$, $6 \div 3 = 2$.
Investigation	Maths investigations require pupils to apply skills and knowledge to solving problems. Investigations differ from word problems because there isn't always just one way of working them out and the solution might have to be found through trial and error. Sometimes there may be several answers.
Irregular shapes	2D shapes whose sides and angles are not all the same.
KIRFS	KIRF stands for Key Instant Recall Facts. These are addition, subtraction, multiplication and division facts that pupils should learn to recall instantly to support more complex calculations. Examples include number bonds and multiplication tables.
Kite	A shape with two pairs of equal, adjacent sides.
Length	The distance between points.
Mass	This refers to the amount of substance that makes up an object. It is measured in grams (g) and kilograms (kg).
Measurement	Pupils learn about different forms of measurement, including length, mass, capacity, time and temperature.
Mental method	Calculations and problem solving carried out mentally, without the need to write down any working out.
Minus	A name for the symbol - which represents the operation of subtraction.
Mirror line	A line which can be drawn onto a shape to show that both sides have exact reflective symmetry.
Missing number problems	A type of problem. For example $6 = \underline{\quad} - 8$
Multiple	The numbers in a multiplication table are multiples of that times table For example multiples of 3 include 9, 15 and 30
Multiplication	Finding how many altogether in a given number of equal sized groups. Represented by the symbol 'x'.
Multiplication fact	The answer to a multiplication calculation. For example in $3 \times 3 = 9$, the multiplication fact is 9.
Multiplication tables	The multiplication calculations for all numbers from 1×2 to 12×10 . Usually grouped by the number being multiplied. Pupils begin by learning the 2x, 5x and 10x tables in Key Stage 1.
Number bonds	Pairs of numbers that add up to a specific number. For example, the number bonds to 10 are $10 + 0$, $9 + 1$, $8 + 2$ and so on. Pupils are taught these bonds early on, as they help calculation skills and also show patterns that are repeated for other number bonds, for example to 20 or 100.
Number ladder	A vertical version of a number line.
Number line	A visual representation of numbers along a horizontal line. Can start at zero or represent a set of numbers from elsewhere in the number system. Used to support counting, place value and calculation skills.
Number sentence	An arrangement of numbers and symbols. $3 + 4 = 7$ is an addition number sentence, $7 - 3 = 4$ is a subtraction number sentence. $3 \times 5 = 15$ is a multiplication number sentence, $15 \div 3 = 5$ is a division number sentence.
Number square	A set of numbers written in sequence in a square format. Often used with

	numbers from 1 to 100, it is a valuable primary school teaching aid as it teaches number sequences and patterns, as well as basic addition and subtraction.
Numeral	A symbol used to denote a number.
Numicon	A primary school teaching aid consisting of plastic tiles with holes which represent the numbers 1 to 10 and can be used to teach place value, ordering and calculation.
Oblong	A quadrilateral with two pairs of parallel sides where adjacent sides are different lengths.
Octagon	A 2D shape with eight sides and eight vertices.
Odd numbers	All whole numbers which are not exactly divisible by 2. Odd numbers always end in 1, 3, 5, 7 or 9.
Operation	The four mathematical operations are addition, subtraction, multiplication and addition.
Ordering	Putting numbers in the correct order according to value. Ascending order goes smallest to largest, descending order from largest to smallest. Ordering also involves using the greater than, less than and equals symbols (<, > and =).
Ordinal numbers	Numbers which indicate order - 1st, 2nd, 3rd and so on.
Partitioning	To split a number into component parts. E.g. 28 can be partitioned into 20 + 8 or 14 + 14. See also recombining.
Pentagon	A 2D shape with 5 sides and 5 vertices.
Pictogram	A chart or graph which uses pictures to represent data. They are set out the same way as bar charts but use pictures instead of bars. Each picture could represent one item or more than one.
Pictorial representation	Using pictures to represent the structure of a mathematical concept to support understanding.
Place value	The value of a digit within in a number. For example, in the number 627, the digit '2' is worth 20, the digit '6' is worth 600.
Plus	A name for the symbol +, representing the operation of addition.
Polygon	A 2D shape with straight, fully closed sides. A polygon can have any number of sides. The most common are triangles, squares, hexagons etc. A circle is not a polygon.
Pound sterling	A unit of money. Symbol is £ £1 = 100 pence.
Prism	A 3D shape with flat sides and identically shaped end faces. The cross section of a prism is the same all the way through. Prisms are named according to their base. Examples are a triangular prism and a hexagonal prism.
Product	The product of two numbers is the result achieved when they are multiplied together.
Pyramid (square-based)	A 3D shape with 4 triangular faces, one square face and 5 vertices.
Pyramid (triangular-based)	A 3D shape with 4 triangular faces and four vertices.
Quadrilateral	Any shape with four sides.
Quantity	Something that has a numerical value.
Quarter turn	A rotation through 90°
Recombining	See also partitioning. Recombining is putting the individual digit place values of a number back together to make the original number. For example 200 +

	50 + 3 is recombined to make 253.
Rectangle	A 2D shape with four straight sides and four right angles. Opposite sides are the same length. If all sides are the same length, the shape is a square. If adjacent sides are not equal, the rectangle is should be referred to as an oblong.
Regular shapes	2D shapes with closed sides, where all sides are the same length and all angles are the same.
Repeated addition	A way of teaching about multiplication as the repeated grouping of the same number. For example, 4×2 is the same as four groups of 2, or $2 + 2 + 2 + 2$.
Repeated subtraction	A way of teaching about division as the repeated subtraction of the same number down to zero. For example $15 \div 3$ is the same as 15 shared into 3 groups of 5, or 15 $- 5 - 5 - 5 = 0$.
Rotation (of shapes)	The movement of shapes around a fixed point, by a given number of degrees and in a certain direction (clockwise or anticlockwise). The shape itself will remain the same but its position in the space will change.
Second	Unit of time. 60 seconds = 1 minute.
Sequence	A succession of terms formed according to a rule.
Sharing	Pupils learn early on how to share a number of objects into equal groups. This develops an early understanding of division.
Side	A line joining two vertices on a 2D shape.
Sign	A symbol used to denote an operation.
Sphere	A 3D shape with one curved face, no edges and no vertices. All points of the face are fixed distance from the centre.
Square	A 2D shape with four equal sides, four vertices and four right angles.
Standard and non-standard units	Standard units are the common units used in measurement, for example centimetres, litres, grams. Non-standard units are used for measurement with younger pupils, to introduce them to the concept of measuring - for example, they might investigate how many cupfuls of sand fill a bucket, or how many cubes weigh the same as a book.
Subtract	Carry out the process of subtraction.
Subtraction	Taking one number away from another, finding the difference between the two. Denoted by the symbol -
Subtraction on a number line	See also finding the difference. Pupils are taught to use a number line to carry out subtraction calculations, either by counting back from the starting number or by finding the difference between the smaller and greater number in the calculation.
Sum	The result of adding two numbers together.
Take away	See subtract
Tally chart	A chart used for the initial collection of data. Making marks to represent objects counted, usually by drawing vertical lines and crossing the fifth count with a horizontal or diagonal strike through.
Temperature	A measure of warmth in °C (Celsius).
Time interval	The length of time between two given times.
Times tables	See multiplication tables.
Total	The sum found by adding.
Triangle	A 2D shape with three straight sides and three vertices. Can be equilateral, isosceles, right-angled or scalene.
Turns	A movement in a space, either clockwise or anticlockwise. A quarter turn is 90°, a half turn is 180°, a three-quarter turn is 270° and a full turn is 360°.

Unit	A standard used in measuring.
Vertex/vertices	Also known as corner/s. The place on a 3D shape where three faces meet. Also commonly used to describe the corners of a 2D shape.
Vertical	A line which runs up and down a page or shape, from top to bottom. It will intersect a horizontal line at right angles.
Volume	The amount of space taken up by an object.
Whole number	A number which contains no fractions or parts of a whole such as decimal numbers.
Word problem	A mathematical calculation presented in words. Pupils are taught to find the key information, work out what type of calculation is needed and then work out the answer.
Written method	A way of carrying out a calculation which is done on paper rather than entirely mentally.
24 hour clock	The 12 hour clock runs from 1 o'clock to 12 o'clock twice per day. The 24 hour clock runs from 00:00 hours (midnight or 12.00 am) through 24 hours to 23:59 (11.59 pm).
2D shapes	Shapes which are flat, having only two dimensions - length and width.
3D shapes	Shapes which have a solid form, having 3 dimensions - length, width and depth.