



Wistaston Academy Maths Glossary

MATHS VOCABULARY	DEFINITION
acute angle	An angle between 0 and 90 degrees.
addition	The operation is denoted by the + sign. When we write $5 + 3$ we mean 'add 3 to 5'; we can also read this as '5 plus 3'. In practice the order of addition does not matter: The answer to $5 + 3$ is the same as $3 + 5$ and in both cases the sum is 8. This holds for all pairs of numbers and therefore the operation of addition is said to be commutative. The result of the addition is called the sum or total.
algebra	The part of mathematics that deals with generalised arithmetic. Letters are used to denote variables and unknown numbers and to state general properties. Example: $a(x + y) = ax + ay$ exemplifies a relationship that is true for any numbers a , x and y .
analogue clock	A clock usually with 12 equal divisions labelled 'clockwise' from the top 12, 1, 2, 3 and so on up to 11 to represent hours. Commonly, each of the twelve divisions is further subdivided into five equal parts providing sixty minor divisions to represent minutes. The clock has two hands that rotate about the centre. The minute hand completes one revolution in one hour, whilst the hour hand completes one revolution in 12 hours. Sometimes the Roman numerals XII, I, II, III, IV, V, VI, VII, VIII, IX, X, XI are used instead of the standard numerals used today.
angle	An angle is a measure of rotation and is often shown as the amount of rotation required to turn one line segment onto another where the two line segments meet at a point.
angle at a point	The complete angle all the way around a point is 360° .
angle at a point on a line	The sum of the angles at a point on a line is 180° .
anticlockwise	In the opposite direction from the normal direction of travel of the hands of an analogue clock.

axis	A fixed, reference line along which or from which distances or angles are taken.
axis of symmetry	A line about which a geometrical figure, or shape, is symmetrical or about which a geometrical shape or figure is reflected in order to produce a symmetrical shape or picture. Reflective symmetry exists when for every point on one side of the line there is another point (its image) on the other side of the line which is the same perpendicular distance from the line as the initial point. Example: a regular hexagon has six lines of symmetry; an equilateral triangle has three lines of symmetry.
bar chart	A format for representing statistical information. Bars, of equal width, represent frequencies and the lengths of the bars are proportional to the frequencies (and often equal to the frequencies). Sometimes called bar graph. The bars may be vertical or horizontal depending on the orientation of the chart.
block graph	A simple format for representing statistical information. One block represents one observation. Example: A birthday graph where each child places one block, or colours one square, to represent himself / herself in the month in which he or she was born.
brackets	Symbols used to group numbers in arithmetic or letters and numbers in algebra and indicating certain operations as having priority. Example: $2 \times (3 + 4) = 2 \times 7 = 14$ whereas $2 \times 3 + 4 = 6 + 4 = 10$. Example: $3(x + 4)$ denotes the result of adding 4 to a number and then multiplying by 3; $(x + 1)^2$ denotes the result of adding 1 to a number and then squaring the result.
capacity	The volume of a material (typically liquid or air) held in a vessel or container. Units include litres, decilitres, millilitres; cubic centimetres (cm ³) and cubic metres (m ³).
cardinal number	A cardinal number denotes quantity, as opposed to an ordinal number which denotes position within a series.

	1, 2, 5, 23 are examples of cardinal numbers First (1st), second (2nd), third (3rd) etc denote position in a series, and are ordinals.
Carroll diagram	A sorting diagram named after Lewis Carroll, author and mathematician, in which numbers (or objects) are classified as having a certain property or not having that property.
Categorical data	Data arising from situations where categories (unordered discrete) are used. Examples: pets, pupils' favourite colours; states of matter – solids, liquids, gases, gels etc; nutrient groups in foods – carbohydrates, proteins, fats etc; settlement types – hamlet, village, town, city etc; and types of land use – offices, industry, shops, open space, residential etc.
centi–	Prefix meaning one-hundredth (of)
centimetre	Symbol: cm. A unit of linear measure equivalent to one hundredth of a metre.
Centre	The middle point for example of a line or a circle.
chronological	Relating to events that occur in a time ordered sequence.
circle	The set of all points in a plane which are at a fixed distance (the radius) from a fixed point (the centre) also in the plane Alternatively, the path traced by a single point travelling in a plane at a fixed distance (the radius) from a fixed point (the centre) in the same plane. One half of a circle cut off by a diameter is a semi-circle.
circumference	The distance around a circle (its perimeter). If the radius of a circle is r units, and the diameter d units, then the circumference is $2r$, or d units.
column	A vertical arrangement for example, in a table the cells arranged vertically.
column	A formal method of setting out an addition or a subtraction in

addition or subtraction	ordered columns with each column representing a decimal place value and ordered from right to left in increasing powers of 10. With addition, more than two numbers can be added together using column addition, but this extension does not work for subtraction.
common factor	A number which is a factor of two or more other numbers, for example 3 is a common factor of the numbers 9 and 30.
common fraction	A fraction where the numerator and denominator are both integers. Also known as simple or vulgar fraction. Contrast with a compound or complex fraction where the numerator or denominator or both contain fractions.
common multiple	An integer which is a multiple of a given set of integers, e.g. 24 is a common multiple of 2, 3, 4, 6, 8 and 12.
commutative	A binary operation $*$ on a set S is commutative if $a * b = b * a$ for all a and $b \in S$. Addition and multiplication of real numbers are commutative where $a + b = b + a$ and $a \times b = b \times a$ for all real numbers a and b . It follows that, for example, $2 + 3 = 3 + 2$ and $2 \times 3 = 3 \times 2$.
compasses (pair of)	An instrument for constructing circles and circular arcs and for marking points at a given distance from a fixed point.
KS2) compensation (in calculation)	A mental or written calculation strategy where one number is rounded to make the calculation easier. The calculation is then adjusted by an appropriate compensatory addition or subtraction. Examples: <ul style="list-style-type: none"> • $56 + 38$ is treated as $56 + 40$ and then 2 is subtracted to compensate. • 27×19 is treated as 27×20 and then 27 (i.e. 27×1) is subtracted to compensate. • $67 - 39$ is treated as $67 - 40$ and then 1 is added to compensate.
complement (in addition)	In addition, a number and its complement have a given total. Example: When considering complements in 100, 67 has the complement 33, since $67 + 33 = 100$.
composite shape	A shape formed by combining two or more shapes.

concrete objects	Objects that can be handled and manipulated to support understanding of the structure of a mathematical concept. Materials such as Dienes (Base 10 materials), Cuisenaire, Numicon, pattern blocks are all examples of concrete objects.
cone	A cone is a 3-dimensional shape consisting of a circular base, a vertex in a different plane, and line segments joining all the points on the circle to the vertex. If the vertex A lies directly above the centre O of the base, then the axis of the cone AO is perpendicular to the base and the shape is a right circular cone.
conjecture	An educated guess (or otherwise!) of a particular result, which is as yet unverified.
consecutive	Following in order. Consecutive numbers are adjacent in a count. Examples: 5, 6, 7 are consecutive numbers. 25, 30, 35 are consecutive multiples of 5 multiples of 5. In a polygon, consecutive sides share a common vertex and consecutive angles share a common side.
continuous data	Data arising from measurements taken on a continuous variable (examples: lengths of caterpillars; weight of crisp packets). Continuous data may be grouped into touching but non-overlapping categories.
convert	Changing from one quantity or measurement to another.
coordinate	In geometry, a coordinate system is a system which uses one or more numbers, or coordinates, to uniquely determine the position of a point in space .
count	The act of assigning one number name to each of a set of objects (or sounds or movements) in order to determine how many objects there are. In order to count reliably children need to be able to: • Understand that the number words come in a fixed order • Say the numbers in the correct sequence; • Organise their counting

	(e.g. say one number for each object and keep track of which things they have counted); • Understand that the final word in the count gives the total • Understand that the last number of the count remains unchanged irrespective of the order (conservation of number).
cross-section	In geometry, a section in which the plane that cuts a figure is at right angles to an axis of the figure. Example: In a cube, a square revealed when a plane cuts at right angles to a face.
cube	In geometry, a three-dimensional figure with six identical, square faces. Adjoining edges and faces are at right angles. In number and algebra, the result of multiplying to power of three, n^3 is read as 'n cubed' or 'n to the power of three' Example: Written 2^3 , the cube of 2 is $(2 \times 2 \times 2) = 8$.
cube number	A number that can be expressed as the product of three equal integers. Example: $27 = 3 \times 3 \times 3$. Consequently, 27 is a cube number; it is the cube of 3 or 3 cubed. This is written compactly as $27 = 3^3$, using index, or power, notation.
cuboid	A three-dimensional figure with six rectangular faces.
curved surface	The curved boundary of a 3-D solid, for example; the curved surface of a cylinder between the two circular ends, or the curved surface of a cone between its circular base and its vertex, or the surface of a sphere.
cylinder	A three-dimensional object whose uniform cross-section is a circle. A right cylinder can be defined as having circular bases with a curved surface joining them, this surface formed by line segments joining corresponding points on the circles. The centre of one base lies over the centre of the second.
data	Information of a quantitative nature consisting of counts or measurements. Initially data are nearly always counts or things like percentages derived from counts. When they refer to measurements that are separate and can be counted, the data are discrete. When they refer to quantities such as length or

	capacity that are measured, the data are continuous.
database	A means of storing sets of data.
decimal	Relating to the base ten. Most commonly used synonymously with decimal fractions where the number of tenths, hundredth, thousandths, etc. are represented as digits following a decimal point. The decimal point is placed at the right of the ones column. Each column after the decimal point is a decimal place.
decimal fraction	Tenths, hundredths, thousandths etc represented by digits following a decimal point. Example 0.125 is equivalent to $\frac{1}{10} + \frac{2}{100} + \frac{5}{1000}$ or $\frac{1}{8}$ The decimal fraction representing $\frac{1}{8}$ is a terminating decimal fraction since it has a finite number of decimal places. Other fractions such as $\frac{1}{3}$ produce recurring decimal fractions. These have a digit or group of digits that is repeated indefinitely. In recording such decimal fractions a dot is written over the single digit, or the first and last digits of the group, that is repeated.
deduction	Deduction is typical mathematical reasoning where the conclusion follows necessarily from a set of premises (as far as the curriculum goes these are the rules of arithmetic and their generalisation in algebra, and the rules relating to lines, angles, triangles, circles etc. in geometry); if the premises are true then following deductive rules the conclusion must also be true.
degree	The most common unit of measurement for angle.
degree of accuracy	A measure of the precision of a calculation, or the representation of a quantity. A number may be recorded as accurate to a given number of decimal places, or rounded to the nearest integer, or to so many significant figures.
denominator	In the notation of common fractions, the number written below the line i.e. the divisor. Example: In the fraction $\frac{2}{3}$ the denominator is 3.
diagram	A picture, a geometric figure or a representation.

diameter	Any of the chords of a circle or sphere that pass through the centre.
difference	In mathematics (as distinct from its everyday meaning), difference means the numerical difference between two numbers or sets of objects and is found by comparing the quantity of one set of objects with another. e.g. the difference between 12 and 5 is 7; 12 is 5 more than 7 or 7 is 5 fewer than 12. Difference is one way of thinking about subtraction and can, in some circumstances, be a more helpful image for subtraction than 'takeaway' – e.g. $102 - 98$.
digit	One of the symbols of a number system most commonly the symbols 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9. Examples: the number 29 is a 2-digit number; there are three digits in 2.95. The position or place of a digit in a number conveys its value.
digital clock	A clock that displays the time as hours and minutes passed, usually since midnight. Example: four thirty in the afternoon is displayed as 16:30.
direction	The orientation of a line in space. e.g. north, south, east, west; up, down, right, left are directions.
dissection	To cut into parts.
distance between	A measure of the separation of two points.
divide	To carry out the operation of division.
divisibility	The property of being divisible by a given number. Example: A test of divisibility by 9 checks if a number can be divided by 9 with no remainder.
divisible (by)	A whole number is divisible by another if there is no remainder

	after division and the result is a whole number. Example: 63 is divisible by 7 because $63 \div 7 = 9$ remainder 0. However, 63 is not divisible by 8 because $63 \div 8 = 7.875$ or 7 remainder 7.
division	An operation on numbers interpreted in a number of ways. Division can be sharing – the number to be divided is shared equally into the stated number of parts; or grouping – the number of groups of a given size is found. Division is the inverse operation to multiplication. 2. On a scale, one part. Example: Each division on a ruler might represent a millimetre.
divisor	The number by which another is divided. Example: In the calculation $30 \div 6 = 5$, the divisor is 6. In this example, 30 is the dividend and 5 is the quotient.
dodecahedron	A polyhedron with twelve faces. The faces of a regular dodecahedron are regular pentagons. A dodecahedron has 20 vertices and 30 edges.
double	To multiply by 2. Example: Double 13 is $(13 \times 2) = 26$. 2. The number or quantity that is twice another. Example: 26 is double 13. In this context, a ‘near double’ is one away from a double. Example: 27 is a near double of 13 and of 14. (N.B. spotting near doubles can be a useful mental calculation strategy e.g. seeing $25 + 27$ as 2 more than double 25.
edge	A line segment, joining two vertices of a figure. A line segment formed by the intersection of two plane surfaces. Examples: a square has four edges; and a cuboid has twelve edges.
efficient methods	A means of calculation (which can be mental or written) that achieves a correct answer with as few steps as possible. In written calculations this often involves setting out calculations in a columnar layout. If a calculator is used the most efficient method uses as few key entries as possible.
equal	Symbol: =, read as ‘is equal to’ or ‘equals’. and meaning ‘having the same value as’. Example: $7 - 2 = 4 + 1$ since both expressions, $7 - 2$ and $4 + 1$ have the same value, 5.

equivalent fractions	Fractions with the same value as another. For example: $\frac{4}{8}$, $\frac{5}{10}$, $\frac{8}{16}$ are all equivalent fractions and all are equal to $\frac{1}{2}$.
estimate	Verb: To arrive at a rough or approximate answer by calculating with suitable approximations for terms or, in measurement, by using previous experience. 2. Noun: A rough or approximate answer.
expression	A mathematical form expressed symbolically. Examples: $7 + 3$; $a^2 + b^2$.
face	One of the flat surfaces of a solid shape. Example: a cube has six faces; each face being a square.
factor	When a number can be expressed as the product of two numbers.
facts	i.e. Multiplication / division/ addition/ subtraction facts. The word 'fact' is related to the four operations and the instant recall of knowledge about the composition of a number. i.e. an addition fact for 20 could be $10+10$; a subtraction fact for 20 could be $20-9=11$. A multiplication fact for 20 could be 4×5 and a division fact for 20 could be $20 \div 5 = 4$.
financial mathematics	Mathematics related to money: to include costing, pricing, handling money, profit, loss, simple interest, compound interest etc.
fluency	To be mathematically fluent one must have a mix of conceptual understanding, procedural fluency and knowledge of facts to enable you to tackle problems appropriate to your stage of development confidently, accurately and efficiently.
foot	Symbol: ft. An imperial measure of length. 1 foot = 12 inches. 3 feet = 1 yard. 1 foot is approximately 30 cm.
formal written methods	Setting out working in columnar form. In multiplication, the formal methods are called short or long multiplication depending on the size of the numbers involved.

four operations	Common shorthand for the four arithmetic operations of addition, subtraction, multiplication and division.
frequency	The number of times an event occurs; or the number of individuals (people, animals etc.) with some specific property.
gallon	Symbol: gal. An imperial measure of volume or capacity, equal to the volume occupied by ten pounds of distilled water. In the imperial system, 1 gallon = 4 quarts = 8 pints. One gallon is just over 4.5 litres.
geometrical	Relating to geometry, the aspect of mathematics concerned with the properties of space and figures or shapes in space.
gradient	A measure of the slope of a line.
gram	Symbol: g. The unit of mass equal to one thousandth of a kilogram.
graph	A diagram showing a relationship between variables.
grid	A lattice created with two sets of parallel lines. Lines in each set are usually equally spaced. If the sets of lines are at right angles and lines in both sets are equally spaced, a square grid is created.
heptagon hexagon	A polygon with seven sides and seven edges. A polygon with six sides and six edges.
horizontal	Parallel to the horizon.
hour	A unit of time. One twenty-fourth of a day. 1 hour = 60 minutes = 3600 (60 x 60) seconds.
hundred square	A 10 by 10 square grid numbered 1 to 100. A similar grid could be numbered as a 0 – 99 grid.
icosahedron	A polyhedron with 20 faces. In a regular Icosahedron all faces are

	equilateral triangles.
imperial unit	A unit of measurement historically used in the United Kingdom and other English speaking countries. Units include inch, foot, yard, mile, acre, ounce, pound, stone, hundredweight, ton, pint, quart and gallon. Now largely replaced by metric units.
inch	Symbol: in. An imperial unit of length. 12 inches = 1 foot. 36 inches = 1 yard. Unit of area is square inch, in ² . Unit of volume is cubic inch, in ³ . 1 inch is approximately 2.54 cm.
inequality	When one number, or quantity, is not equal to another
infinite	Of a number, always bigger than any (finite) number that can be thought of. Of a sequence or set, going on forever. The set of integers is an infinite set.
integer	Any of the positive or negative whole numbers and zero. Example: ...2, -1, 0, +1, +2 ... The integers form an infinite set; there is no greatest or least integer.
interpret	Draw out the key mathematical features of a graph, or a chain of reasoning, or a mathematical model, or the solutions of an equation, etc.
intersect	To have a common point or points. Examples: Two intersecting lines intersect at a point; two intersecting planes intersect in a line.
inverse operations	Operations that, when they are combined, leave the entity on which they operate unchanged. Examples: addition and subtraction are inverse operations e.g. $5 + 6 - 6 = 5$. Multiplication and division are inverse operations e.g. $6 \times 10 \div 10 = 6$.
kilo-	Prefix denoting one thousand

kilogram	Symbol: kg. 1kg. = 1000g.
kilometre	Symbol: km.The base unit of length in the system is the metre. 1km. = 1000m.
length	The extent of a line segment between two points. Length is independent of the orientation of the line segment.
level of accuracy	Often in reference to the number of significant figures with which a numerical quantity is recorded, and made more precise by stating the range of possible error. The degree of precision in the measurement of a quantity.
line	A set of adjacent points that has length but no width. A straight line is completely determined by two of its points, say A and B. The part of the line between any two of its points is a line segment. line graph A graph in which adjacent points are joined by straight-line segments. Such a graph is better seen as giving a quick pictorial visualisation of variation between points rather than an accurate mathematical description of the variation between points.
litre	Symbol: l. A metric unit used for measuring volume or capacity. A litre is equivalent to 1000 cm ³ .
long division	A columnar algorithm for division by more than a single digit.
mass	A characteristic of a body, relating to the amount of matter within it.
mean	Often used synonymously with average. The mean (sometimes referred to as the arithmetic mean) of a set of discrete data is the sum of quantities divided by the number of quantities. Example: The arithmetic mean of 5, 6, 14, 15 and 45 is $(5 + 6 + 14 + 15 + 45) \div 5$ i.e. 17. More correctly called the arithmetic mean, as there are also other means in mathematics. See mode and median.
measure	The size in terms of an agreed unit.

measuring tools	These record numerical quantities of continuous variables, often by comparison with scaled calibrations on the device that is used, or using digital technology. For example, a ruler measures length, a protractor measures angles, a thermometer measures temperature; weighing scales measure mass, a stop watch measures time duration, measuring vessels to measure capacity, and so on.
mental calculation	Referring to calculations that are largely carried out mentally, but may be supported with a few simple written jottings.
metre	Symbol: m.
metric unit	Unit of measurement in the metric system. Metric units include metre, centimetre, millimetre, kilometre, gram, kilogram, litre and millilitre.
mile	An imperial measure of length. 1 mile = 1760 yards. 5 miles is approximately 8 kilometres.
milli-	Prefix. One-thousandth.
millilitre	Symbol: ml. One thousandth of a litre.
millimetre	Symbol: mm. One thousandth of a metre.
minus	A name for the symbol $-$, representing the operation of subtraction.
minute	Unit of time. One-sixtieth of an hour. 1 minute = 60 seconds
missing number problems	A problem of the type $7 = \square - 9$ often used as an introduction to algebra.
mixed fraction	A whole number and a fractional part expressed as a common fraction. Example: $1\frac{1}{3}$ is a mixed fraction. Also known as a mixed

	number.
mixed number	A whole number and a fractional part expressed as a common fraction. Example: $2\frac{1}{4}$ is a mixed number. Also known as a mixed fraction.
multiple	For any integers a and b, a is a multiple of b if a third integer c exists so that $a = bc$ Example: 14, 49 and 70 are all multiples of 7 because $14 = 7 \times 2$, $49 = 7 \times 7$ and $70 = 7 \times 10$.. -21 is also a multiple of 7 since $-21 = 7 \times -3$.
multiplication	Multiplication (often denoted by the symbol "x") is the mathematical operation of scaling one number by another. It is one of the four binary operations in arithmetic (the others being addition, subtraction and division).
multiply	Carry out the process of multiplication.
negative integer	An integer less than 0. Examples: -1, -2, -3 etc.
	A number less than zero. Example: - 0.25. Where a point on a line is labelled 0 negative numbers are all those to the left of the zero on a horizontal numberline. 2. Commonly read aloud as 'minus or negative one, minus or negative two' etc. the use of the word 'negative' often used in preference to 'minus' to distinguish the numbers from operations upon them. 3. See also directed number and positive number.
net	1. A plane figure composed of polygons which by folding and joining can form a polyhedron. A net of a cube 2. Remaining after deductions. Examples: The net profit is the profit after deducting all operating costs. The net weight is the weight after deducting the weight of all packaging.
number bond	A pair of numbers with a particular total e.g. number bonds for ten are all pairs of whole numbers with the total 10.

number line	A line where numbers are represented by points upon it.
number sentence	A mathematical sentence involving numbers. Examples: $3 + 6 = 9$ and $9 > 3$.
number square	A square grid in which cells are numbered in order.
number track	A numbered track along which counters might be moved. The number in a region represents the number of single moves from the start.
numeral	A symbol used to denote a number. The Roman numerals I, V, X, L, C, D and M represent the numbers one, five, ten, fifty, one hundred, five hundred and one thousand. The Arabic numerals 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 are used in the Hindu-Arabic system giving numbers in the form that is widely used today.
numerator	In the notation of common fractions, the number written on the top – the dividend (the part that is divided). In the fraction $\frac{2}{3}$, the numerator is 2.
oblong	Sometimes used to describe a non-square rectangle – i.e. a rectangle where one dimension is greater than the other.
octagon	A polygon with eight sides.
octahedron	A polyhedron with eight faces. A regular octahedron has faces that are equilateral triangles.
odd number	An integer that has a remainder of 1 when divided by 2.
ordinal number	A term that describes a position within an ordered set. Example: first, second, third, fourth ... twentieth etc.
origin	A fixed point from which measurements are taken.
ounce	Symbol: oz. An imperial unit of mass. In the imperial system, 16 ounces = 1 pound. 1 ounce is just over 28 grams.

parallel	Parallel lines, curves and planes never meet however far they are produced or extended.
parallelogram	A quadrilateral whose opposite sides are parallel and consequently equal in length.
partition	To separate a set into subsets. 2. To split a number into component parts. Example: the two-digit number 38 can be partitioned into $30 + 8$ or $19 + 19$. 3. A model of division. Example: $21 \div 7$ is treated as 'how many sevens in 21?'
pattern	A systematic arrangement of numbers, shapes or other elements according to a rule.
pentagon	A polygon with five sides and five interior angles. Adjective: pentagonal, having the form of a pentagon.
perimeter	The length of the boundary of a closed figure.
pictogram	A format for representing statistical information. Suitable pictures, symbols or icons are used to represent objects. For large numbers one symbol may represent a number of objects and a part symbol then represents a rough proportion of the number.
pictorial representations	Pictorial representations enable learners to use pictures and images to represent the structure of a mathematical concept. The pictorial representation may build on the familiarity with concrete objects. E.g. a square to represent a Dienes 'flat' (representation of the number 100).
pie-chart	Also known as pie graph. A form of presentation of statistical information. Within a circle, sectors like 'slices of a pie' represent the quantities involved. The frequency or amount of each quantity is proportional to the angle at the centre of the circle.
pint	An imperial measure of volume applied to liquids or capacity. In the imperial system, $8 \text{ pints} = 4 \text{ quarts} = 1 \text{ gallon}$. 1 pint is just over 0.5 litres.
place holder	In decimal notation, the zero numeral is used as a place holder to

	denote the absence of a particular power of 10. Example: The number 105.07 is a shorthand for $1 \times 10^2 + 0 \times 10^1 + 5 \times 10^0 + 0 \times 10^{-1} + 7 \times 10^{-2}$.
place value	The value of a digit that relates to its position or place in a number. Example: in 1482 the digits represent 1 thousand, 4 hundreds, 8 tens and 2 ones respectively; in 12.34 the digits represent 1 ten, 2 ones, 3 tenths and 4 hundredths respectively.
plot	The process of marking points. Points are usually defined by coordinates and plotted with reference to a given coordinate system.
plus	A name for the symbol +, representing the operation of addition.
polygon	A closed plane figure bounded by straight lines. The name derives from many angles. If all interior angles are less than 180° the polygon is convex. If any interior angle is greater than 180° , the polygon is concave. If the sides are all of equal length and the angles are all of equal size, then the polygon is regular; otherwise it is irregular. Adjective: polygonal.
positive number	A number greater than zero. Where a point on a line is labelled 0 positive numbers are all those to the right of the zero and are read 'positive one, positive two, positive three' etc. See also directed number and negative number.
position	Location as specified by a set of coordinates in a plane or in full 3dimensional space. On the large scale, location on the earth is specified by latitude and longitude coordinates.
prime factor	The factors of a number that are prime. Example: 2 and 3 are the prime factors of 12 ($12 = 2 \times 2 \times 3$).
prime number	A whole number greater than 1 that has exactly two factors, itself and 1. Examples: 2 (factors 2, 1), 3 (factors 3, 1). 51 is not prime (factors 51, 17, 3, 1).

prism	A solid bounded by two congruent polygons that are parallel (the bases) and parallelograms (lateral faces) formed by joining the corresponding vertices of the polygons.
probability	The likelihood of an event happening. Probability is expressed on a scale from 0 to 1. Where an event cannot happen, its probability is 0 and where it is certain its probability is 1. The probability of scoring 1 with a fair dice is $\frac{1}{6}$. The denominator of the fraction expresses the total number of equally likely outcomes. The numerator expresses the number of outcomes that represent a 'successful' occurrence. Where events are mutually exclusive and exhaustive the total of their probabilities is 1.
product	The result of multiplying one number by another. Example: The product of 2 and 3 is 6 since $2 \times 3 = 6$.
proper fraction	A proper fraction has a numerator that is less than its denominator So $\frac{3}{4}$ is a proper fraction, whereas $\frac{4}{3}$ is an improper fraction (i.e. not proper).
property	Any attribute. Example: One property of a square is that all its sides are equal.
protractor	An instrument for measuring angles.
pyramid	A solid with a polygon as the base and one other vertex, the apex, in another plane. Each vertex of the base is joined to the apex by an edge. Other faces are triangles that meet at the apex.
quadrant	One of the four regions into which a plane is divided by the x and y axes in the Cartesian coordinate system.
quadrilateral	A polygon with four sides.
quantity	Something that has a numerical value, for example: 5 bananas.
quarter turn	A rotation through 90° , usually anticlockwise unless stated otherwise.

quotient	The result of a division. Example: $46 \div 3 = 15\frac{1}{3}$ and $15\frac{1}{3}$ is the quotient of 46 by 3. Where the operation of division is applied to the set of integers, and the result expressed in integers, for example $46 \div 3 = 15$ remainder 1 then 15 is the quotient of 46 by 3 and 1 is the remainder.
radius	In relation to a circle, the distance from the centre to any point on the circle. Similarly, in relation to a sphere, the distance from the centre to any point on the sphere.
rate	A measure of how quickly one quantity changes in comparison to another quantity. For example, speed is a measure of how distance travelled changes with time; the average speed of a moving object is the total distance travelled/ time taken to travel that distance. Acceleration is a measure of the rate at which the speed of a moving object changes as time passes. The rate of inflation is a measure of the change in the buying power of money over a given time period.
rectangle	A parallelogram with an interior angle of 90° . Opposite sides are equal. If adjacent sides are also equal the rectangle is a square. If adjacent sides are not equal, the rectangle is sometimes referred to as an oblong. A square is a (special type) of rectangle but a rectangle is not a square. The use of the word 'oblong' (favoured by some) resolves this issue. An oblong is a rectangle which is not square.
recurring decimal	A decimal fraction with an infinitely repeating digit or group of digits. Example: The fraction $\frac{1}{3}$ is the decimal 0.33333 ..., referred to as nought point three recurring and may be written as 0.3 (with a dot over the three). Where a block of numbers is repeated indefinitely, a dot is written over the first and last digit in the block e.g. $\frac{1}{7} = 0.\dot{1}4285\dot{7}$.
reflection	In 2-D, a transformation of the whole plane involving a mirror line or axis of symmetry in the plane, such that the line segment joining a point to its image is perpendicular to the axis and has its midpoint on the axis. A 2-D reflection is specified by its mirror

	line.
reflection symmetry	A 2-D shape has reflection symmetry about a line if an identical looking object in the same position is produced by reflection in that line.
reflex angle	An angle that is greater than 180° but less than 360° .
regular	Describing a polygon, having all sides equal and all internal angles equal. 2. Describing a tessellation, using only one kind of regular polygon. Examples: squares, equilateral triangles and regular hexagons all produce regular tessellations.
relation, relationship	A common property of two or more items. An association between two or more items.
remainder	In the context of division requiring a whole number answer (quotient), the amount remaining after the operation. Example: $29 \div 7 = 4$ remainder 1.
repeated addition	The process of repeatedly adding the same number or amount. One model for multiplication. Example $5 + 5 + 5 + 5 = 5 \times 4$.
repeated subtraction	The process of repeatedly subtracting the same number or amount. One model for division. Example $35 - 5 - 5 - 5 - 5 - 5 - 5 = 0$ so $35 \div 5 = 7$ remainder 0.
representation	The word 'representation' is used in the curriculum to refer to a particular form in which the mathematics is presented, so for example a quadratic function could be expressed algebraically or presented as a graph; a quadratic expression could be shown as two linear factors multiplied together or the multiplication could be expanded out; a probability distribution could be presented in a table or represented as a histogram, and so on. Very often, the use of an alternative representation can shed new light on a problem.
right angle	One quarter of a complete turn. An angle of 90° . An acute

	<p>angle is less than one right angle. An obtuse angle is greater than one right angle but less than two. A reflex angle is greater than two right angles.</p>
Roman numerals	<p>The Romans used the following capital letters to denote cardinal numbers: I for 1; V for 5; X for 10; L for 50; C for 100; D for 500; M for 1000. Multiples of one thousand are indicated by a bar over a letter, so for example V with a bar over it means 5000. Other numbers are constructed by forming the shortest sequence with this total, with the proviso that when a higher denomination follows a lower denomination the latter is subtracted from the former. Examples: III = 3; IV = 4; XVII = 17; XC = 90; CX = 110; CD = 400; MCMLXXII = 1972.</p> <p>A particular feature of the Roman numeral system is its lack of a symbol for zero and, consequently, no place value structure. As such it is very cumbersome to perform calculations in this number system.</p>
	<p>In 2-D, a transformation of the whole plane which turns about a fixed point, the centre of rotation. A is specified by a centre and an (anticlockwise) angle.</p>
rule	<p>Generally a procedure for carrying out a process. In the context of patterns and sequences a rule, expressed in words or algebraically, summarises the pattern or sequence and can be used to generate or extend it.</p>
sample	<p>A subset of a population. In handling data, a sample of observations may be made from which to draw inferences about a larger population.</p>
scale	<p>To enlarge or reduce a number, quantity or measurement by a given amount (called a scale factor). e.g. to have 3 times the number of people in a room than before; to find a quarter of a length of ribbon; to find 75% of a sum of money.</p> <p>Or</p> <p>A measuring device usually consisting of points on a line with equal intervals.</p>

scale drawing or model	An accurate drawing, or model, of a representation of a physical object in which all lengths in the drawing are in the same ratio to corresponding lengths in the actual object (depending on whether the object exists in a plane or in 3 dimensions). Most maps are scaled drawings of some physical region. If the ratio of map distance to location distance is known any distance on the map can be converted to actual distance in the region represented by the map.
scale factor	For two similar geometric figures, the ratio of corresponding edge lengths.
scalene triangle	A triangle with no two sides equal and consequently no two angles equal.
score	To earn points or goals in a competition. The running total of points or goals. 2. The number twenty.
second	A unit of time. One-sixtieth of a minute. 2. Ordinal number as in 'first, second, third, fourth ...'.
sequence	A succession of terms formed according to a rule. There is a definite relation between one term and the next and between each term and its position in the sequence. Example: 1, 4, 9, 16, 25 etc.
set	A well-defined collection of objects (called members or elements).
set square	A drawing instrument for constructing parallel lines, perpendicular lines and certain angles. A set square may have angles 90°, 60°, 30° or 90°, 45°, 45°.
share (equally)	Sections of this page that are currently empty will be filled over the coming weeks. One model for the process of division.
short division	A compact written method of division. Example:

	<p>$496 \div 11$ becomes Answer : $45 \frac{1}{11}$</p>
short multiplication	<p>Simple multiplication by a one digit number, with the working set out in columns. 342×7 becomes Answer: 2394</p>
side	<p>A line segment that forms part of the boundary of a figure. Also edge.</p>
simple fraction	<p>A fraction where the numerator and denominator are both integers. Also known as common fraction or vulgar fraction.</p>
simplify (a fraction)	<p>Reduce a fraction to its simplest form. See cancel (a fraction) and reduce (a fraction).</p>
sort	<p>To classify a set of entities into specified categories.</p>
sphere	<p>A closed surface, in three-dimensional space, consisting of all the points that are a given distance from a fixed point, the centre. A hemisphere is a half-sphere.</p>
square	<p>A quadrilateral with four equal sides and four right angles. 2. The square of a number is the product of the number and itself. Example: the square of 5 is 25. This is written $5^2 = 25$ and read as five squared is equal to twenty-five. See also square number and square root.</p>
square centimetre	<p>Symbol: cm^2. A unit of area, a square measuring 1 cm by 1 cm. $10000 \text{ cm}^2 = 1 \text{ m}^2$</p>
square metre	<p>Symbol: m^2. A unit of area, a square measuring 1m by 1 m.</p>
square number	<p>A number that can be expressed as the product of two equal numbers. Example $36 = 6 \times 6$ and so 36 is a square number or “6 squared”. A square number can be represented by dots in a square array.</p>

standard unit	Uniform units that are agreed throughout a community. Example: the metre is a standard unit of length. Units such as the handspan are not standard as they vary from person to person.
sum	The result of one or more additions.
surface	A set of points defining a space in two or three dimensions.
symbol	A letter, numeral or other mark that represents a number, an operation or another mathematical idea. Example: L (Roman symbol for fifty), > (is greater than).
symmetry	A plane figure has symmetry if it is invariant under a reflection or rotation i.e. if the effect of the reflection or rotation is to produce an identical-looking figure in the same position. See also reflection symmetry, rotation symmetry. Adjective: symmetrical.
table	An orderly arrangement of information, numbers or letters usually in rows and columns. 2. See multiplication table
take away	Subtraction as reduction 2. Remove a number of items from a set.
tally	Make 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 the hotness of a body, measured by a thermometer or other form of heat sensor. Two common scales of temperature are the Fahrenheit scale (°F) and the Celsius (or centigrade scale) which measures in °C. These scales have reference points for the freezing point of water (0°C or 32°F) and the boiling point of water (100°C or 212°F). The relation between °F and °C is $^{\circ}\text{F} = \frac{9}{5}(^{\circ}\text{C}) + 32$.
tetrahedron	A solid with four triangular faces. A regular tetrahedron has faces that are equilateral triangles.
translation	A transformation in which every point of a body moves the same distance in the same direction. A transformation specified by a

	distance and direction (vector).
trapezium	A quadrilateral with exactly one pair of sides parallel.
triangle	A polygon with three sides. Adjective: triangular, having the form of a triangle.
triangular number	A number that can be represented by a triangular array of dots with the number of dots in each row from the base decreasing by one.
unit	A standard used in measuring e.g. the metre is a unit of length; the degree is a unit of turn/angle, etc.
unit fraction	A fraction that has 1 as the numerator and whose denominator is a non-zero integer. Example: $\frac{1}{2}$, $\frac{1}{3}$.
venn diagram	A simple visual diagram to describe used to describe the relationships between two sets. With two or three sets each set is often represented by a circular region. The intersection of two sets is represented by the overlap region between the two sets.
vertex	The point at which two or more lines intersect
vertical	At right angles to the horizontal plane. The up-down direction on a graph or map.
vertically opposite angles	The pair of equal angles between two intersecting straight lines. There are two such pairs of vertically opposite angles.
vulgar fraction	A fraction in which the numerator and denominator are both integers. Also known as common fraction or simple fraction.
weight	In everyday English weight is often confused with mass. In mathematics, and physics, the weight of a body is the force exerted on the body by the gravity of the earth, or any other gravitational body.

yard	Symbol: yd. An imperial measure of length. In relation to other imperial units of length, 1 yard = 3 feet = 36 inches. 1760yd. = 1 mile One yard is approximately 0.9 metres.
zero	Nought or nothing; zero is the only number that is neither positive nor negative. 2. Zero is needed to complete the number system. In our system of numbers : $a - a = 0$ for any number a . $a + (-a) = 0$ for any number a ; $a + 0 = 0 + a = a$ for any number a ; $a - 0 = a$ for any number a ; $a \times 0 = 0 \times a = 0$ for any number a ; division by zero is not defined as it leads to inconsistency. 3. In a place value system, a place-holder. Example: 105. 4. The cardinal number of an empty set.