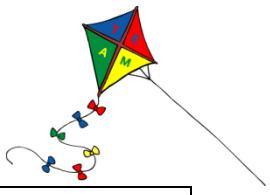
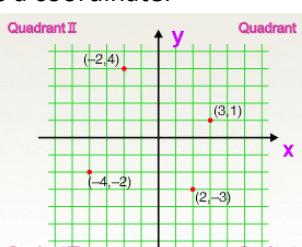
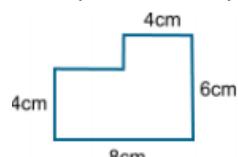


## Glossary of Mathematical terms used in the Primary School

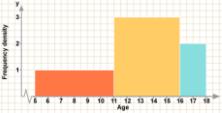


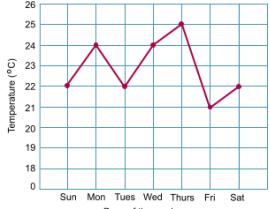
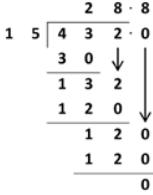
Acute angle	An angle between $0^\circ$ and $90^\circ$ .
Analogue clock	A clock which tells the time using an hour hand to indicate the hour and a minute hand to indicate minutes to and past the hour.
Angle	The space between two intersecting lines, measured in degrees.
Angle at a point	The complete angle all the way around a point is $360^\circ$ .
Area	A measure of the size of any plane surface. Area is usually measured in square units e.g. square centimetres ( $\text{cm}^2$ ), square metres ( $\text{m}^2$ ).
Array	A pictorial representation to help children understand multiplication and division. Typically shown as rows of dots, for example, $2 \times 3$ would be shown as two rows of three dots.
Arrow cards	Used to help children 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 and so on.
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.
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.
Bar model	See <a href="#">representations</a>
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
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.
Cancel (a fraction)	One way to simplify a fraction down to its lowest terms. The numerator and denominator are divided by the same number e.g. $4/8 = 2/4$ . Also to 'reduce' a fraction. Note: when the numerator and denominator are both divided by their highest common factor the fraction is said to have been cancelled down to give the equivalent fraction in its lowest terms. e.g. $18/30 = 3/5$ (dividing numerator and denominator by 6)
Capacity	The term used when measuring how much fluid fits inside a container. Measured in millilitres and litres.
Cardinal numbers	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 way of sorting and presenting information using columns and rows. <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">39</td> <td style="text-align: center;">42</td> <td style="text-align: center;">5</td> <td style="text-align: center;">28</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">Multiple of 3</td> <td style="text-align: center;">Not Multiple of 3</td> <td></td> </tr> <tr> <td style="text-align: center;">Even</td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Odd</td> <td></td> <td></td> <td></td> </tr> </table>	39	42	5	28						Multiple of 3	Not Multiple of 3		Even				Odd			
39	42	5	28																		
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Even																					
Odd																					
Cartesian co-ordinate system	The usual conventions are to label the horizontal axis as the x-axis and the vertical axis as the y-axis with the origin at the intersection of the axes. The ordered pair of numbers ( $x, y$ ) that defines the position of a point is the coordinate pair. The origin is the point (0,0); positive values of $x$ are to the right of the origin and negative values to the left, positive values of $y$ are above the origin and negative values below the origin. Each of the numbers is a coordinate. 																				
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 $2\pi r$ , or $\pi d$ units.																				
Clockwise and anti-clockwise	A way of indicating the direction of a turn. Clockwise involves a turn to the right as if following the hands of a clock, anti-clockwise involves a turn to the left, against the direction of a clock's hands.																				
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.																				
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.																				
Commutativity	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.																				
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: • $56 + 38$ is treated as $56 + 40$ and then 2 is subtracted to compensate. • $27 \times 19$ is treated as $27 \times 20$ and then 27 (i.e. $27 \times 1$ ) 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 materials	Anything which children 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. Materials such as Dienes (Base 10 materials), Cuisenaire, Numicon, pattern blocks are all examples of concrete objects.
Cone	A 3D shape with two faces, one edge and one vertex.
Corner (Also known as a vertex)	The place on a 3D shape where three faces meet.
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
Correspondence problems	Correspondence problems are those in which m objects are connected to n objects (for example, 3 hats and 4 coats, how many different outfits?)
Cube	Cube A 3D shape with six square faces, 12 edges and eight vertices.  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 $27 = 3^3$
Cubic centimetre	Symbol: $\text{cm}^3$ . A unit of volume. The three-dimensional space equivalent to a cube with edge length 1cm.
Cuboid	A 3D shape with six faces, some or all of which are rectangular, 12 edges and eight vertices.
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 3D shape with two circular faces, one rectangular face, two edges and no vertices.
Decimal fraction	Tenths, hundredths, thousandths etc represented by digits following a decimal point. Example 0.125 is equivalent to $1 / 10 + 2 / 100 + 5 / 1000$ or $1 / 8$ The decimal fraction representing $1 / 8$ is a terminating decimal fraction since it has a finite number of decimal places. Other fractions such as $1 / 3$ 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.
Degree	The unit of measurement for angles and also for temperature. Represented by the symbol $^\circ$ for angles (e.g. $90^\circ$ ) or $^\circ\text{C}$ (degrees Centigrade) and $^\circ\text{F}$ (degrees Fahrenheit) for temperature.
Denominator	In a fraction, the number below the line. It shows how many equal parts the whole is made up of.
Diagonal	A line segment joining any two non-adjacent vertices of a polygon.
Diameter	Any of the chords of a circle or sphere that pass through the centre.
Dienes blocks	Wooden or plastic cubes, rods and flats used to support children in learning place value. Each small cube represents one unit, a rod represents 10, a flat represents 100 and a large cube represents 1000.
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 which tells the time using numbers only.
Dividend	In division, the number that is divided. E.g. in $15 \div 3$ , 15 is the dividend
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.
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.
Division	The process of dividing a number up into equal parts, and finding how many equal parts can be made and whether there is a remainder. It is represented by the symbol ‘÷’ or sometimes ‘/’
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	The place on a 3D shape where two faces meet, Examples: a square has four edges; and a cuboid has twelve edges.
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.
Equilateral triangle	An equilateral triangle is a triangle with all 3 sides of equal length.
Equivalent fractions	Fractions with the same value as another. For example: $4/8$ , $5/10$ , $8/16$ are all equivalent fractions and all are equal to $\frac{1}{2}$ .
Evaluate	Find the value of a numerical or an algebraic expression.
Even number	An integer that is divisible by 2.
Exchange	Change a number or expression for another of equal value. The process of exchange is used in some standard compact methods of calculation. Examples: ‘carrying figures’ in addition, multiplication or division; and ‘decomposition’ in subtraction.
Expanded notation	Writing number sentences where the numbers have been partitioned.
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, these are factors of the first. Examples: 1, 2, 3, 4, 6 and 12 are all factors of 12 because $12 = 1 \times 12 = 2 \times 6 = 3 \times 4$ :
Factorise	To express a number or a polynomial as the product of its factors. Examples: Factorising 12: $12 = 1 \times 12 = 2 \times 6 = 3 \times 4$ The factors of 12 are 1, 2, 3, 4, 6 and 12. 12 may be expressed as a product of its prime factors: $12 = 2 \times 2 \times 3$
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. Similarly, in division the formal processes are called short or long division.
Formula	An equation linking sets of physical variables. e.g. $A=\pi r^2$ is the formula for the area of a circle. Plural: formulae.
(the) four operations	Common shorthand for the four arithmetic operations of addition, subtraction, multiplication and division.
Fraction	A fraction is a number which represents part of a whole. It can be represented using a numerator and denominator e.g. $\frac{1}{2}$ , or as a decimal e.g. 0.5.
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.
General statement	A statement that applies correctly to all relevant cases. e.g. the sum of two odd numbers is an even number.
Heptagon	A polygon with seven sides.
Hexagon	A polygon with six sides. Adjective: hexagonal, having the form of a hexagon
Highest common factor (HCF)	The common factor of two or more numbers which has the highest value.
Histogram	In a <b>histogram</b> , it is the <b>area</b> which represents the frequency. 
Horizontal	Parallel to the horizon.
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.
Improper fraction	An improper fraction has a numerator that is greater than its denominator. Example: $\frac{9}{4}$ is improper and could be expressed as the mixed number $2\frac{1}{4}$ .
Inch	Symbol: in. An imperial unit of length. 12 inches = 1 foot. 36 inches = 1 yard. Unit of area is square inch, in <sup>2</sup> . Unit of volume is cubic inch, in <sup>3</sup> . 1 inch is approximately 2.54 cm.
Index notation	The notation in which a product such as $a \times a \times a \times a$ is recorded as $a^4$ . In this example the number 4 is called the index (plural indices) and the number represented by a is called the base.
Inequality	When one number, or quantity, is not equal to another. Statements such as $a \neq b$ , $a < b$ , $a \leq b$ , $a > b$ or $a \geq b$ are inequalities. The inequality signs in use are: $\neq$ means 'not equal to'; $A \neq B$ means 'A is not equal to B' $<$ means 'less than'; $A < B$ means 'A is less than B' $>$ means 'greater than'; $A > B$ means 'A is greater than B' $\leq$ means 'less than or equal to';

	$A \leq B$ means 'A is less than or equal to B' $\geq$ means 'greater than or equal to'; $A \geq B$ means 'A is greater than or equal to B'																
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 ...																
Inverse operations	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. So for the calculation $4 + 3 = 7$ , the following calculations also apply: $3 + 4 = 7$ (commutativity), $7 - 4 = 3$ , $7 - 3 = 4$ . For the calculation $3 \times 2 = 6$ , we can also say $2 \times 3 = 6$ (commutativity), $6 \div 2 = 3$ , $6 \div 3 = 2$ . Squaring and taking the square root are also inverse to each other.																
Investigations	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.																
Isosceles triangle	A triangle in which two sides have the same length and consequently two angles are equal.																
kilogram	1kg. = 1000g.																
kite	A quadrilateral with two pairs of equal, adjacent sides whose diagonals consequently intersect at right angles.																
least common multiple (LCM)	The common multiple of two or more numbers, which has the least value. Example: 3 has multiples 3, 6, 9, 12, 15, 18, 21, 24 ..., 4 has multiples 4, 8, 12, 16, 20, 24. The common multiples of 3 and 4 include 12, 24 and 36. The least common multiple of 3 and 4 is 12.																
line graph	A graph in which adjacent points are joined by straight-line segments.  <table border="1"> <caption>Data for the line graph</caption> <thead> <tr> <th>Day</th> <th>Temperature (°C)</th> </tr> </thead> <tbody> <tr><td>Sun</td><td>21</td></tr> <tr><td>Mon</td><td>24</td></tr> <tr><td>Tues</td><td>22</td></tr> <tr><td>Wed</td><td>25</td></tr> <tr><td>Thurs</td><td>21</td></tr> <tr><td>Fri</td><td>22</td></tr> <tr><td>Sat</td><td>21</td></tr> </tbody> </table>	Day	Temperature (°C)	Sun	21	Mon	24	Tues	22	Wed	25	Thurs	21	Fri	22	Sat	21
Day	Temperature (°C)																
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Tues	22																
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Thurs	21																
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Sat	21																
Litre	A unit for measuring the volume of a liquid.																
Long division	A columnar algorithm for division by more than a single digit, most easily described with an example: $432 \div 15$ becomes  Answer: 28.8																
Long multiplication	A columnar algorithm for performing multiplication by more than a single digit																

	<p><math>124 \times 26</math> becomes</p> $  \begin{array}{r}  & 2 \\  & 1 & 2 & 4 \\  \times & & 2 & 6 \\  \hline  & 7 & 4 & 4 \\  2 & 4 & 8 & 0 \\  \hline  3 & 2 & 2 & 4 \\  \hline  & 1 & 1  \end{array}  $ <p>Answer: 3224</p>
Mass	A characteristic of a body, relating to the amount of matter within it. Mass differs from weight, the force with which a body is attracted towards the earth's centre. Whereas, under certain conditions, a body can become weightless, mass is constant.
Mean	Often used synonymously with average. The 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.
Median	The middle number or value when all values in a set of data are arranged in ascending order. Example: The median of 5, 6, 14, 15 and 45 is 14. When there is an even number of values, the arithmetic mean of the two middle values is calculated. Example: The median of 5, 6, 7, 8, 14 and 45 is $(7 + 8) \div 2$ i.e. 7.5.
Mental calculation	Referring to calculations that are largely carried out mentally, but may be supported with a few simple written jottings.
Metre	The fundamental unit of length in the metric system, equal to 100 centimetres.
Mile	An imperial measure of length. 1 mile = 1760 yards. 5 miles is approximately 8 kilometres.
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
Mirror line	A line which can be drawn onto a shape to show that both sides have exact reflective symmetry.
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: $1\frac{1}{2}$ is a mixed fraction. Also known as a mixed number.
Mixed number	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.
Mode	The most commonly occurring value or class with the largest frequency. e.g. the mode of this set of data: 2, 3, 3, 3, 4, 4, 5, 5, 6, 7, 8 is 3
Multiple	A multiple is a number that can be divided by another number a certain number of times without a remainder. In the number sentence $4 \times 5 = 20$ , 20 is a multiple of 4 and a multiple of 5.
Multiplicand	A number to be multiplied by another. e.g. in $5 \times 3$ , 5 is the multiplicand as it is the number to be multiplied by 3.

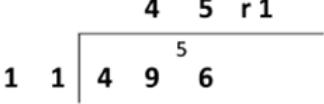
Multiplicative reasoning	Multiplicative thinking is indicated by a capacity to work flexibly with the concepts, strategies and representations of multiplication (and division) as they occur in a wide range of contexts.
Natural number	The counting numbers 1, 2, 3, ... etc. The positive integers. The set of natural numbers is usually denoted by N.
Negative integer	An integer less than 0. Examples: -1, -2, -3 etc.
Negative number	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.
Net	<ol style="list-style-type: none"> <li>1. A plane figure composed of polygons which by folding and joining can form a polyhedron.</li> <li>2. Remaining after deductions. Examples: The net profit is the profit after deducting all operating costs.</li> </ol>
Number bonds	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 sentence	A mathematical sentence consisting of 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.
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.
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, and adjacent sides of different lengths. (Referred to as rectangle in the UK)
Obtuse angle	An angle greater than $90^\circ$ but less than $180^\circ$ .
Octagon	A polygon with eight sides. Adjective: octagonal, having the form of an octagon.
Octahedron	A polyhedron with eight faces. A regular octahedron has faces that are equilateral triangles
Odd number	An integer that is not exactly divisible by 2 and therefore has a remainder of 1 when divided by 2.
Ordering	Putting numbers in the correct order according to size. 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 $=$ ).
Order of operation	This refers to the order in which different mathematical operations are applied in a calculation. The agreed order of operations is that:

	<ul style="list-style-type: none"> <li>Powers or indices take precedent over multiplication or division – <math>2 \times 3^2 = 18</math> not 25;</li> <li>Multiplication or division takes precedent over addition and subtraction – <math>2 + 3 \times 4 = 14</math> not 20</li> <li>If brackets are present, the operation contained therein always takes precedent over all others – <math>(2 + 3) \times 4 = 20</math></li> </ul> <p>This convention is often encapsulated in the mnemonic BODMAS or BIDMAS:</p> <p>Brackets Orders / Indices (powers) Division &amp; Multiplication Addition &amp; Subtraction</p>
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 never meet however far they are produced or extended.
Parallelogram	A quadrilateral whose opposite sides are parallel and consequently equal in length.
Partition	To split a number into the individual values of its digits. Example: the two-digit number 38 can be partitioned into 30 + 8 or to split it into component parts, such as 20 + 18.
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.
Percentage	<ol style="list-style-type: none"> <li>1. A fraction expressed as the number of parts per hundred and recorded using the notation %. Example: One half can be expressed as 50%; the whole can be expressed as 100%</li> <li>2. Percentage can also be interpreted as the operator 'a number of hundredths of' Example: 15% of Y means <math>15/100 \times Y</math></li> </ol>
Perimeter	The length of the boundary of a closed figure.
Perpendicular	A line that is at right angles to another line.
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 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). Pupils may interpret pictorial representations provided to them or create a pictorial representation themselves to help solve a mathematical problem.
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 pints = 4 quarts = 1 gallon. 1 pint is just over 0.5 litres.

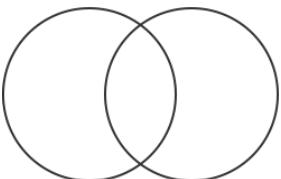
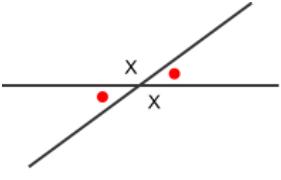
Place holder	In decimal notation, the zero numeral is used as a place holder to denote the absence of a particular power of 10.
Place value	The value of a digit that relates to its position or place in a number. Example: in 1482 the digits represent 1 thousand, 4 hundreds, 8 tens and 2 ones respectively; 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 2D shape with straight, fully closed sides. 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.
Polyhedron	Plural: polyhedra. A closed solid figure bounded by surfaces (faces) that are polygonal. Its faces meet in line segments called its edges. Its edges meet at points called vertices. A regular polyhedron has identical regular polygons forming its faces and equal angles formed by its surfaces and edges.
Positive number	A number greater than zero. Where a point on a line is labelled 0 positive numbers are all those to the left of the zero
Pound (mass)	Symbol: lb. An imperial unit of mass. In the imperial system, 14 lb = 1 stone. 1 lb is approximately 455 grams. 1 kilogram is approximately 2.2 lb.
Power (of ten)	100 (i.e. 10 or $10 \times 10$ ) is the second power of 10, 1000 (i.e. 10 or $10 \times 10 \times 10$ ) is the third power of 10 etc.
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 factor decomposition	The process of expressing a number as the product of factors that are prime numbers. Example: $24 = 2 \times 2 \times 2 \times 3$ or $23 \times 3$ . Every positive integer has a unique set of prime factors.
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 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 the base e.g. triangular prism, quadrangular prism, pentagonal prism etc. Examples:
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.
Proportion	A part to whole comparison. Example: Where £20 is shared between two people in the ratio 2: 3, the first receives £8.00 and the second receives £12.00
Pyramid	Pyramids are named according to the base: a triangular pyramid (which is also called a tetrahedron, having four triangular faces and four vertices. A

	square-based pyramid is a 3D shape with 4 triangular faces, one square face and 5 vertices.
Quadrilateral	A polygon with four sides.
Quarter turn	A rotation through $90^\circ$ , usually anticlockwise unless stated otherwise.
Quotient	The result of a division e.g $15 \div 5 = 3$ 3 is the quotient
Radius	In relation to a circle, the distance from the centre to any point on the circle.
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
Ratio	A part to part comparison. The ratio of a to b is usually written a : b. Example: In a recipe for pastry, butter and flour are mixed in the ratio 1 : 2 which means that the butter used has half the mass of the flour. The amount of butter/amount of flour = $\frac{1}{2}$ . Thus ratios are equivalent to particular fractional parts.
Rectangle	A parallelogram with an interior angle of $90^\circ$ . 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.
Rectilinear	Bounded by straight lines. A closed rectilinear shape is also a polygon. A rectilinear shape can be divided into rectangles and triangles for the purpose of calculating its area.
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).
Reflective symmetry	When a shape or pattern is reflected in a mirror line or line of symmetry. The reflected shape will be an exact mirror image of the original, the same size and the same distance from the mirror line.
Reflex angle	An angle that is greater than $180^\circ$ but less than $360^\circ$ .
Regular	1. Describing a polygon, having all sides equal and all internal angles equal. 2. Describing a tessellation, using only one kind of regular polygon.
Remainder	In the context of division requiring a whole number answer (quotient), the amount remaining after the operation. Example: 29 divided by 7 = 4 remainder
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 An array is a useful representation for multiplication and division which helps to see the inverse relationship between the two. The Bar Model is a useful representation of for many numerical problems. e.g. Tom has 12 sweets and Dini has 5. How many more sweets does Tom have than Dini?

	<table border="1" style="width: 100%; text-align: center;"> <tr> <td colspan="2">12</td> </tr> <tr> <td>5</td><td>?</td></tr> </table>	12		5	?
12					
5	?				
Rhombus	A parallelogram with all sides equal.				
Right angle	One quarter of a complete turn. An angle of 90 degrees. An acute 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.				
Roman numerals	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				
rotation	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.				
Rotational symmetry	A shape has rotational symmetry when it still looks the same after a rotation.				
Rounding	Expressing to a required degree of accuracy. Adjusting digits up or down to the nearest tens, hundreds, thousands etc. Example: 543 rounded to the nearest 10 is 540. Particularly useful when estimating totals.				
Rule	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.				
Sample	A subset of a population. In handling data, a sample of observations may be made from which to draw inferences about a larger population.				
Scale (noun)	A measuring device usually consisting of points on a line with equal intervals.				
Scale (verb)	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.				
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).				
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.				
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.				
Short division	A compact written method of division. Example:				

	$496 \div 11$ 								
Short multiplication	<p>Essentially, simple multiplication by a one digit number, with the working set out in columns</p> <p><math>342 \times 7</math> becomes</p> $  \begin{array}{r}  342 \\  \times 7 \\  \hline  2394  \end{array}  $								
Simple fraction	A fraction where the numerator and denominator are both integers. Also known as common fraction or vulgar fraction.								
Simplify (a fraction)	Reduce a fraction to its simplest form. See cancel (a fraction) and reduce (a fraction)								
Square	<ol style="list-style-type: none"> <li>1. A quadrilateral with four equal sides and four right angles.</li> <li>2. The square of a number is the product of the number and itself.</li> </ol> <p>Example: the square of 5 is 25. This is written <math>5 = 25</math> and read as five squared is equal to twenty-five. See also square number and square root.</p>								
Square centimetre	Symbol: $\text{cm}^2$ . A unit of area, a square measuring 1 cm by 1 cm. $10000 \text{ cm}^2 = 1 \text{ m}^2$								
Square metre	Symbol: $\text{m}^2$ . A unit of area, a square measuring 1m by 1 m.								
Square millimetre	Symbol: $\text{mm}^2$ . A unit of area, a square measuring 1 mm by 1 mm. One-hundredth part of a square centimetre								
Square number	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.								
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 children, 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.								
Subtraction by decomposition	<p>A method of calculation used in subtraction and particularly linked with one of the main columnar methods for subtraction. In this method the number to be subtracted from (the minuend) is re-partitioned, if necessary, in order that each digit of the number to be subtracted (the subtrahend) is smaller than its corresponding digit in the minuend.</p> <p>e.g. in <math>739 - 297</math>, only the digits in the hundreds and the ones columns are bigger in the minuend than the subtrahend.</p> <p>By re-partitioning 739 into 6 hundreds, 13 tens and 9 ones each separate subtraction can be performed simply, i.e.:</p> <table style="margin-left: 100px;"> <tr> <td><math>9 - 7</math></td> <td><math>6\ 7\ 1\ 9</math></td> </tr> <tr> <td>13 (tens) - 9 (tens)</td> <td><math>- 2\ 9\ 7</math></td> </tr> <tr> <td>and</td> <td><hr/></td> </tr> <tr> <td>6 (hundreds) - 2 (hundreds).</td> <td><math>4\ 2\ 2</math></td> </tr> </table>	$9 - 7$	$6\ 7\ 1\ 9$	13 (tens) - 9 (tens)	$- 2\ 9\ 7$	and	<hr/>	6 (hundreds) - 2 (hundreds).	$4\ 2\ 2$
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and	<hr/>								
6 (hundreds) - 2 (hundreds).	$4\ 2\ 2$								

Subtrahend	A number to be subtracted from another.															
Sum	The result of one or more additions.															
Tally	<p>Make marks to represent objects counted; usually by drawing vertical lines and crossing the fifth count with a horizontal or diagonal strike through.</p> <p>A Tally chart is a table representing a count using a tally.</p> <table border="1"> <thead> <tr> <th colspan="3">Favourite Pets</th> </tr> <tr> <th>Pet</th> <th>Tally Marks</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Cat</td> <td>## ##</td> <td>10</td> </tr> <tr> <td>Dog</td> <td>    </td> <td>4</td> </tr> <tr> <td>Rabbit</td> <td>## I</td> <td>6</td> </tr> </tbody> </table>	Favourite Pets			Pet	Tally Marks	Number	Cat	## ##	10	Dog		4	Rabbit	## I	6
Favourite Pets																
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Cat	## ##	10														
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Temperature	<p>A measure of the hotness of a body, measured by a thermometer or other form of heat sensor.</p> <p>Two common scales of temperature are the Fahrenheit scale (<math>^{\circ}\text{F}</math>) and the Celsius (or centigrade scale) which measures in <math>^{\circ}\text{C}</math>. These scales have reference points for the freezing point of water (<math>0^{\circ}\text{C}</math> or <math>32^{\circ}\text{F}</math>) and the boiling point of water (<math>100^{\circ}\text{C}</math> or <math>212^{\circ}\text{F}</math>).</p>															
Terminating decimal	A decimal fraction that has a finite number of digits. Example: 0.125 is a terminating decimal. In contrast $\frac{1}{3}$ is a recurring decimal fraction.															
Tetrahedron	A solid with four triangular faces. A regular tetrahedron has faces that are equilateral triangles. Plural: tetrahedra															
Total	<p>The aggregate. Example: the total population - all in the population.</p> <p>2. The sum found by adding.</p>															
Translation	A transformation in which every point of a body moves the same distance in the same direction.															
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	<p>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</p> <p>The triangular number 10 represented as a triangular array of dots.</p> 															
Turn	A rotation about a point: a quarter turn is a rotation of $90^{\circ}$ . A half turn is a rotation of $180^{\circ}$ , a whole turn is a rotation of $360^{\circ}$ .															
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: $\frac{1}{2}$ , $\frac{1}{3}$ A non-unit fraction
Venn diagram	A simple visual diagram 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/ vertices (also known as corners)	The place on a 3D shape where three faces meet.
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.
Vertically opposite angles	The pair of equal angles between two intersecting straight lines. There are two such pairs of vertically opposite angles 
volume	A measure of three-dimensional space. Usually measured in cubic units; for example, cubic centimetres ( $\text{cm}^3$ ) and cubic metres ( $\text{m}^3$ ).
Whole number	A number which contains no fractions or parts of a whole such as decimal numbers.
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	1) Nought or nothing; zero is the only number that is neither positive nor negative. 2) In a place value system, a place-holder. Example: 105.
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 – height, width and length (depth)