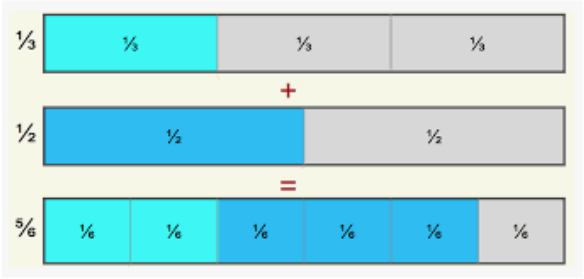
Visual models used in every year group

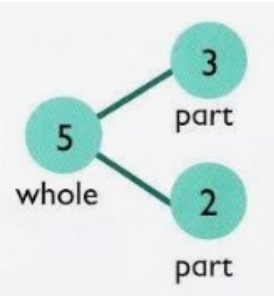
Bar Model

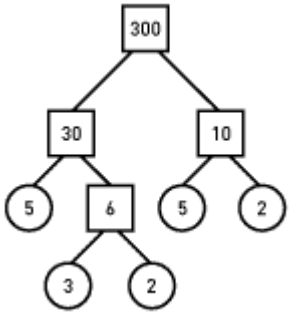
Bar models are pictorial representations of problems or concepts that can be used for any of the operations: addition, subtraction, multiplication and division. In word problems, bar models hold the huge benefit of helping children decide which operations to use or visualise problems.



Part/Whole or 'cherry' model

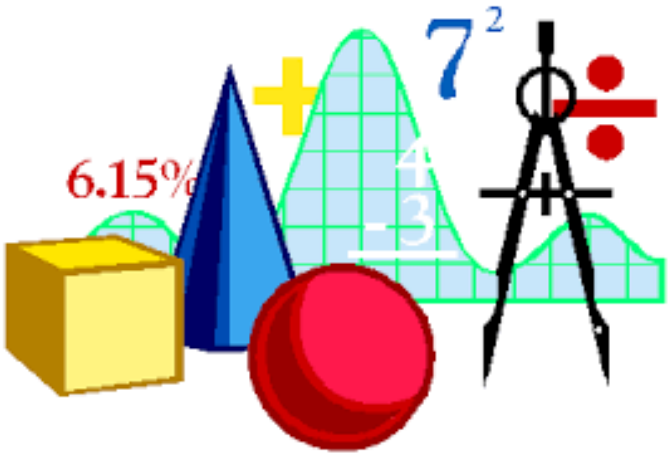
Part/whole refers to how numbers can be split into parts. It allows children to see the relationship between a number and its compo-nent parts.. Part/whole or 'cherry' models can be used to show numbers partitioned in different ways.





St Mary's Catholic Primary School

Maths Vocabulary



The aim of this booklet is to help everyone to understand and use the technical maths vocabulary accurately and confidently so we can help children to do the same. These words are used in school and are part of the National Curriculum.

The booklet is organised into year groups from Year 1 and includes the most common words that will be taught in school. There are many other 'maths' words and language that children will be exposed to every day. All successive year groups need to know the vocabulary from the previous year groups.

If you need any further clarification then please see class teachers, Miss Blackhall or refer to this useful website:

http://www.mathsisfun.com/definitions

Year 6 (continued)

Average means finding either the mode, median or mean of a set of data

Mean means the average of a numerical set of data. It is calculated by adding up all of the amounts within the set of data and dividing your total by the amount of numbers added. For example: 2, 4, 5, 6, 6, 2, 3, 2, 5, 6 Mean = (2 + 2 + 2 + 3 + 4 + 5 + 5 + 6 + 6 + 6) ÷ 10 = 41 ÷ 10 = 4.1

Median means the middle number when a set of data is put in either ascending or descending order. With an odd set of data it is simply the middle number, in an even set of data, add the 2 middle numbers and divide by 2. For example: 3, 4, 1, 5, 7, 3, 4, 9, 2, 11, 1, 2, 3, 3, 4, 4, 5, 7, 9 leaves 3 and 4 in the middle. (3 + 4) ÷ 2 = 3.5

Numerator means the number on the top of a fraction

Denominator means the number on the bottom of a fraction

Ratio means the relative sizes of 2 or more values. For example in a class there are 6 boys and 4 girls so there is a ratio 6:4 (boys:girls) or simplified this is 3:2.

Year 6

Equation a maths statement where 2 sides are equal e.g. 2 + 2 = 4

Formula means a statement, usually an equation that states a rule, fact or principle e.g. Length x width = area

Prime Number means a number with only 2 factors, 1 and itself e.g. 23 has only 1 and

Prime Factor means a factor of a number that is also prime. For example, the following numbers are all factors of 36 – 1, 2, 3, 4, 6, 9, 8, 16, 32. The prime factors are 2 and 3.

Circumference means the distance around the outside of a circle .

Diameter means the distance across the middle of the circle .

Radius means the distance from the edge of the circle to the centre.

Range means the difference between the highest and lowest numbers in a set of data e.g. Data showing shoe sizes: 3, 6, 4, 7, 2, 5, 4, 3, 6, 4 There is a range of 5 shoe sizes from 2-7.

Year 1

Number sentence means a story made out of numbers or an equation e.g. 4 + 6 = 10 or 17 – 3 = 14

Operation means add, subtract, multiply or divide. These are the 4 operations in maths.

Digit means a numerical symbol (1 2 3 4 5 6 7 8 9 0) A number is made up of digits. A digit is not a number. They are different.

Sum means add and only add! 4 x 6 is not a sum it is a calculation!

Total means add.

Altogether means add.

Subtract means 'take away'.

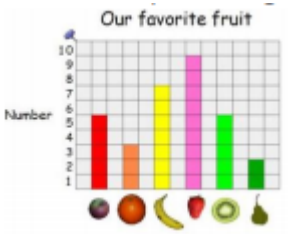
Difference means take away (subtraction).

Fraction means part of a whole .

Year 1 (continued)

Pictogram means a graph where picture represent the data. For example if recording eye colour you could draw coloured eyes to pile up to make a graph. You can also extend the task by one car on the graph representing 2 cars in real life, so half a car on the graph would equal one real car.

Block graph means a simple bar graph made from blocks .



Capacity means the maximum amount that can be contained in something .

Year 5 (continued)

Reflective symmetry means a type of symmetry where on half is the reflection of the other half. The image could be folded down the middle and the 2 sides would match perfectly.

Line of symmetry means the line you would fold down so that the 2 sides would match exactly.

Translation means moving a shape without rotating, resizing or flipping it. The shape should look exactly the shape just in a different position on a grid. (Sliding)

Probability is a measure of how likely something is. It is measured on a scale from 0 – 1. 0 means impossible, 1 means certain and 0.5 means a 50-50 chance.

Mode means the most commonly or frequently occurring number within a set. For example: 2, 5, 7, 3, 4, 2, 6, 3, 3, 4, 2, 6, 2. The mode of this set of data is 2 as it occurs the most.

Year 5 (continued)

Percentage means out of 100. So 25% means 25 out of 100.

Equivalent means the same size as e.g. 2 x 6 is equivalent to 13-1. 2/4 is equivalent to ½

Parallel means two sides that will not get any closer together or any further apart. E.g. a square has 2 sets of parallel sides.

Perpendicular means 2 lines that will cross at right angles .

Angle means a measurement of a turn .

Acute means an angle less than 90 degrees .

Obtuse means an angle greater than 90 but less than 180 degrees .

Origin means the point mark (0,0) on a graph or co-ordinates grid.

Year 2

Operation means add, subtract, multiply or divide. These are the 4 main operations in maths. +, -, x or ÷

Multiple means a number in a particular times table e.g. 50 is a multiple of 10 as it is in your 10 x table.

Calculate means work it out .

Inverse means the opposite. For example + is the opposite operation to –

Remainder means the number that is left over if a number does not divide exactly by another .

Partition means split the number into the values of each digit e.g 120 is 100 and 20 Tens boundary means a multiple of 10 for example 12 + 9 crosses a tens boundary as the answer is greater than 20 which is the next multiple of 10 from 12.

Tally means count using a bar and gate .

Year 3

Digit means a numerical symbol (1 2 3 4 5 6 7 8 9 0) A number is made up of digits. A digit is not a number. They are different.

Inverse means the opposite e.g. addition is the inverse of subtraction.

Estimate means make a sensible guess e.g. 16 x 9. Estimate it will be slightly less than 16 x 10 which is 160 .

Approximate means a logical answer that is not accurate e.g. 1.2 x 4.9 will be approximately 5 as 1 x 5 = 5

Product means multiply for example the product of 6 and 2 is 12

Unit fraction means a fraction where the numerator (top number) is 1 e.g. ½ or ¼ .

Quadrilateral means a 4 sided shape .

Ascend means go up Descend means go down.

Year 4 (continued)

Perimeter means the distance around the outside of a 2D shape.

Area means the space within the perimeter of a 2D shape. The formula for the area of a rectangle is length x width.

Year 5

Consecutive means next door numbers without gaps e.g. 14, 15 and 16 are consecutive.

Ascending means ordering a set of numbers from smallest to biggest.

Descending means ordering a set of numbers from biggest to smallest.

Integer means a whole number.

Equation a maths statement where 2 sides are equal e.g. 2 + 2 = 4

Square Number means the answer to a number times itself e.g. 64 is square as it is the answer to 8 x 8

Year 4 (continued)

Quotient means the number obtained as the result of a division calculation. For example the quotient of 45 and 3 is 15 .

Factor means a whole number (integer) that will divide exactly into another number without any remainders e.g. 5 is a factor or 10 .

Divisor means the quantity by which another quantity is divided e.g. in 17 ÷ 4, the 4 is the divisor .

Regular means the sides and angles of a shape are all equal .

Irregular means the sides and angles of a shape are not all equal .

Concave means a shapes that curves inwards e.g. the inside of a sphere .

Convex means a shape that curves outwards e.g. the outside of a sphere .

Polygon means a 2D shape with 3 or more sides.

Year 3 (continued)

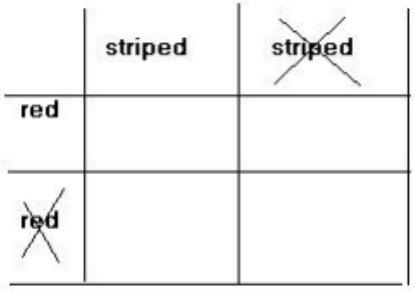
Capacity means the amount something can hold, usually measured in ml or l

Vertex means a point where 2 sides or 2 edges meet (used for 2D and 3D shapes) Plural: vertices.

Frequency table shows the number of times that certain things e.g. marks, occur within a set of data .

Mark	Tally	Frequency
4	II	2
5	II	2
6	IIII	4
7	𝍸	5
8	IIII	4
9	II	2
10	I	1

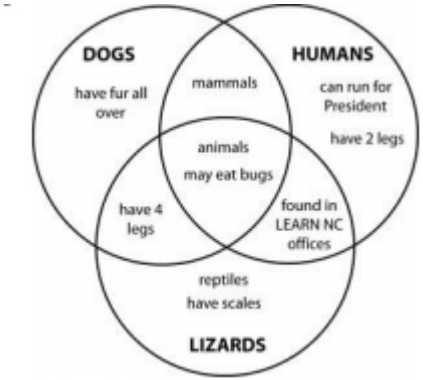
Carroll Diagrams sort data using a yes/no system



Carroll diagram

Year 3 (continued)

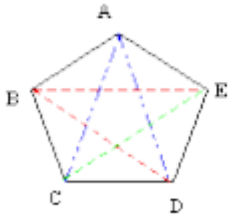
Venn Diagrams sort data using relationships between the set of data being sorted.



Interval means the marks on a scale are of a known and consistent value. For example a scale may be marked in intervals of 1 year or 5cm etc

Fraction means part of a whole. If a whole is split into sixths then the whole will now consist of 6 equally sized pieces.

Diagonal means a straight line that joins to non-adjacent vertices (corners) within a shape



Year 4

Calculation means using an operation to work out an answer.

Product means multiply.

Numerator means the number on the top of a fraction.

Denominator means the number on the bottom of a fraction.

Mixed Number or Mixed Fraction means a whole number and a fraction combined e.g. 2½

Decimal point means the point or dot used to separate the whole number part of a decimal number from the fractional part. Note: the decimal point never moves!

Tenths means the value of the digit in the column directly after the decimal point for example the number 6.78 contains 7 tenths.

Hundredths means the value of the digit in the 2nd column after the decimal point for example the number 6.78 contains 8 hundredths.