Maths language jargon buster

For extra definitions of maths vocabulary, such as the names of 2D and 3D shapes, you might find a [primary maths dictionary](#) handy.

array
Shapes or objects arranged in a rectangle are called an array. Egg boxes or muffin trays are good examples of arrays. Teachers use these to help children to 'see' multiplication. For example, 4 rows of muffins in a tray times 3, equals 12 muffins.

averages:
When we talk about averages in everyday life, we are usually referring to the **mean average**. This is the sum of the numbers in a set of data, divided by the number of members of that set. So if we wanted to know the average age of a group of children, we would add up all their ages and divide by the number of children.
There are two other types of average that children may come across in maths.
They are:
median average: The number in the middle if you place the numbers in a set in order of size.
mode average: The most common number in a set (if any of the numbers occur more than once).

chunking
Chunking is sometimes used to calculate division. Using multiples of the number that the total has to be divided by breaks down the calculation into sizeable 'chunks' that are subtracted from the total. For example, in 12 ÷ 3 = 4, you 'chunk' into 3s to find the answer, 4.

data handling
This means using of simple lists, tables and graphs to present information.

factor families
Factor families are made up of numbers that are related in multiplication and division. For example, the numbers 5, 8 and 40. You can multiply two of the numbers together to get the third number: 8 x 5 = 40. You can switch the order of the two numbers multiplied above to equal the third number again. In maths, this is known as the **commutative property** of multiplication: 5 × 8 = 40, 8 x 5 = 40. Similarly you can divide one number by the other and equal the third number: 40 ÷ 8 = 5.

formal written methods
Formal written methods are the standard procedures used for calculations that cannot easily be solved mentally. These include: column addition, column subtraction, short multiplication, long multiplication, short division and long division.

grid method
Schools sometimes use the grid method to teach multiplication. For example, to work out 35 × 8 using the grid method, you set the numbers out in a grid:

×	30	5
8		

You then multiply the numbers and add them together to find the total:

×	30	5
8	240	40

```
  240
+  40
-----
  280
```

inverse operations

We say that addition and subtraction are inverse operations; this means that we can use one operation to undo the other, e.g. you can undo adding 5 by taking away 5. Multiplication and division are also inverse operations. If you multiply a number by 10, you can undo this by dividing by 10.

Children are taught to use inverse operations to check their answers to a question. If they work out that 15 + 35 = 50, they might check this by subtracting 35 from 50 to see if they get 15.

number square

A number square is a visual image used in almost all classrooms to help children grasp the concept of number and place value.(They can start with 0 or with 1)

0	1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18	19
20	21	22	23	24	25	26	27	28	29
30	31	32	33	34	35	36	37	38	39
40	41	42	43	44	45	46	47	48	49
50	51	52	53	54	55	56	57	58	59
60	61	62	63	64	65	66	67	68	69
70	71	72	73	74	75	76	77	78	79
80	81	82	83	84	85	86	87	88	89
90	91	92	93	94	95	96	97	98	99

number bonds

Number bonds are pairs which make up a total. The number bonds for seven, for example, are 3 + 4, 2 + 5, 1 + 6 and 0 + 7. Children will practise remembering these at schools. Help them practise at home.

number line

A number line is a visual image used in almost all classrooms to help children grasp the basic number relationships. Children will use a number line to count forwards and backwards, in, for example, 1s, 2s and 10s depending on the scale of the number line.

```
0   1   2   3   4   5   6   7   8   9   10
|___|___|___|___|___|___|___|___|___|___|
```
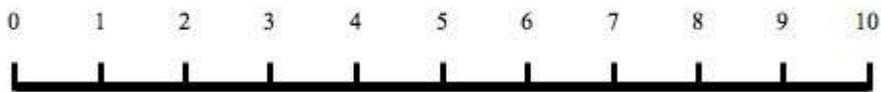
measurements:
units of measure

A unit of measure is an agreed quantity by which we measure things. So, metres, centimetres, litres, millilitres, grams and kilograms are all units of measure.

metric measurement systems are systems for measuring things in which the units of measure go up in 10s or multiples of 10 (100, 1000 etc). For example kilometres, metres, centimetres and millimetres are the metric system for measuring length and distance: There are 10 millimetres in a centimetre, 100 centimetres in a metre and 1000 metres in a kilometre. We now use metric systems for most of our measuring.

imperial measurement systems are systems for measuring things that were developed in England in the 19th century. Examples are pounds and ounces for weighing and inches; yards and miles for measuring length and distance. We do not use them very much now, except miles for measuring distance and pints for volume.

converting between units of measure means changing a measurement from one unit (e.g. metres) to another unit (e.g. centimetres). So, the measurement 2 metres can be converted to 200 centimetres.

Length and distance are measured in kilometres, metres, centimetres and millimetres. There are:
10 millimetres in a centimetre.
100 centimetres in a metre.
1000 metres in a kilometre.

Mass is measured in grams and kilograms. There are:
1000 grams in a kilogram.

Volume is sometimes measured in litres and millilitres. There are:
1000 millilitres in a litre.

converting between imperial and metric systems of measure
It can be useful to be able to convert between some common Imperial systems of measurement and the comparable metric system, e.g. between miles and kilometres.
To do this, you need to know the relationship between them. Here are some common examples:
There are about 1.6 kilometres in a mile.
There are about 0.6 miles in a kilometre.

There are about 2 pints in a litre.
There are about 0.5 litres in a pint.

mental maths
Mental maths is essentially the ability to calculate mentally, i.e. in your head without writing anything down. Learning things such as number bonds, number patterns, doubles and multiplication tables facts are important mental maths skills.

missing number problems
A missing number problem is a calculation where one of the numbers has been taken out. The missing number could be represented by a space, question mark or shape, e.g.
$4 + \underline{\quad} = 9$
Children have to use related number facts to work out the answer, for instance they may know that $9 - 4 = 5$, and therefore deduce that $4 + 5 = 9$. This type of question helps to prepare children for algebra, where unknown numbers are represented by letters.

one-to-one correspondence
This means being able to match one object to one other object or person. Children need to learn this in order to be able to count. This can be practised in a number of different play situations, such as laying the table, or setting out a tea party. For example, each person at the table needs 'one' cup.

partitioning
Partitioning a number means to expand the number. For example, 58 is partitioned into 50 and 8. It is often used to break down numbers when multiplying or dividing larger numbers to make the calculation easier. For example, 58×2 can be broken down into $50 \times 2 = 100$ and $8 \times 2 = 16$, giving an answer of 116.

place value
The value of a digit depends on its place within a number. This is its place value and it is the basis of our entire number system. For example, in 378 there are 8 units (or ones), 7 tens and 3 hundreds.

range
The range is the difference between the highest and lowest numbers in any given group of numbers, e.g. the age range of a group of children is the difference between the age of the oldest child and the age of the youngest child.

ratio
Ratios are a way of comparing the amounts of different things, e.g. if a recipe asks for flour and sugar in a ratio of 2:1, it means that you need 2 lots of flour for every 1 lot of sugar that you put in.

Each thing in a ratio needs to be measured in the same kind of unit. So, if a recipe asks for flour and sugar in a ratio of 2:1 and you put in 2 **cups** of flour, you need to put in 1 **cup** of sugar. If you put in 2 **kilograms** of flour, you need to put in 1 **kilogram** sugar and if you put in 2 **bathtubs** of flour, then you need to put in 1 **bathtub** of sugar!

You may also see ratios on map scales. In this case it tells you the relationship between the distance on the map and the distance in real life, e.g. 1:10,000 would mean that 1cm on the map represents an actual distance of 10,000cm.

sequence
A sequence is a set of things (usually numbers) that are in an order. Each number in the sequence is called a term. To find missing terms in a sequence, first you need to find the rule behind the sequence. For example, in the sequence '2 4 6 8' the rule is to add two to the previous number. The next number in the sequence would be '10'.

shape, space and measure
This term is used in curriculum documents and refers to work done with shapes, spatial awareness, (e.g. volume and area) and measurements (e.g. centimetres, metres, litres).

two-step problems
A word problem that requires two 'steps' in order to be solved is a two-step problem. For example, I have £6.50 to spend. If I buy two magazines priced at £1.95 each, how much money will I have left over? This requires two steps because we need to first add £1.95 and £1.95 to each other, and then take away this total from £6.50. (See word problems)

using and applying mathematics
We use maths in everyday life, drawing upon our maths knowledge and applying it, for example to calculate how much wallpaper we need to buy when redecorating. This is known as 'using and applying' our maths skills in everyday life.

word problems
A word problem is a problem written in everyday language that requires maths to find the answer. Children will work with word problems frequently. For example, oranges cost 69p a kilo. I pay for a kilo of oranges with a £1 coin. How much change will I get?

Things to watch out for !
- When multiplying by 10 you do not just 'add zero' - you 'move the digits to the left and add a zero as a place holder'
- The decimal point cannot move - You can only move the digits to the left or to the right

Fun ways to teach your child maths at home

Let children sort the washing… Matching and counting pairs of socks is a great way of practising odd and even numbers, counting in twos and the 2 times table – it also means one less job for you!

Look at the pattern of house numbers as you walk along – are they odd or even numbers? What house number will be next?

Children can count anything! Pennies, buttons, pasta, trees, cars, building bricks, sweets, apples – encourage them to count things wherever they are. Give them mini-tasks at the supermarket e.g. putting 6 carrots in a bag; 3 tins of beans, etc – be creative!

Money can be very motivating! The real stuff is the best - give your children a jar of coins to sort by their different values. Find the biggest coin. Is it worth the most? Find the smallest coin. Is it worth the least? Put them in order of value. Use 2p, 5p and 10p coins to support learning the times tables.

Create a shop! Allow children to make price tags for different items around the home and use real money to play at being the shop keeper! I'd like a teddy for 12p and a tin of beans for 10p – how much will that cost? If I give you 50p, how much change will I get?

Go shopping with your child to buy two or three items. Ask them to work out the total amount spent and how much change you will get.
Buy some items with a percentage extra free. Help your child to calculate how much of the product is free

Supercalifrajalisticexpealidoutius

How many letters has this word got?

If the vowels cost 5p and the consonants cost 10p, how much would the word be worth? In the same way, how much is your child's name worth? How many words can you write for one pound?

Use a set of playing cards (without the picture cards). Turn over two cards and ask your child to add or multiply the numbers. If they answer correctly, they keep the cards. How many cards can they collect in two minutes?

Use a TV guide. Ask your child to work out the length of their favourite programmes. Can they calculate how long they spend watching TV each day / each week?

Buy your child a pocket diary or calendar and help them plan out a daily timetable for their week. Write in the times of activities on the days of the week. How many days/weeks until your birthday/Christmas/holiday?

Let your child borrow your watch. Can you tell me when it is 2 o'clock? Can you tell me how long it takes for us to walk from our house to Grandma's? You can play on the computer for 30 minutes. Can you tell me when the 30 minutes are up? Play games like 'What's the Time Mr Wolf'?

What can your child do in exactly one minute? Hop on one leg? Tidy their toys away? Clear the table? Stare without blinking? See if they can count the seconds in their head.

Play 'I'm thinking of a Number'. Begin by giving clues such as "My number is more than 50 but less than 100; it is an odd number; it is two more than 37", etc

As your child becomes more confident, they can try to find out by asking questions eg. Is it odd or even? A multiple of 5? More or less than 30? This can be done anywhere - driving in the car, walking to school…

Look at the three digits on a car's number plate (928). What's the largest/ smallest number you can make? (982/ 289) What is the total if you add the numbers together?

Count up in tens – 928, 938, 948…

Do some cooking! Let your child help you weigh the ingredients they need in grams and kilograms. Practise doubling/halving by baking – for example "If we wanted to make Granddad and Grandma a cake too, what are the total ingredients we would need?" or "If I only want to make 10 buns rather than 20, what ingredients would I need?"

Peel an orange. Divide it into segments. Count how many there are. Eat one piece. How many do you have left? Eat half of the segments. How many pieces did you eat?

Look for shapes all around you and encourage your child to name and describe them. Can you find any objects that are squares? Cubes? How many circles can you see in the room?

Hunt for right angles around your home. Can your child spot angles that are bigger or smaller than a right angle?

Maths Vocabulary

Children need to learn a range of words for calculating, here are some question ideas for you to help your child. Explore the different questions with your child changing the numbers. Practise using the maths vocabulary in lots of different ways.

> **+**
> add, addition, more, plus, increase, sum, total, altogether, score,
> double, near double, how many to make….? inverse*, how much more is..?

What is the sum of 163 and 311?
What is the total of 1.6 plus 3.5?
Can you increase 313 by 230?
What is double 18?

> **-**
> subtract, subtraction, take away, minus, decrease, difference
> between, inverse*, how many fewer is … than …? how many are left over? less than

Subtract 89 from 151
Mentally take away 13.5 from
What is 544 minus 264?
What is the difference between -5 and 3?

> **x**
> lots of, groups of, times, multiply, multiplied by, multiple of, product,
> repeated addition, double, inverse*, square numbers

What is the product of 7 and 6?
Name a multiple of 9
Double 548
What is 8^2 (8 squared)

> **÷**
> share, group, divide, division, divided by, divide into, remainder,
> halve, inverse*, equal groups of.., share equally, divisible by, factor, fraction

Share 56 by 8
What is the remainder of 29 divide
What fraction of 48 is 12?
What are all the factor pairs of 48?

*Inverse: doing the opposite calculation to check your answer (e.g. 4 + 3 = 7 the inverse 7-3=4)
(12 ÷ 4 = 3 the inverse 3x4 = 12).

Websites with fun ways to practice!

Sumdog - http://www.sumdog.com/ (Username& password from class teachers)

Education city - https://ec1.educationcity.com/ (Username& password from class teachers)

Primary Games - http://www.primarygames.co.uk/ (Evaluation site but games can still be played)

Ambleside fractions - http://www.amblesideprimary.com/ambleweb/mentalmaths/fractotron.html

Teaching Tables - http://www.teachingtables.co.uk/

ICT maths games for Y1,2,3 - http://www.ictgames.com/

Teaching money - http://www.teachingmoney.co.uk/ (Evaluation site but games can still be played)

Moon maths times tables - http://www.primaryresources.co.uk/online/moonmaths.swf

Woodlands interactive maths games - http://resources.woodlands-junior.kent.sch.uk/maths/index.html

Crick Primary games (KS2) - http://www.crickweb.co.uk/ks2numeracy.html

Crick Primary games (KS1) - http://www.crickweb.co.uk/ks1numeracy.html

Maths zone - http://www.mathszone.co.uk/