



Year 6 Maths  
with Miss Maths

# Daily maths with Miss Maths



- ▶ Today we're returning to algebra.
- ▶ This is building on previous learning.
- ▶ My group can join me at 11am or work through this power point at home.
- ▶ **My little tips on algebra are to help you understand what's going on and not just teach you quick methods!**
- ▶ A useful video to watch:

<https://www.bbc.co.uk/bitesize/topics/z69k7ty/articles/z24ctv4>

# Algebra basics

Algebra is like a missing box question

In Algebra we use letters instead of numbers to replace any numbers that we don't know yet.

For example:

$$\text{something} + 4 = 10$$

$$\text{we say } x + 4 = 10$$

$$\text{we know that } 6 + 4 = 10$$

$$\text{so } x = 6$$



The number that we don't know is sometimes called the UNKNOWN or VARIABLE.

Algebra is just like a puzzle where you have to find out the value of the missing numbers!

# Previous learning ...

- ▶ Remember this picture?



$$m + 7 = 19$$

What do the balancing scales have to do with this equation?



In  $m + 7 = 19$  the  $=$  symbol means 'is the same as' or 'is equal to' that means  $m+7$  is equal to 19.

We could imagine the scales with marbles on each tray. There are 19 marbles on both sides because the scales are balanced.



If we remove 7 from the left side we should remove 7 from the right side that will leave  $m$  on the left side and its value on the right side.

$$m + \cancel{7} = 19 - 7$$

$$m = 12$$



By getting rid of that 7 I will be left with 'm'.  
If I take away 7 from the left side I have to take 7 from the right side otherwise the scales will not balance!  
Back in class we called this THE REMOVAL METHOD





$$4m + 2 = 30$$



Balancing scales can really help us with equations.

The scales are balanced.

There are 30 marbles in each tray.

On the right side I know there are 30 marbles and on the left there is 4 lots of a mystery number plus 2 extra marbles

Take away 2 marbles from each side so now you have  
 $4m = 28$

Can you work out  $m$ ?



The scales are balanced.

There are 45 marbles in each tray.

On the left side I know there are 3 marbles and 7 lots of a mystery number.

Take away 3 marbles from each side so now you have

$$7k = 42$$

Can you work out  $k$ ?

$$7k + 3 = 45$$

## Time for a quick recap:

▶ The Removal method is all about making each side of the equation as simple as possible.

▶ Something like this is ideal:

$$2r = 10$$

2 lots of 5 make 10

$$\text{so } r = 5$$

Now try these:

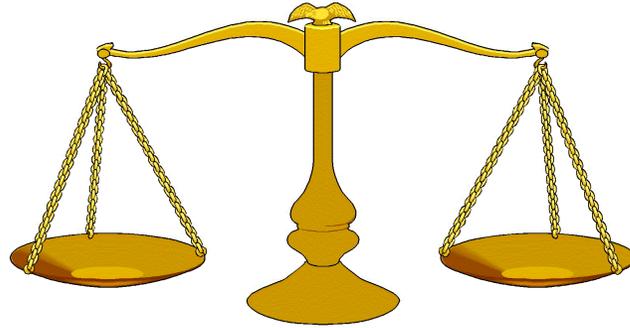
$$1) 3t + 5 = 23$$

$$2) 6k + 18 = 50$$

$$3) 3x + 2 = 20$$

$$4) 9m + 8 = 71$$

$$5) 12n + 10 = 154$$



# BBC BiteSize has some great videos

- ▶ <https://www.bbc.co.uk/bitesize/topics/zghp34j/articles/z2qmrwx>

Watch the video on equations.

Let's try these questions together...  
They all have the addition symbol.



Find the missing numbers:

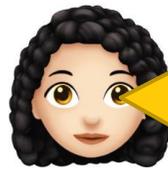
1)  $m + 4 = 20$

2)  $15 + n = 32$

3)  $r + 0.8 = 1.3$

4)  $0.42 + k = 1$

5)  $h + \frac{1}{4} = 1 \frac{3}{4}$



Remember that you can think of decimal numbers as money.  
'Something' added to 80p makes £1.30  
So take away that 80p from the left side and take it away  
from the right side...

You are actually doing the opposite to the symbol that's shown so  
we say you're doing the **INVERSE** operation

# Questions with subtraction:



Remember to do the inverse operation.  
Also check your work , read the number sentence through with the answer you found.

▶ 6)  $m - 3 = 23$

▶ 7)  $t - 19 = 88$

▶ 8)  $n - \frac{1}{3} = 2 \frac{2}{3}$  hint: Draw fraction cakes for the inverse

▶ 9)  $s - 0.99 = 1 \frac{1}{4}$  hint: What is a quarter of a pound?

# Multiplication:

$$11) 30r = 90$$

$$12) 3y = 27$$

$$13) 0.5d = 4$$

$$14) 10n = 1.5$$

$$15) 60k = 420$$



Sometimes in algebra you will see a number and a letter right next to each other.

e.g.  $5b$

Can you remember what this secret operation is that exists between the number and letter?

## Division:

▶  $p \div 3 = 12$

▶  $f \div 5 = 0.8$

▶  $k \div 9 = 30$

▶  $m \div 10 = 0.43$  hint: place value jumps!

▶  $t \div 6 = \frac{1}{4}$  hint: draw fraction cakes or go for the decimal equivalent

## Tomorrow we'll move onto something more challenging and finish with a quiz:

- ▶  $3 \times ? + 5 = 11$  ( 3 lots of something plus 5 equals 11 so we get rid of that 5 from both sides...)
- ▶  $9 + 6 \times ? = 51$  ( 6 lots of something plus 9 equals 51 so we get rid of the 9 from both sides....)
- ▶  $0.6 = ? \div 5 - 0.3$  (if we pretend that 30p was never taken away we have 90p on both sides of the scales so  $0.9 = ? \div 5$  )
- ▶  $? \div 2 + 11 = 26$  ( a number split into 2 plus 11 equals 26 so we should get rid of 11 from both sides)

WELL DONE YEAR 6, you are resilient learners!