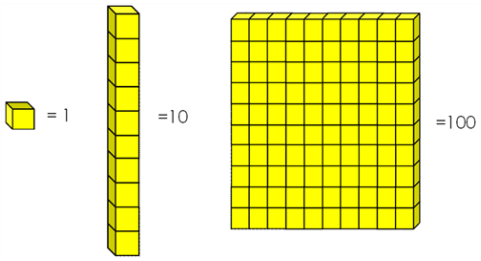
Calculations in KS1

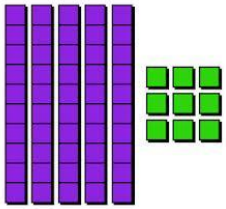
Parents have been asking about how we calculate in KS1, so they can help their child at home. I have put together a few basic ideas to help.

Year 1

The children will learn to count forwards and backwards up to 100, but also how to write the numbers in both words and numerals.

They will then learn to find 1 more or less; 10 more or less and to order numbers. Numicon is a great tool for these simple calculations but now they will also begin to use other apparatus to represent what they are doing. With both Numicon and Base 10 they will learn that 10 ones make up a ten.





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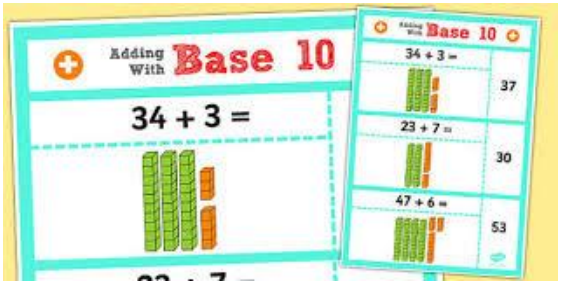
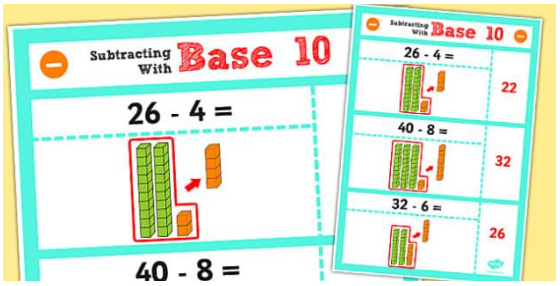
Now they can add numbers together using the Base 10 blocks.



Subtractions that do not cross the 10 are easy to do as the number can be made and the unit blocks or tens sticks can be removed as the 'take-away'.

However, once the 10 is crossed it gets a little trickier as a ten rod has to be 'swapped' for 10 ones.

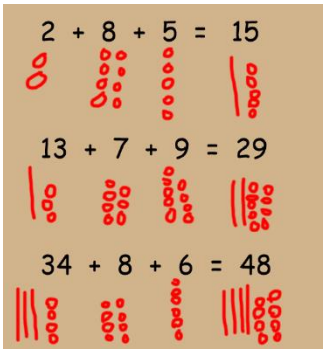


By Year 2 this will then translate into jottings. A straight line to represent the tens and a square for the ones. Although, we encourage rings as they are easier to draw. We tend to refer to these as 'sticks and do-nuts'.

Year 2

In year 2 the children will continue to use both Numicon (to consolidate the place value) and Base 10 for a while, before replacing all of the apparatus with jottings. They are not permitted to use any type of apparatus in the Year 2 SAT's tests so it is essential that they learn jottings as soon as possible.

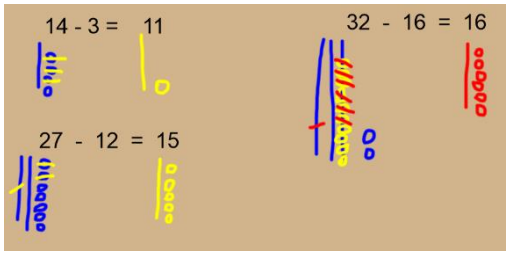
Addition



The jottings are written beneath each number and can be crossed out as they are counted, to ensure careful counting. Writing them beneath the answer space helps when the ones go beyond the 10, so creating a new 'stick', then the child can clearly see the total in order to write the answer.

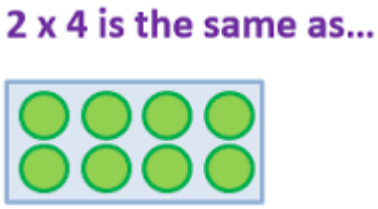
Subtraction

When subtracting only the jottings for the greatest number need to be written, as we are removing some. This is straightforward when not crossing the 10 but when crossing the ten (i.e. taking 6 ones from 2 ones) they have to 'exchange' a 10 stick for 10 ones – we suggest they write over the top of the stick so they can see it has **changed how it looks** but is still worth the same amount. Then they can subtract.



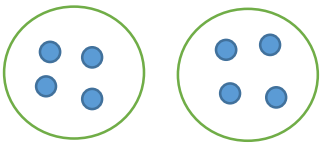
Multiplication and Division

When multiplying we refer to the 'x' meaning 'lots of' or 'groups of', etc. They can be calculated in different ways. One visual method is by using arrays. E.g.



These are equally good for showing the 'inverse' or opposite. The inverse of multiplication is division. Using this model they can clearly see that 8 divided by 4 is 2 or 8 divided by 2 is 4.

With other jottings the children would draw circles and draw the correct number of 'do-nuts' in each circle.



E.g. 2 lots of 4. This is easy to count, but not practical for greater numbers – this is when mistakes happen. The same method can be used division, but the do-nuts are shared equally between the rings. Again, this needs careful counting.

Later the children will begin to use the base 10 style jottings for multiplication. This is easier for greater numbers as the groups of 'sticks' can be added and then the groups of 'do-nuts' to find the total.

These are the basic calculation methods we use. Other methods may be used at different times and if you have any questions please just ask us to explain them. I hope this helps.