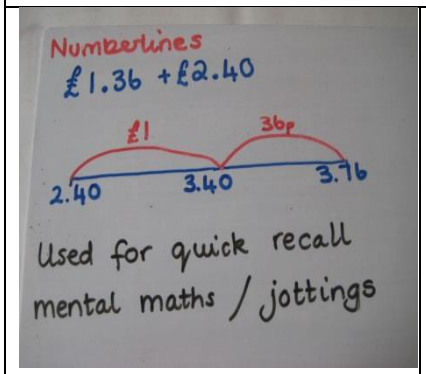
Parent's Guide to Supporting Maths in the New National Curriculum: KS2

Below you will find an overview of the types of calculating your child will be expected to do and use. We have included the types of representations we use with them. In line with the National Curriculum Aims we use these to develop **an understanding** of the concept to build a really firm foundation in calculations and therefore **do not** teach the children a procedure to follow to "do a sum" as this has been shown to have no long term benefit. They all will progress at different rates, but all should be securely using more compact methods by year 5. Upper KS2 focusses more on the application of number skills with ever increasing complexity. This means the children need to use their reasoning skills and will do best if they are fluent in their number/ times table facts and methods. Practical handling of resources still remains essential to aid secure understanding ready for this more demanding curriculum.

Addition and Subtraction

Representations we use for addition.



Often we need to calculate with smaller numbers very quickly when solving more complex problems. Number lines and other jottings, used in previous years, help keep those mental skills sharp. Quick mental calculations are practiced daily to keep those skills sharp.

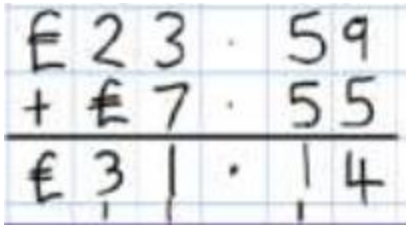
Column method

789 + 642 becomes

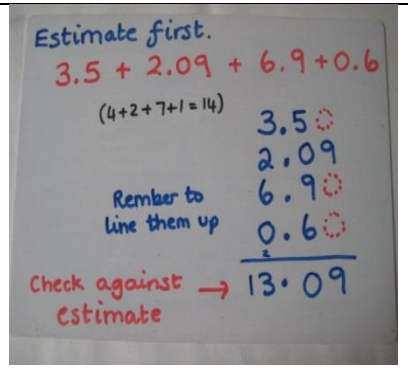
	7	8	9
+	6	4	2
1	4	3	1
	1	1	

We can extend the column method to add numbers up to a million using columns and exchanging or carrying.

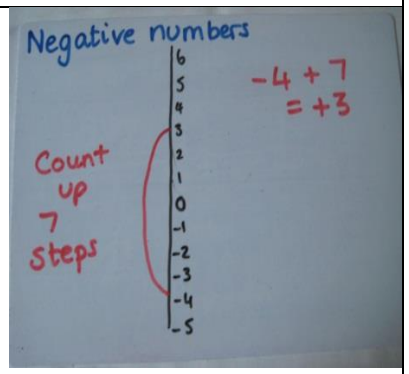
Column method



When adding decimal numbers we begin by lining up all of the decimal places to ensure we are using the correct place value position. Sometimes it is helpful to add extra zeros to hold a column "open".

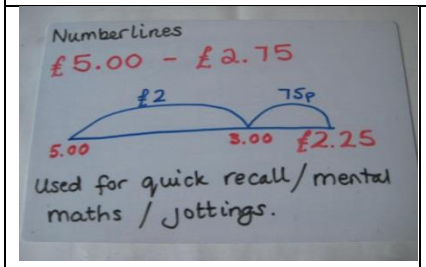


When calculating with decimals we are encouraged to estimate first, using our rounding skills. This then helps us check that final answer 13.09 and not end up with 130.9!

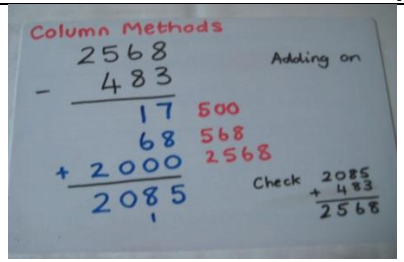


Number lines are also invaluable for calculating problems using negative numbers. We start by calculating in context such as a drop in temperature. We move on to adding and subtracting 2 negative numbers together still showing how this happens on a number line.

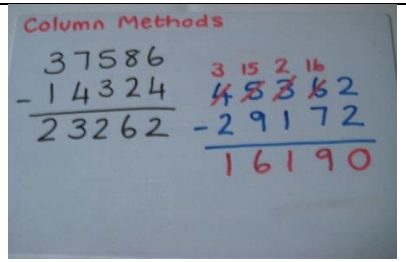
Representations we use for Subtraction.



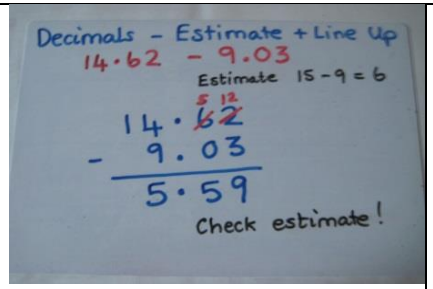
Often we need to calculate with smaller numbers very quickly when solving more complex problems. Number lines and other jottings, used in earlier years, help keep those mental skills sharp. Quick mental calculations are practiced daily to keep those skills sharp.



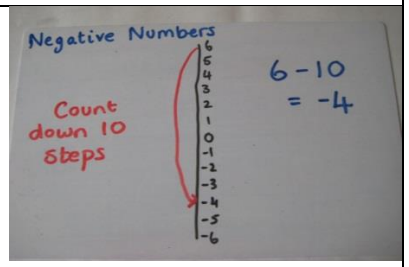
Some children prefer to add on from the smallest number to the large like giving change. This most closely represents what happens on a number line and as the children make pairs to 10 and 100 regularly in mental maths they can find this easy.



Having used place value counters and number rods a lot before, they have a much better understanding of the exchanging that is needed to subtract this way. The children are encouraged to look at the size of the numbers and choose the most efficient method i.e. you wouldn't do 2000 – 9 this way!



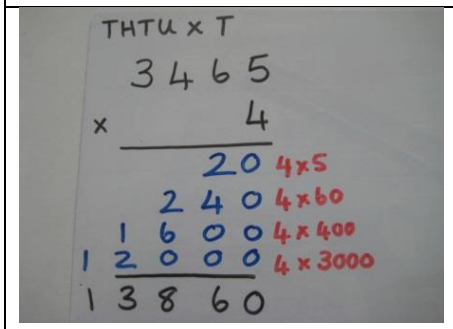
Remember - estimate first then line up the decimal places.
Don't forget to check that answer!



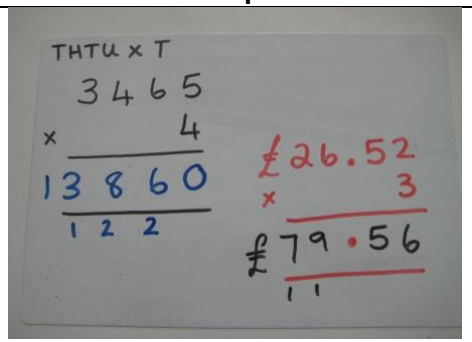
Number lines are also invaluable for calculating problems using negative numbers. We start by calculating in context such as a drop in temperature etc but move on to adding and subtracting 2 negative numbers together.

Multiplication and Division

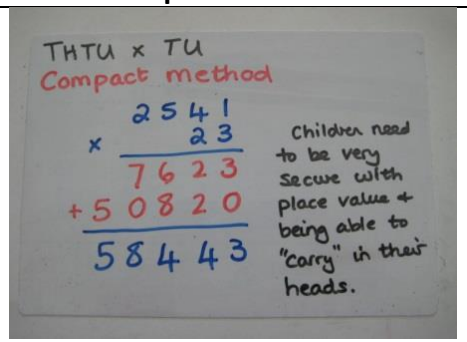
Representations we use for Multiplication.



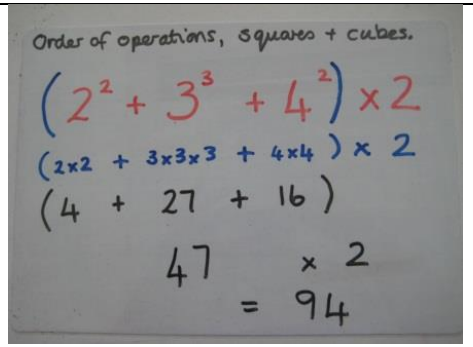
A bridging method it shows how each digit is multiplied individually and then their totals added together. Making sure you use the zeros to put the answer in the correct place. Using and knowing times tables facts is equally important.



Soon they are ready to move onto a more compact method. Having previously used place value counters to develop an understanding of exchange this should come easily now.

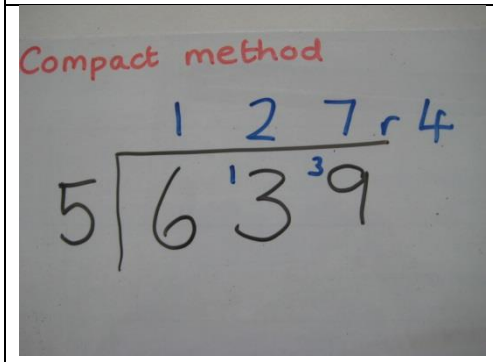


Children move onto a more compact method, multiplying 3 and 4 digits by 2 digits.



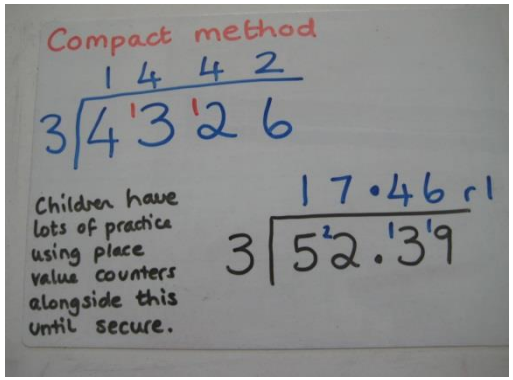
They also begin to use squared and cubed numbers as well as understanding using brackets and the order of operations. They will be introduced to these concepts through practical investigations.

Representations we use for Division.

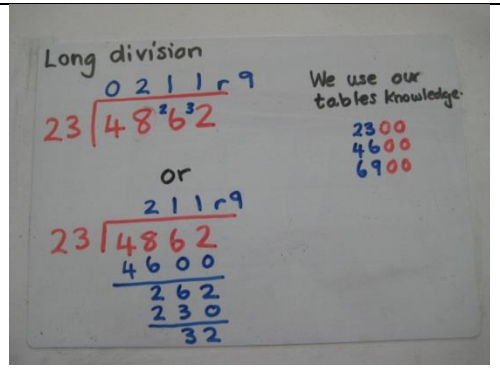


During year 4 the children are introduced to this short division method (bus stop).In year 5 they should become very secure using this. Using place value counters will help anyone to model this if they are unsure.

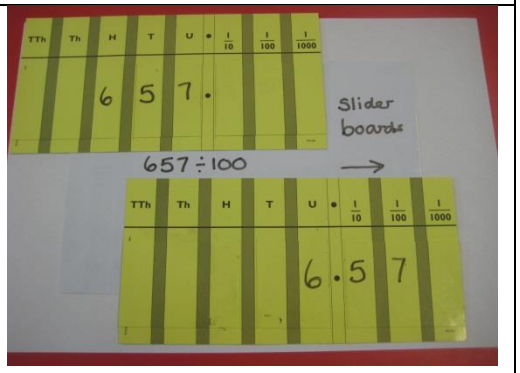
Short division



Continuing using place value counters alongside written methods keeps the understanding at the fore front. We also extend this method to decimals too.



Long division is introduced last as this is significantly more difficult. It is linked to previous methods and the children are encouraged to use multiples of their tables to create bigger numbers to get closer to the number to share.



The children also consolidate using the slider boards to ensure they understand what happens when you multiply and divide by 10, 100, 1000 and 10 000.