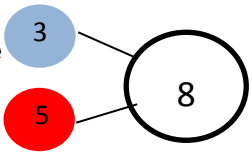
Calculation Guidance

First: Count All

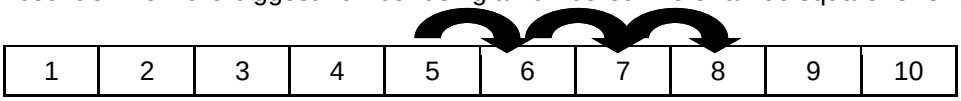
Children count three counters and then five counters and then find the total by counting all the counters.

- Children use practical methods to discover about addition e.g. biscuits are added to a plate
- Children have lots of opportunities to count on in ones using rhymes.
- Children use part/part whole model to record their calculations and discover 3+5=5+3
- Children concentrate on numbers to 10 then 20.

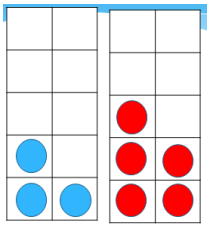


Then: Count On

Children count on from the biggest number using a numbered line or a 100 square. 5+3=8

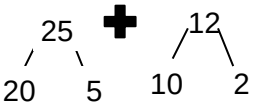


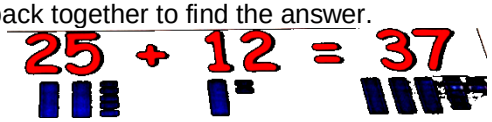
- Children continue to use practical equipment to aid their adding e.g. tens frames
- Children use mental counting on using their fingers to aid.
- Children write their own number sentences e.g. 3 + 5 = 8 or 8 = 5 + 3
- Children concentrate on numbers to 20 then 100.



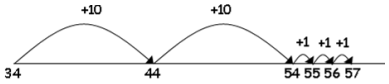
Next: Partitioning Practically

Children split up the smaller number into tens and ones using practical equipment to help e.g. Dienes cubes, partitioning cards or coins. Then they recombine the numbers back together to find the answer.





They will use this skill to count on using their own number line. 34 + 23 = 57



Finally: Expanded Addition

Children are taught to continue to partition and write in a more formal method when dealing with larger numbers.

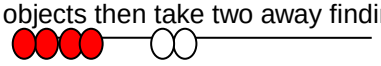
25 + 12 = 37
20 + 10 = 30
5 + 2 = 7

Children partition each number, set them out in columns and then recombine for the answer.

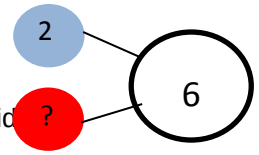
25 + 12 = 37
25 + 10 = 35
35 + 2 = 37

First: Counting What's Left

Children start with six objects then take two away finding the answer by counting how many are left.

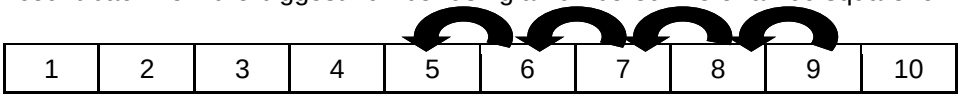


- Children use practical methods to discover about subtraction e.g. fruit left on a plate.
- Children have lots of opportunities to count back in ones using rhymes.
- Children use the part/part whole to record their calculations using addition skills learnt to aid
- Children concentrate on numbers to 10 then 20.

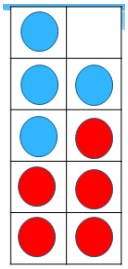


Then: Count Back

Children count back from the biggest number using a numbered line or a 100 square. 9 – 4 = 5

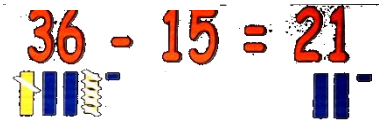


- Children use practical equipment to aid their subtraction e.g. tens frames
- Children use mental counting back using their fingers to aid.
- Children write their own number sentences e.g. 9 – 4 = 5
- Children concentrate on numbers to 20 then 100.



Next: Partitioning Practically

Children continue to use practical equipment to aid their partitioning e.g. Dienes cubes, partitioning cards or coins.



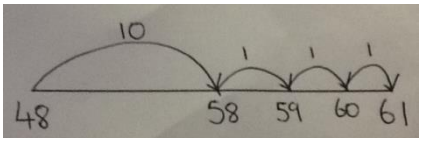
36 - 15 = 21
30 - 10 = 20
6 - 5 = 1

42 - 39 = 3
42 - 30 = 12
12 - 9 = 3

Children may also split up the smaller number into tens and ones and use expanded column subtraction when regrouping is required:

Finally: Difference

Children also use their own number line to count on when finding the difference of two numbers close together. The difference of 48 and 61 is 13.



Also Inverses:

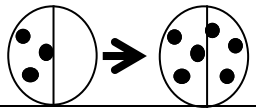
Children should show an understanding that addition is the inverse of subtraction and use this to discover calculations like the following:

If 15 + 5 = 20 then 20 - 15 = 5 and 20 - 5 = 15

First: Doubling

Children will practically double numbers and count all. E.g. Double the 3 spots on the ladybird:

- Children practise counting on in 2's.
- Children concentrate on numbers to 10 and then 20.



Then: Sets & Groups

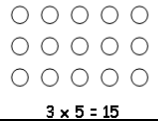
- Children continue to use practical equipment to aid their multiplication.
- Children concentrate on counting in 2's, 5's and 10's.

Children examine adding sets or groups of the same numbers 3 lots of 5 = 15

- Teacher demonstrates how to write a simple number sentence e.g. 7x2=14 using the phrase 'lots of'

Next: Arrays

Children examine how multiplication can be modelled using set of the same number and an array:

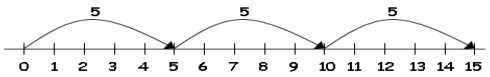


Commutativity

Children should know that 3 x 5 has the same answer as 5 x 3.

Finally: Repeated Addition & Partitioning

Children then use their own number line to repeatedly count on the same number. 5 x 3 = 5 + 5 + 5



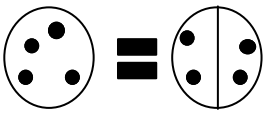
Children are taught to continue to partition the biggest number and multiply the tens and the units. They then recombine the numbers to find the answer.

23 x 5 = 115
20 x 5 = 100
3 x 5 = 15

Children are also encouraged to learn their times tables by rote. Beginning with 2, 5 and 10. Then progressing to 3 and 4.

First: Halving

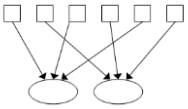
Children start with halving even numbers to 10 and then 20 exploring how a number can be split in 2.



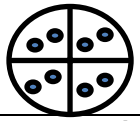
- Children use practical methods to discover about division e.g. Sharing fruit between friends.
- Children are introduced to the concept of a remainder when dealing with odd numbers to test their ideas of sharing fairly.

Then: Sharing

Children share numbers fairly between sets to find the answer. 6 ÷ 2 = 3



- Children use practical equipment to aid their division e.g. cubes
- Children concentrate on sharing in 2's, 5's and 10's
- Teacher demonstrates how to write a simple number sentence e.g. 10÷2=5 using the phrase 'shared by.'



This method is also used for fractions of numbers by drawing quadrants to share between.
¼ of 8 = 2

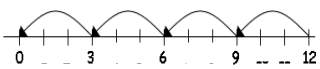
Next: Grouping

Children group a number into sets to find how many sets are made. 6 ÷ 2 = 3

They are also asked to group random objects into a set number sometimes showing remainders. Put these 7 stars in groups of 2

Finally: Repeated subtraction

Children use their own number line to count back the same step to discover how many jumps are needed to reach 0. 12 ÷ 3 = 4



Also Inverses:

Children should begin to see the relationship between multiplication and division as the inverse of one another. Starting with halving being the opposite of doubling and then progressing to using their times tables.

This is an overview of the strategies used throughout your child's whole time at Whitestone. Children are **not** expected to achieve all of this in one year, but work through the different strategies when they are ready to do so. They may understand one strategy more than another and are encouraged to choose which one works best for them or is most appropriate for the calculation.