Danbury Park Community Primary School

Mathematics

Key Stage One Parents' Guide September 2021

Be wise, be happy, belong

Introduction

This purpose of this parents' guide is to model the various written methods of recording that the children at Danbury Park Community Primary School will be taught during their time in Key Stage One. As the children progress through the school, they develop a bank of mental strategies and written methods that they can use and apply in their learning of mathematics and to real life problem solving.

We hope that the written methods in this guide will help you when you are supporting your child with their learning at home.

Addition

Year 1

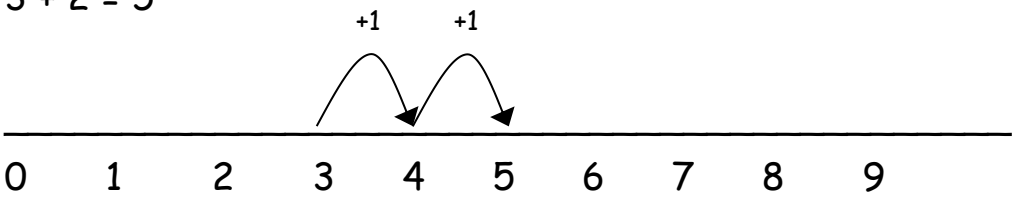
Children are encouraged to develop a mental picture of the number system in their heads to use for calculation. They develop ways of recording calculations using pictures, etc.

4 + 2 = 6

4 + 2

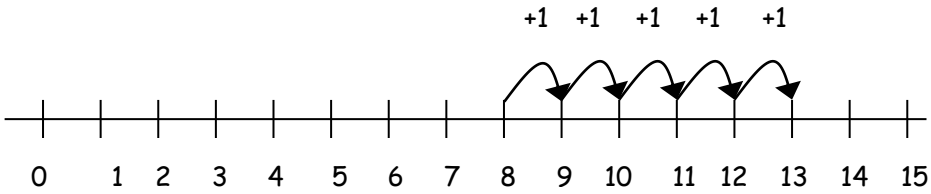
They use number lines and practical resources to support calculation and teachers demonstrate the use of the number line.

3 + 2 = 5



Children then begin to use numbered lines to support their own calculations using a numbered line to count on in ones.

8 + 5 = 13



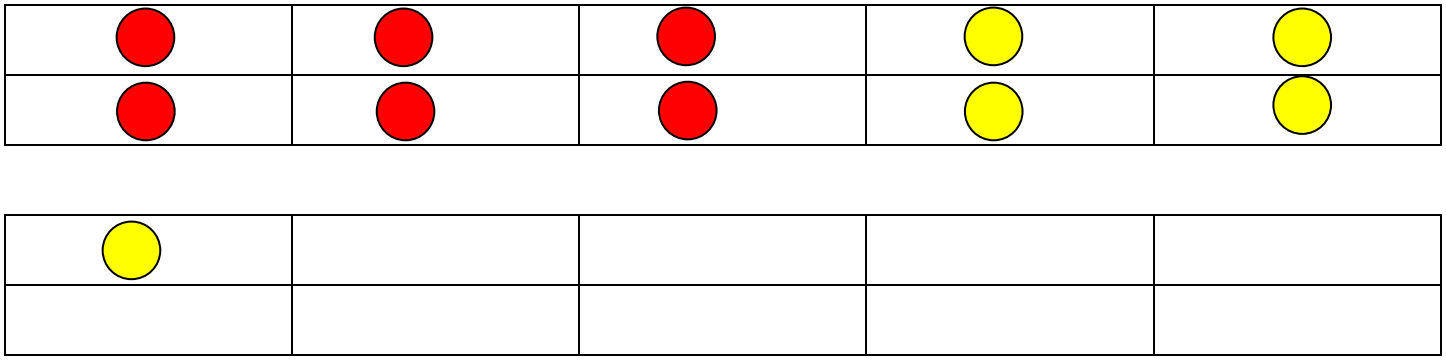
A bar model encourages the children to count on.

4+3=7

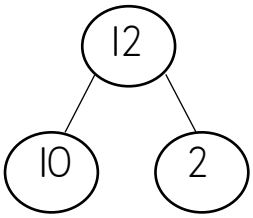
7	
4	3

Use of a ten frame and counters/cubes.

6+5=11



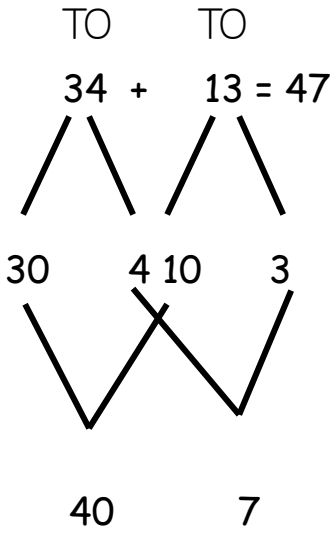
Part-whole model



Year 2

Partitioning

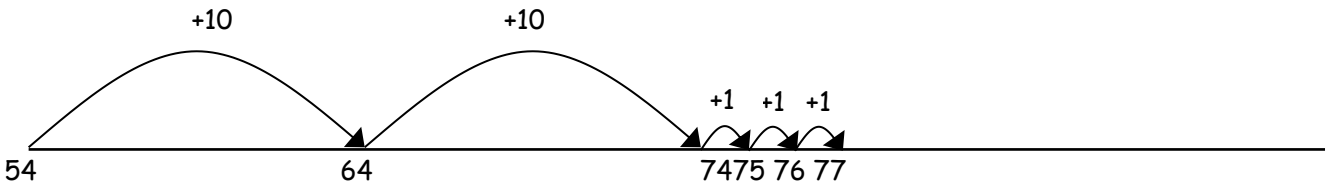
Children are shown how to partition into tens and ones, progressing onto hundreds, tens and ones. Children can then use this strategy to help them with their addition.



Children will begin to use 'empty number lines' themselves starting with the larger number and counting on.

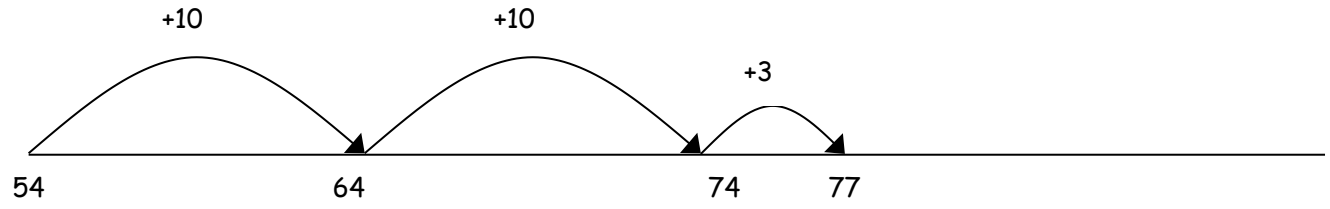
❖ First counting on in tens and ones.

54 + 23 = 77



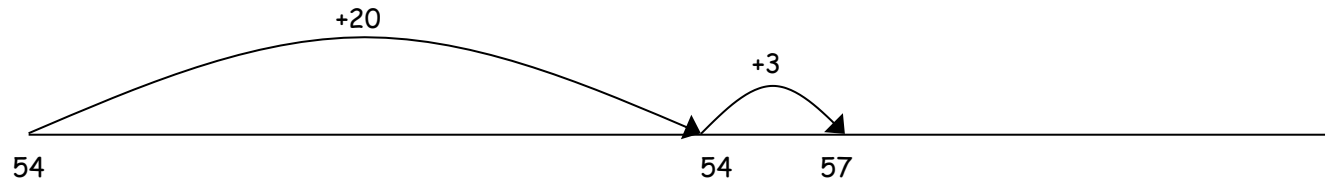
❖ Then helping children to become more efficient by adding the ones in one jump (by using the known fact 4 + 3 = 7).

54 + 23 = 77



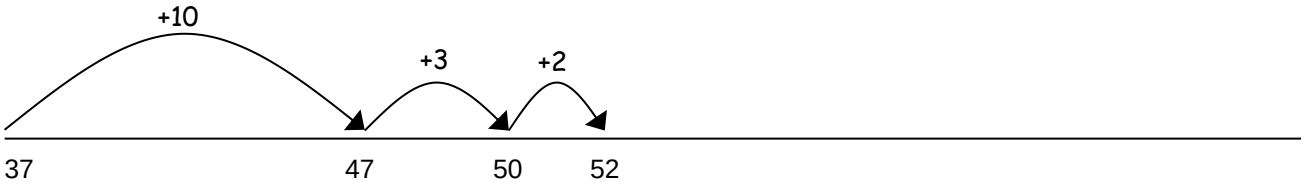
❖ Followed by adding the tens in one jump and the ones in one jump.

54 + 23 = 77



❖ Bridging through ten can help children become more efficient.

37 + 15 = 52

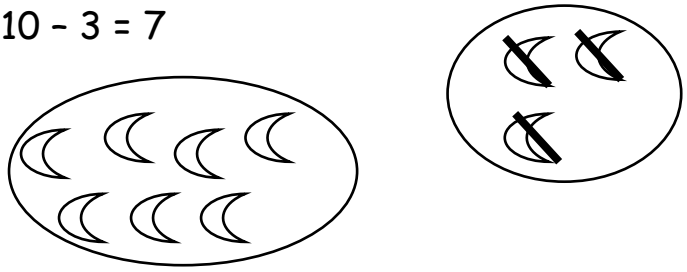


Subtraction

Year 1

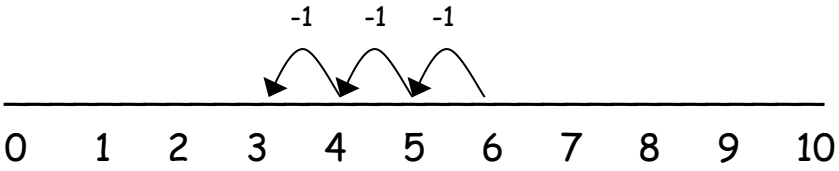
Children are encouraged to develop a mental picture of the number system in their heads to use for calculation.

10 – 3 = 7



They use number lines and practical resources to support calculation. Teachers demonstrate the use of the number line.

6 – 3 = 3



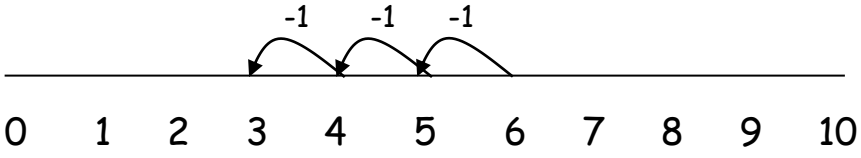
Using the bar model

4–3=

?=4–3

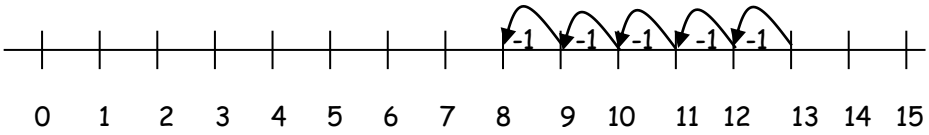
4	
3	?

The number line is also used to show that 6 – 3 means the 'difference between 6 and 3' or 'the difference between 3 and 6' and how many jumps apart they are.



Children progress by using numbered lines to support their own calculations through the use of a numbered line to count back in ones.

13 - 5 = 8



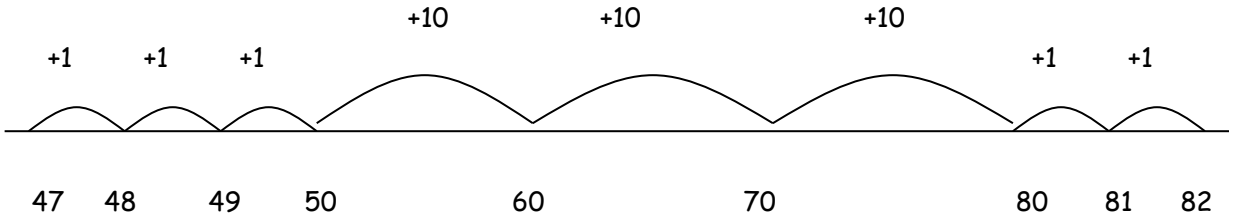
Year 2

In Year 2 children use empty number lines to support calculations.

Counting on

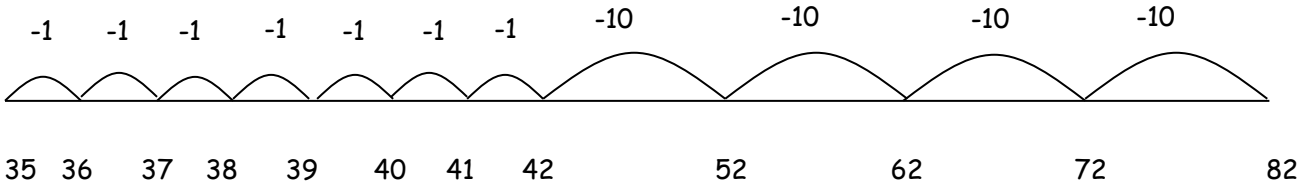
Count up from 47 to 82 by partitioning into tens and ones.

82 - 47 = 35



Help children to become more efficient with counting on by:

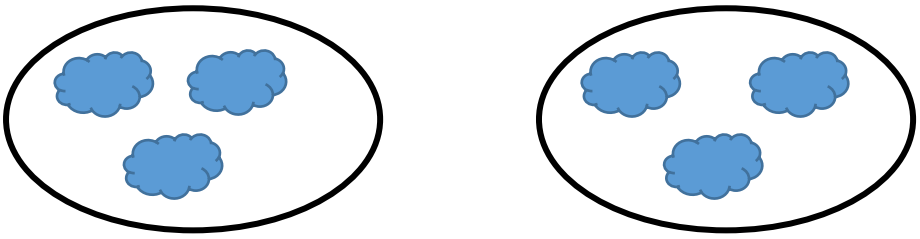
- Subtracting the ones in one jump;
- Subtracting the tens in one jump and the ones in one jump;
- Bridging through ten.



Multiplication

Year 1

Children will experience equal groups of objects and will count in 2s and 10s and begin to count in 5s. They will work on practical problem solving activities involving equal sets or groups.



3 + 3 = 6 double 3 = 6

Year 2

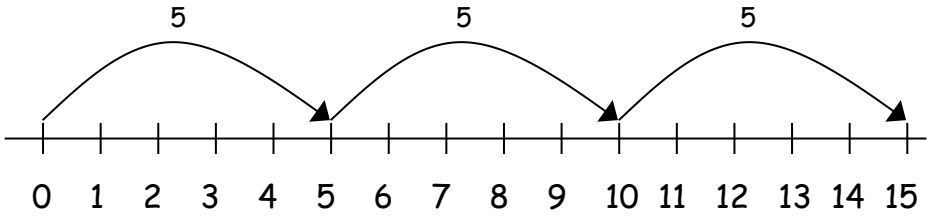
Children will develop their understanding of multiplication and use jottings to support calculation:

- **Repeated addition**

3 times 5 is 5 + 5 + 5 = 15 or 3 lots of 5 or 5 x 3

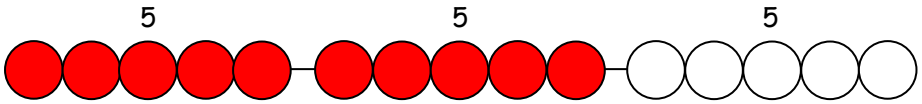
Repeated addition can be shown easily on a number line:

5 x 3 = 5 + 5 + 5



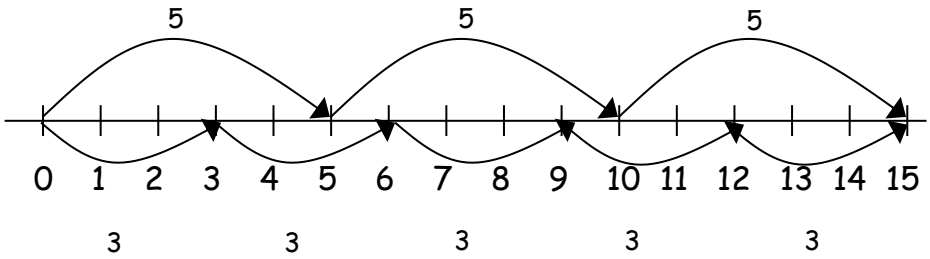
and on a bead string:

5 x 3 = 5 + 5 + 5



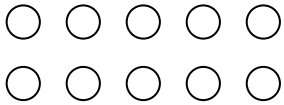
❖ Commutativity

Children should know that 3 x 5 has the same answer as 5 x 3. This can also be shown on the number line.



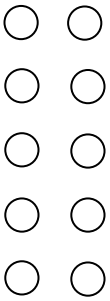
❖ Arrays

Children should be able to model a multiplication calculation using an array. This knowledge will support with the development of the grid method. (A useful resource is Numicon.)



5 x 2 = 10

2 x 5 = 10

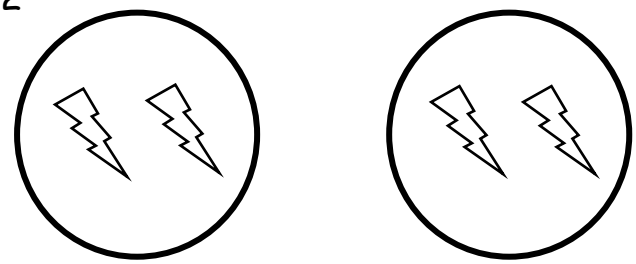


Division

Year 1

Children will understand equal groups and share items out in play and problem solving. They will count in 2s and 10s and later in 5s.

4 ÷ 2 = 2

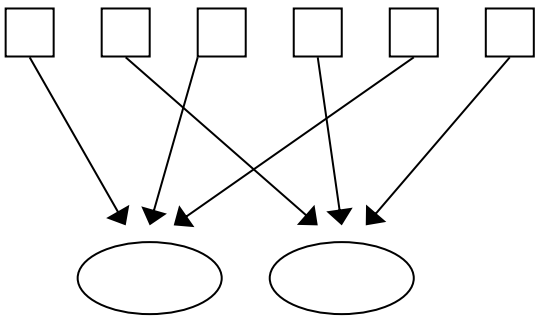


Year 2

Children will develop their understanding of division and use jottings to support calculation

- **Sharing equally**

6 sweets shared between 2 people, how many do they each get?

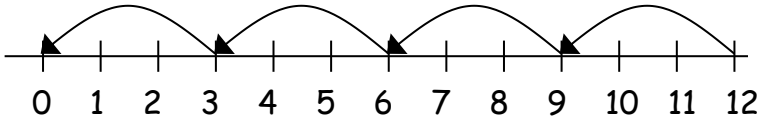


- **Grouping or repeated subtraction**

There are 6 sweets, how many people can have 2 sweets each?

Repeated subtraction using a number line

12 ÷ 3 = 4



- **Using symbols to stand for unknown numbers to complete equations using inverse operations**

□ ÷ 2 = 8 20 ÷ △ = 10 □ ÷ △ = 5

Knowing the inverse operation of division is multiplication, the children will need to reverse the process and 'undo' what has been done to take them back to where they started and find the missing number,.e.g.

□ ÷ 2 = 8