



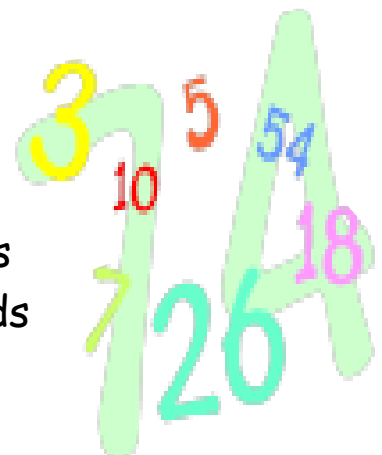
Calculation Policy: A Parent's Guide

Our school is committed to the lively and engaging delivery of mathematics across the age ranges and curriculum.

For the majority of their mathematics, a strong and confident grasp of the four number operations (addition, subtraction, multiplication and division) is important for both written methods as well as mental calculations.

This guide is divided into 5 sections. These will show you how mathematics is taught in school, the four number operations and the stages in which they are taught.

1. Maths in school
2. Stages in addition methods
3. Stages in subtraction methods
4. Stages in multiplication methods
5. Stages in division methods



1. Maths in school

In this school we :-

- encourage children to estimate (make a sensible guess) before calculating an answer.

- give children the opportunity to decide if a calculation can be done in their head or whether they need to use a written method.

- encourage children to check their answer to see if it is sensible.

- give the children 3 choices of how to work out the problem e.g. Numicon, number lines, in head.
- state on the work how the child worked out the problem.

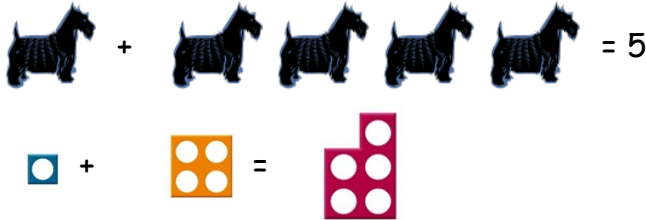
- like children to practice their multiplication facts until they know them off by heart (normally Year 2).

- move the children on through the stages as and when it is appropriate (not necessarily all at the same time).

2. Stages of addition:

Foundation Stage:

- 1) Handling objects by combining groups of objects for early addition
- 2) Numicon addition work



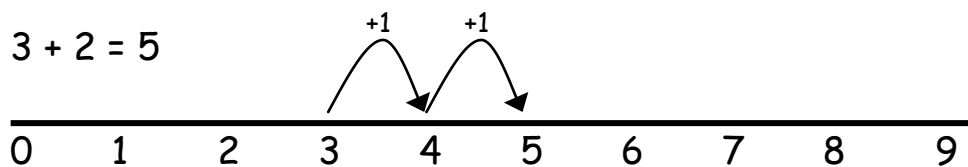
Key Stage 1:

- 1) Numicon cards
- 2) Pictorial and physical handling of objects or Numicon shapes for addition
- 3) Using commercially produced number lines



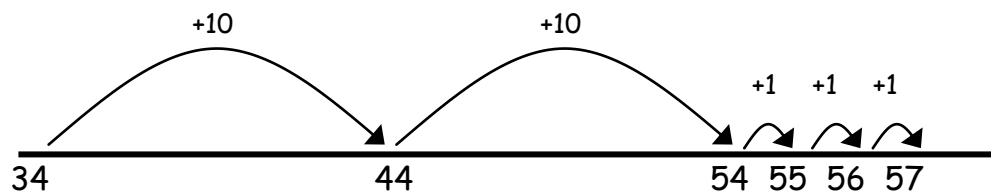
- 4) Drawing own number lines:

a. Counting on in ones:



b. Counting on in tens and ones with an open number line:

$34 + 23 = 57$ (split 23 into 20 and 3 ones)



(we don't need the numbers below 34 as we start with the biggest number and count on)

- 5) Horizontal Partitioning:

	$67 + 27 = ?$
<i>(Sort the tens first)</i>	$60 + 20 = 80$
<i>(Now sort the units)</i>	$7 + 7 = 14$
<i>(Now add the two together)</i>	$80 + 14 = 94$

3. Stages of subtraction:

Foundation Stage:

- 1) Handling objects for subtraction
- 2) Numicon cards

Key Stage 1:

- 1) Numicon cards - Calculating
- 2) Pictorial and physical handling of objects or Numicon shapes for subtraction

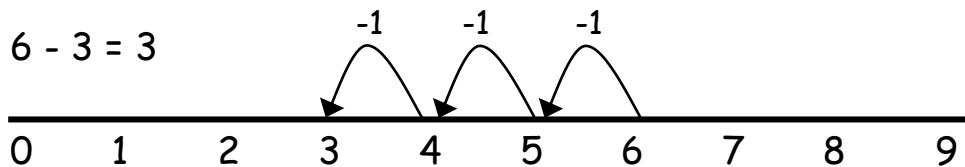


- 3) Using a commercially produced number line



- 4) Drawing own number lines:

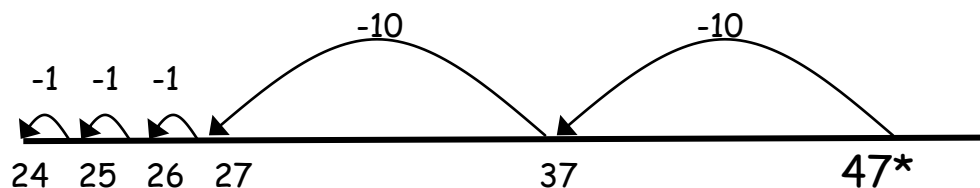
a) Counting back in ones:



b) Counting back in tens and ones:

$47 - 23 = 24$ (split 23 into 20 and 3 ones)

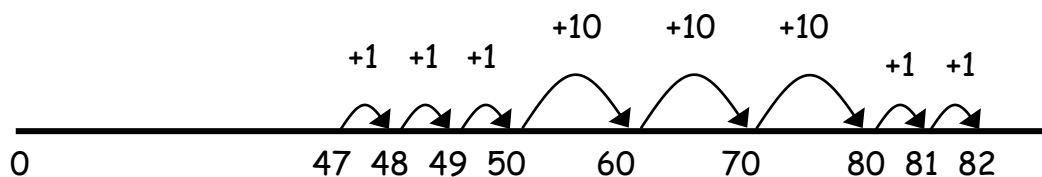
*N.B. Draw the number line starting from the right hand end**



(*we don't need the numbers above 47 as we start with the biggest number and count back)

c) Finding the difference between two numbers by counting up

$82 - 47 =$



Start at 47, add 3 to the nearest 'friendly ten' which is 50, and then 50 to 80 and then 80 to 82

i.e. $1+1+1+10+10+10+1+1 = 35$ (counting the 10s first makes this easier)

4. Stages of multiplication:

Foundation Stage:

- a. Objects, pictures and Numicon for finding doubles of small amounts



Key Stage 1:

- a. Pictorial multiplication i.e. drawing pictures in groups or sets
b. Repeated addition e.g. $2 + 2 + 2 + 2 = 8$ ($4 \times 2 = 8$)

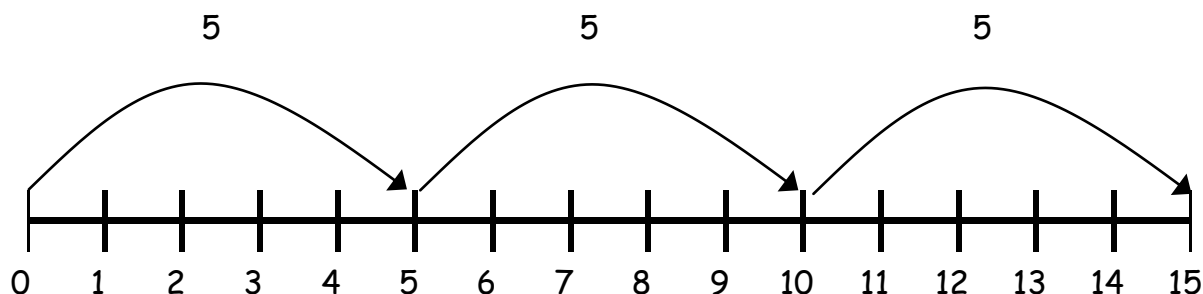
Numicon tiles are essential for making 'lots of' and aiding the counting in 5's and other numbers.

3 times 5 or $5 + 5 + 5$ or 3 lots of 5 or 3×5 or

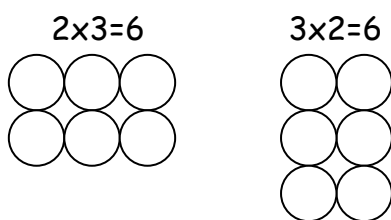


Repeated addition can be shown easily on a number line:

$$5 \times 3 = 5 + 5 + 5$$



- c. Visual arrays:



- d) Use of \times and $=$ for multiplication sums:

e.g. $7 \times 2 = 14$

5. Stages of division:

Foundation Stage:

- a. Objects, pictures and Numicon for finding halves of small amounts or simple sharing activities

Key Stage 1:

- a. Pictorial division i.e. drawing pictures in groups or sets
- b. Visual arrays / grouping

6 divided by 3

e.g. 6 sweets divided between 3 people = 2 each



- c. Repeated subtraction
e.g. Take away 2, take away 2 more, take away 2 more etc
- d. Use of \div and $+$ for division sums
e.g. $12 \div 3 = 4$

What is numicon



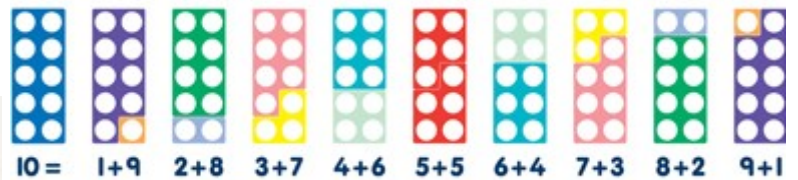
Numicon is the name of a simple, colourful counting and calculating resource we use throughout our school.



count with it

sort with it

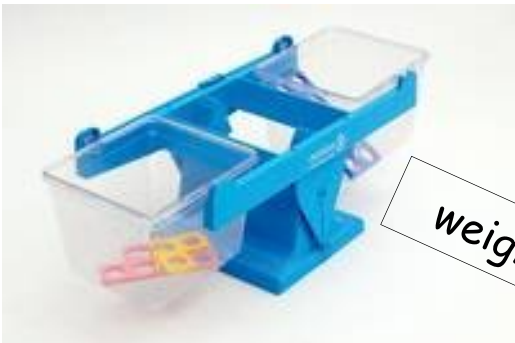
order with it



calculate with it



multiply and divide with it



weigh with it