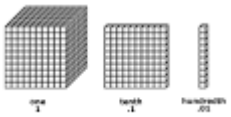
Year 1 Calculation Booklet

ADDITION

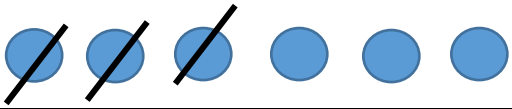
Count on from: using concrete apparatus to physically add to the pile when adding.

Be clear that children need to move something from one place to another to ensure all have been counted and not counted more than once. Using Numicon pieces and Dienes to count in units and tens.



Numicon or Dienes

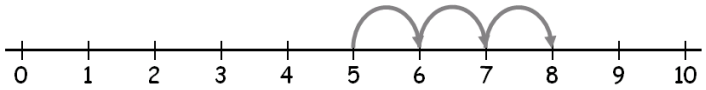
When counting pictures on a page encourage children to cross off the picture they have counted to ensure these are not counted twice.



Count on from the larger number: 3 + 5 Choose the larger number even when it is not the first number and count on three from there.

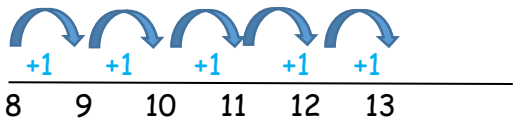
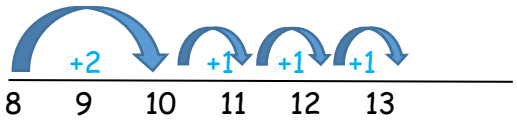
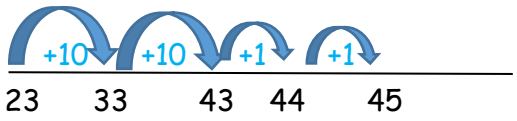
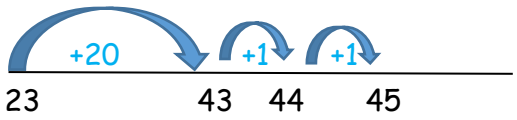
Script: Keep the biggest number in your head, make a fist and then count on *'six, seven, eight.'*

'5'

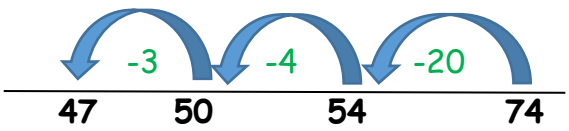


N.B This also shows that addition can be done in any order. The answer is the same.

Using a hundred square to count in units and tens. The unit digits do not change when adding 10 (e.g. 12, 22, 32, 42…)	
Use **known facts** +9 and +11 by adding 10 and adjusting +1 or -1	23 + 9 = (23 + 10 – 1)
Using doubles and near doubles to support addition calculations and adjust.	**Doubles:** 5 + 5 = 10 8 + 8 = 16 **Near Doubles:** 6 + 7 = ? If 6 + 6 = 12 so 6 + 7 = 13

Use of number bond facts to support difference and/or subtraction sums. Bridging through 10 e.g. 8 + 5. Add 2 first (to get to 10), then 3 more.	8 + 5 = 13  Extended to: 8 + 5 = 13 
Reducing the jumps made along the number line when counting in multiples of tens and units e.g. 23 + 22.	23 + 22 = 45 
Reducing jumps further when confident.	23 + 22 = 45 
Partitioning	35 23 30 5 20 3 30 + 20 + 5 + 3 = 58

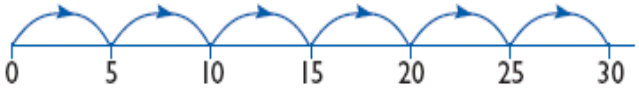
SUBTRACTION

Counting Back N.B. Children start on previously created number lines but can move on to blank number lines drawn with only relevant numbers recorded.	**74 - 27 = 47**  Could count the number of hops by adding 3 + 4 + 20 = 27

MULTIPLICATION

Children need to know how to count in 2's, 5's and 10's.

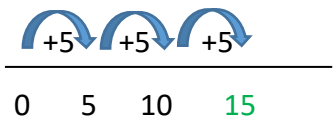
When children are moving on number lines these will initially be pre-prepared and then children will begin to draw number lines only with key numbers on it.



Looking for patterns on the hundred square.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Script: We use the phrases 'lots of' or 'groups of' when describing multiplication.

Multiplication as repeated addition.	4 x 2 = 2 + 2 + 2 + 2
Multiplication as arrays.	2x3 =  3 x 2 = 
Number lines Counting up in 3 groups of 5.	3 x 5 = 15 

To support place value:

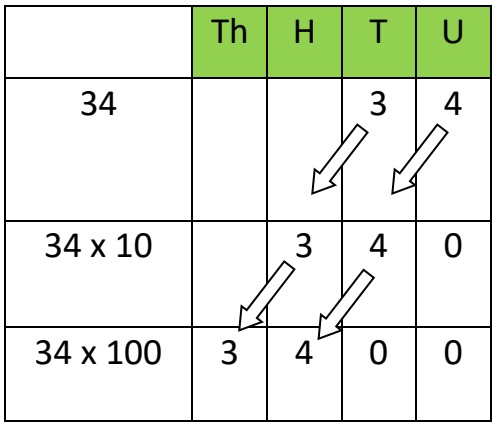
Multiplying by 10 and 100.

Recognise that when you multiply a number it becomes bigger.

1. When you multiply a number by 10, the digits do not change, but shift to the left (move up one place value).

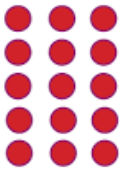
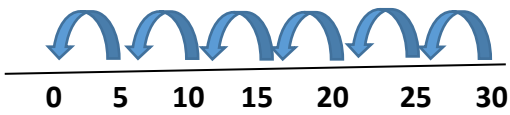
2. A 0 is put in the units column as a place value holder.

3. If you multiply a number by 100, the digits move two places to the left and two 0 s are put in the tens and units as place value holders.



	Th	H	T	U
34			3	4
34 x 10		3	4	0
34 x 100	3	4	0	0

DIVISION

Repeated subtraction	21 ÷ 7 = 3 21 - 7 - 7 – 7 = 3
This could be recorded in the form of arrays. This can be used by sharing out apparatus practically, such as fruits, teddies, cubes etc. 15 ÷ 3 =  	
Number lines As children gain confidence with their times tables they will recognise how many steps to take.	There are 30 cakes. There are five children. How many will they get each? 30 ÷ 5 =  NB: I took away 6 lots of 5
Using objects to recognise remainders. Children would use objects to group and recognise that there may be leftovers (remainders) when trying to share out equally.	There are 7 teddies that need to be shared between 2 friends. How many teddies does each friend get?  7 ÷ 2 = 3 r 1