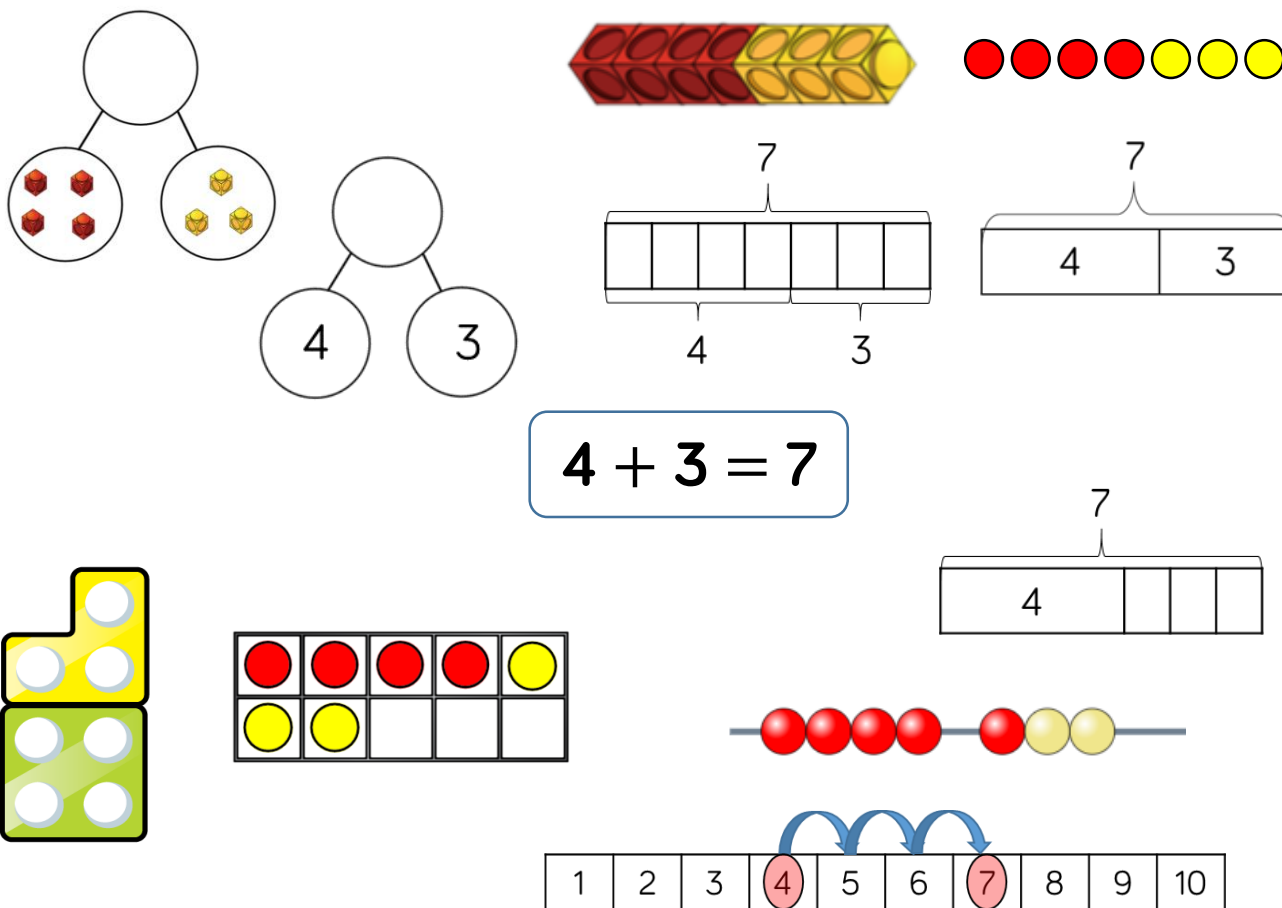# Addition

| Skill: Add 1-digit numbers within 10	Year: 1

$$4 + 3 = 7$$

When adding numbers to 10, children can explore both aggregation and augmentation.

The part-whole model, discrete and continuous bar model, number shapes and ten frame support aggregation.

The combination bar model, ten frame, bead string and number track all support augmentation.
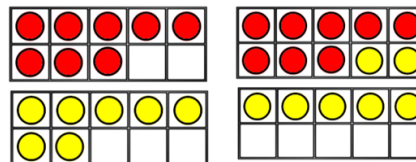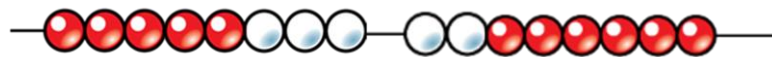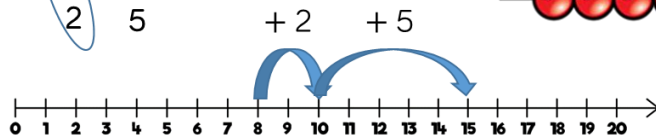
Skill: Add 1 and 2-digit numbers to 20	Year: 1/2

7

8

15

8	7

$$8 + 7 = 15$$

8 + 7 = 15

2   5

+ 2   + 5

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
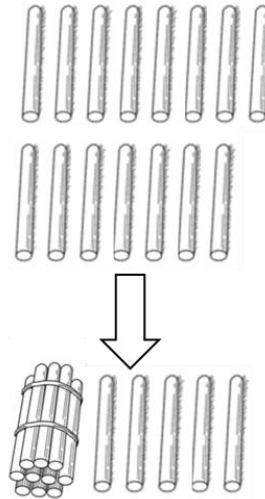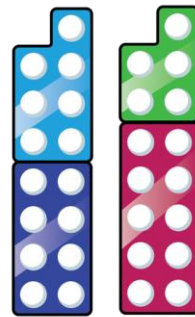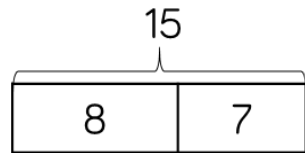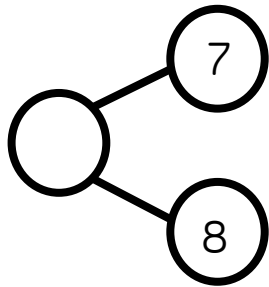
8 + 7 = 15

2   5

When adding one-digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten. In Year 1, this is only done just by counting on. From Year 2, use different manipulatives can be used to represent this exchange alongside number lines to support children in understanding how to partition their jumps.
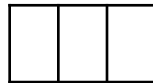
Skill: Add three 1-digit numbers	Year: 2

16

7 6 3
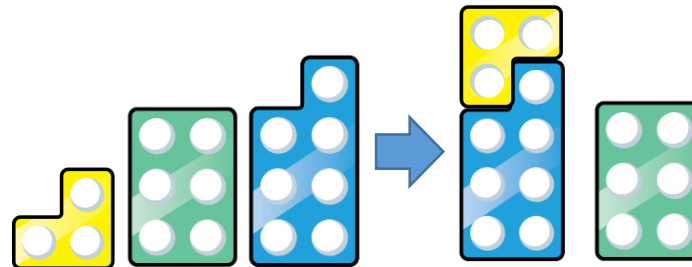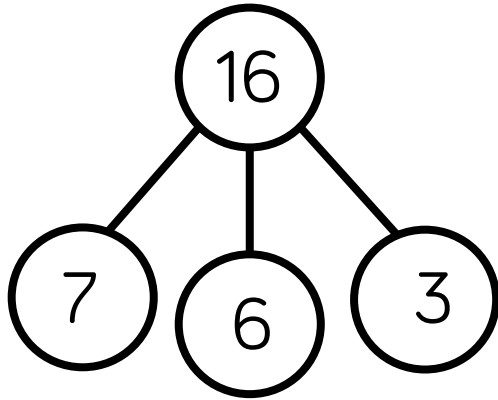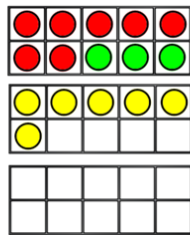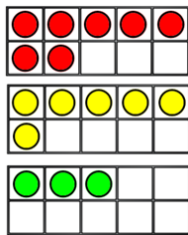
$$7 + 6 + 3 = 16$$

$7 + 6 + 3 = 16$

10

16

When adding three 1-digit numbers, children should be encouraged to look for number bonds to 10 or doubles to add the numbers more efficiently.

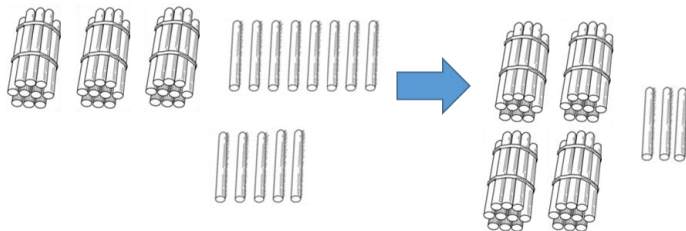This supports children in their understanding of commutativity.

Manipulatives that highlight number bonds to 10 are effective when adding three 1-digit numbers.

Skill: Add 1-digit and 2-digit numbers to 100	Year: 2/3

38

5

?

38

$$38 + 5 = 43$$

+2   +3
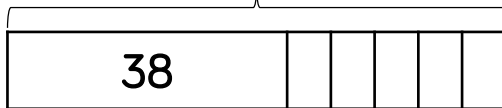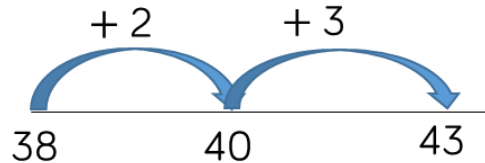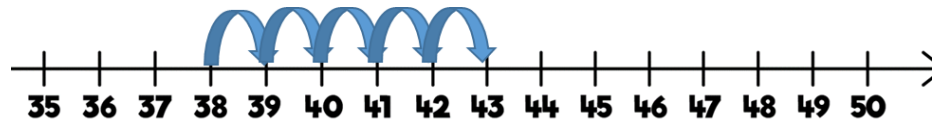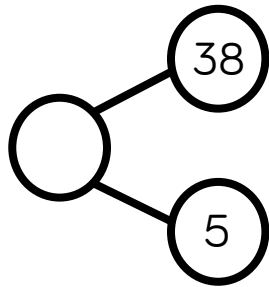
38   40   43

| 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

When adding single digits to a two-digit number, children should be encouraged to count on from the larger number.

They should also apply their knowledge of number bonds to add more efficiently e.g. $8 + 5 = 13$ so $38 + 5 = 43$.

Hundred squares and straws can support children to find the number bond to 10.
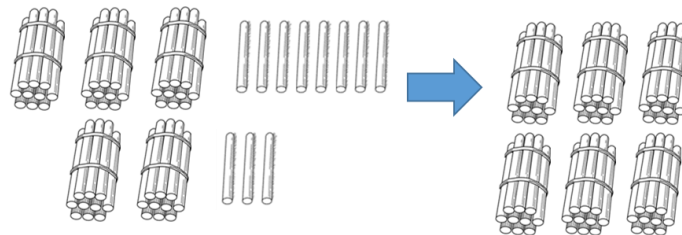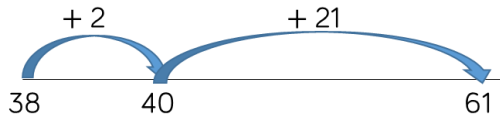
Skill: Add two 2-digit numbers to 100	Year: 2/3

38

23

?

| 38 | 23 |

+ 2   + 21

38   40   61

38 + 23 = 61

Tens	Ones

	38
	+ 23
	61
	1
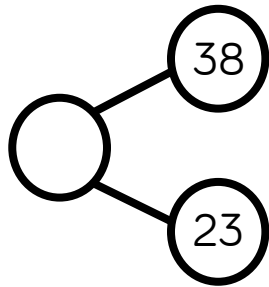
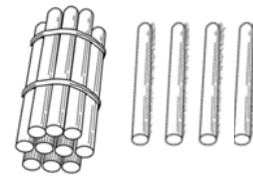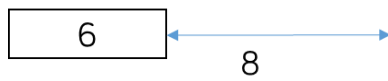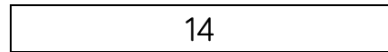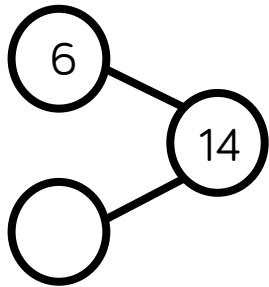| Tens	Ones

Children can use a blank number line and other representations to count on to find the total. Encourage them to jump to multiples of 10 to become more efficient.

From Year 3, encourage children to use the formal column method when calculating alongside straws, base 10 or place value counters. As numbers become larger, straws become less efficient.
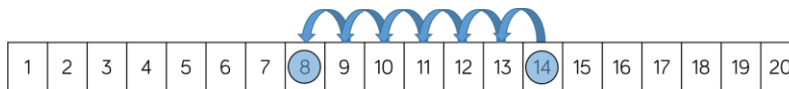
Subtraction
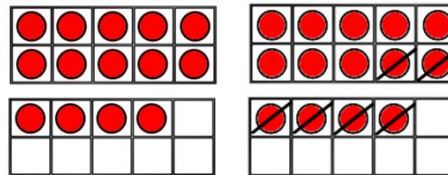
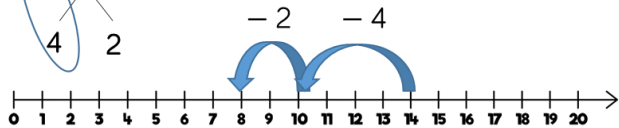| Skill: Subtract 1 and 2-digit numbers to 20	Year: 1/2

6

14

14

6

8

$$14 - 6 = 8$$

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |

14 − 6 = 8
4   2

− 2   − 4

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

14 − 6 = 8
4   2

Skill: Subtract 1 and 2-digit numbers to 100	Year: 2/3

65

28

65

?	28

+ 2   + 30   + 5

28   30   60   65

$$65 - 28 = 37$$

Tens	Ones
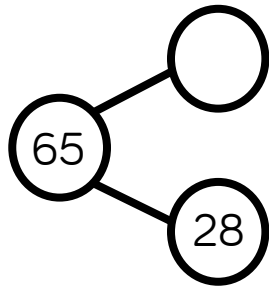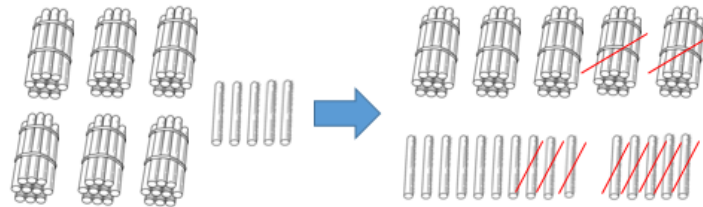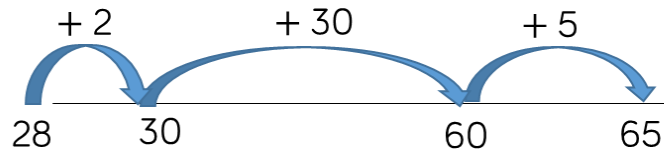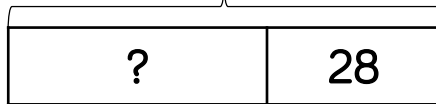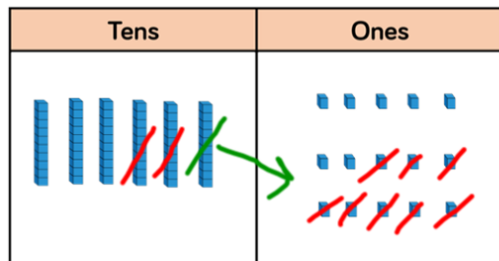
$$\begin{array}{r} 51 \\ \cancel{6}\cancel{5} \\ -\ 28 \\ \hline 37 \end{array}$$

Tens	Ones
10 10 10	1 1 1 1 1
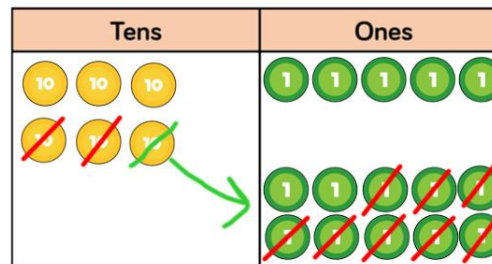
Children can also use a blank number line to count back to find the difference. Encourage them to jump to multiples of 10 to become more efficient.
From Year 3, encourage children to use the formal column method when calculating alongside straws, base 10 or place value counters. As numbers become larger, straws become less efficient.