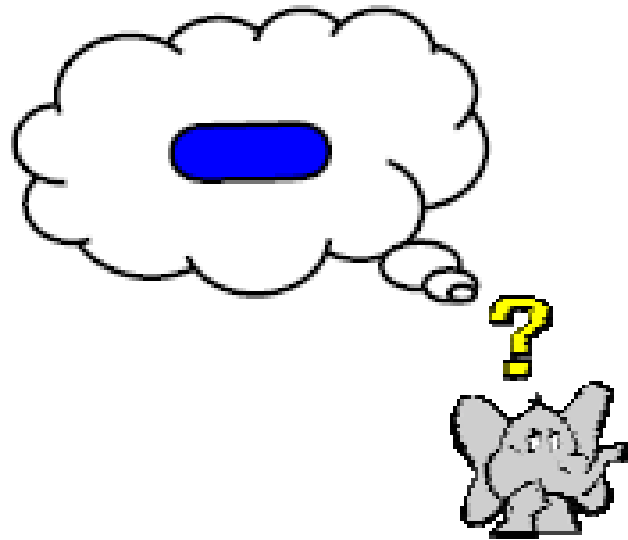


Progress in Teaching Subtraction

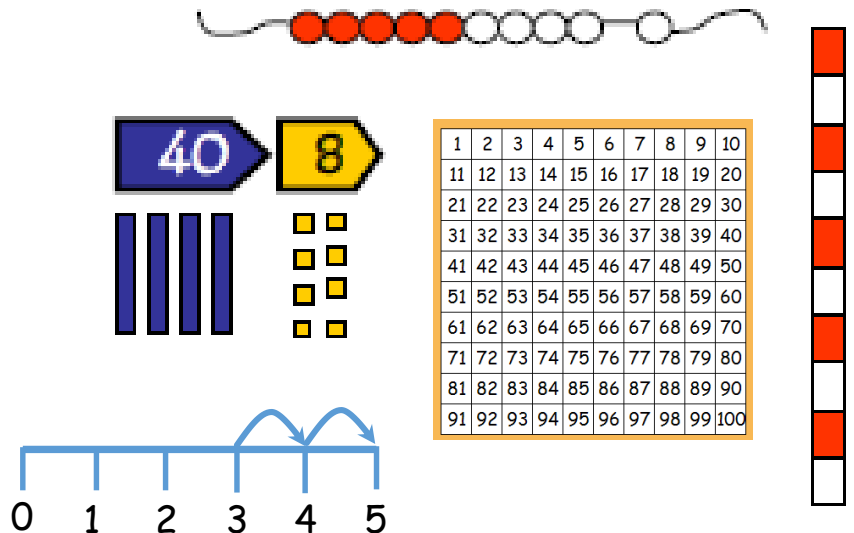
Mental Skills

- Recognise the size and position of numbers
- Count back in ones and tens
- Know number facts for all numbers to 20
- Subtract multiples of 10 from any number
- Partition and recombine numbers (partition the number to be subtracted)
- Bridge through 10



Models and Images

- Counting apparatus
- Place value apparatus
- Place value cards
- Number tracks
- Numbered number lines
- Empty number lines
- Hundred square
- Counting stick
- Bead string
- Models and Images charts
- ITPs-Number Facts, Counting on and back in ones and tens, Difference



Key Vocabulary

- Subtract
- Take away
- Minus
- Count back
- Less
- Fewer
- Difference between

count back take away
 fewer subtract
 minus less
 difference between

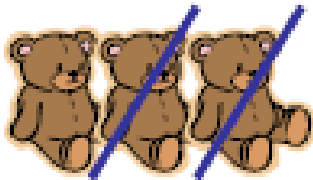
Begin to count backwards in familiar contexts such as number rhymes or stories.



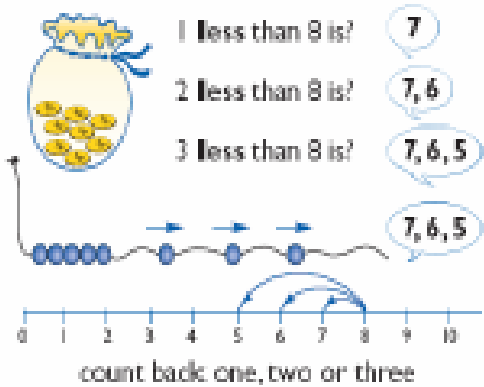
10, 9, 8, 7 ...

Continue the count back in ones from any given number.

Begin to relate subtraction to 'taking away'.



Three teddies **take away** two teddies leaves one teddy.

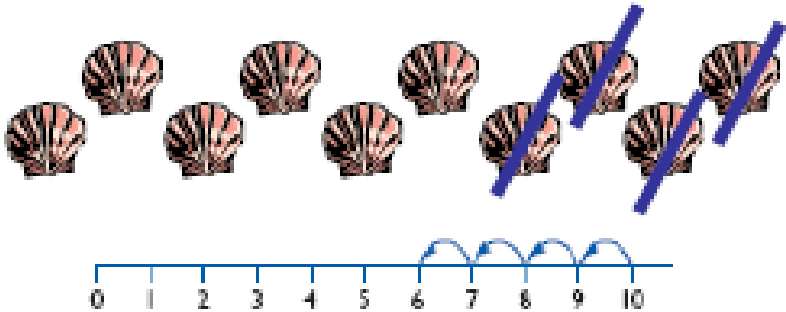


Find one less than a number.



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

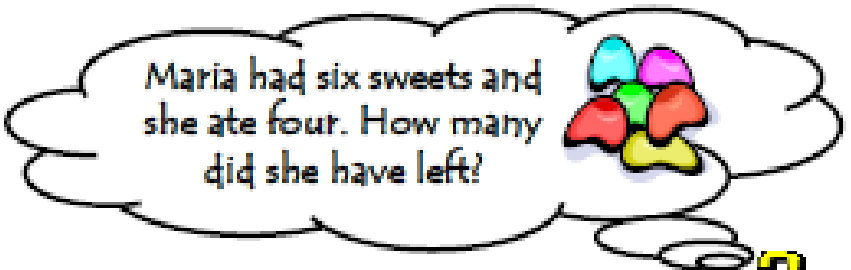
Count back in tens.



If I **take away** four shells there are six left

Count backwards along a number line to 'take away'.

Begin to use the - and = signs to record mental calculations in a number sentence.



$$6 - 4 = 2$$



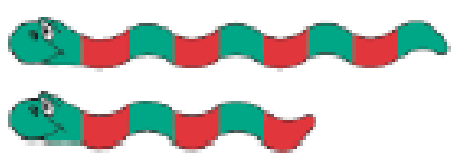
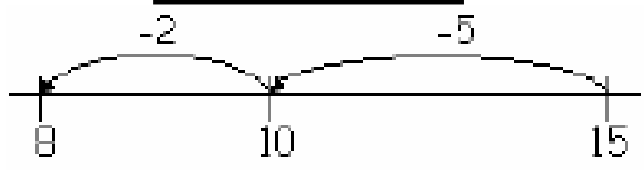
$6 + ? = 10$ $? + 6 = 10$
 $10 - 6 = ?$ $10 - 4 = 6$

$20 - 12 + 8$ $8 + 12 = 20$
 $20 - 8 = 12$ $20 - 12 = 8$

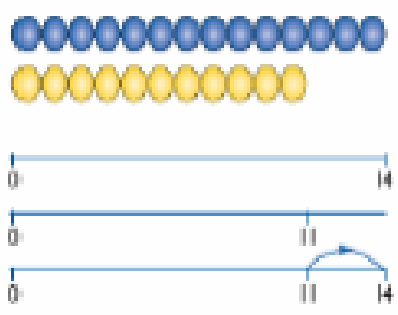
Know by heart subtraction facts for numbers up to 10 and 20.

Subtract single digit numbers often bridging through 10.

$$15 - 7 = 8$$



The difference is!



The difference between 11 and 14 is 3.
 $14 - 11 = 3$
 $11 + ? = 14$

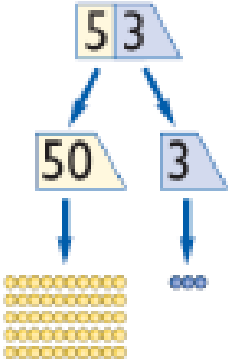
Begin to find the difference by counting up from the smallest number.

15	
6	?

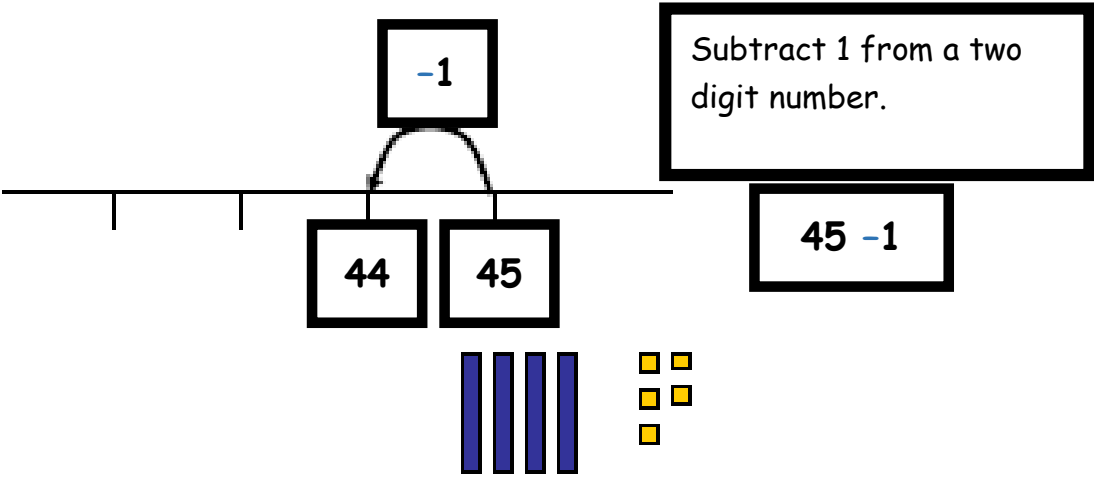
15	
?	9

Bar model can be used to show relationships:
 $6 + 9 = 15$
 $9 + 6 = 15$
 $15 - 6 = 9$
 $15 - 9 = 6$

Begin to partition numbers in order to take away.



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

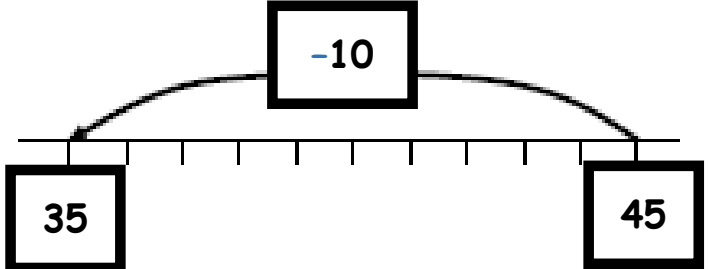


Subtract 1 from a two digit number.

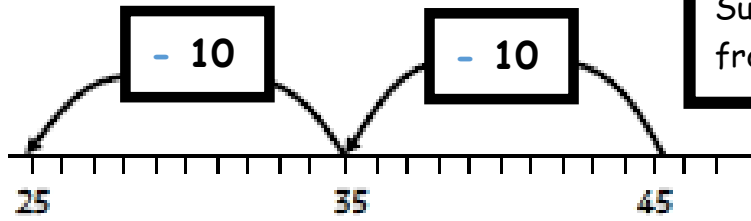
Subtract 10 from a two digit number.

$$45 - 10$$

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



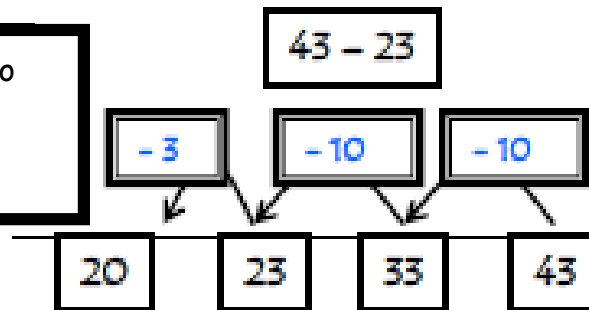
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Subtract multiples of 10 from any number.

$$45 - 20$$

Partition the number to be subtracted (no exchanging).

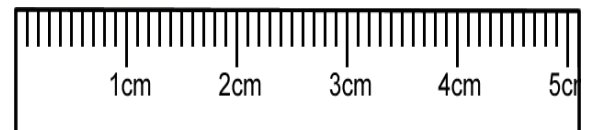


$$43 - 20 = 23$$

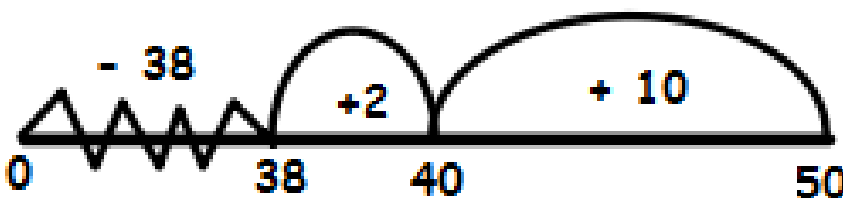
$$23 - 3 = 20$$

Understand why we can count on forwards to subtract.

Be able to tell the story about why zero is there and why we can rip off/subtract the amount we are subtracting to see how much is left.

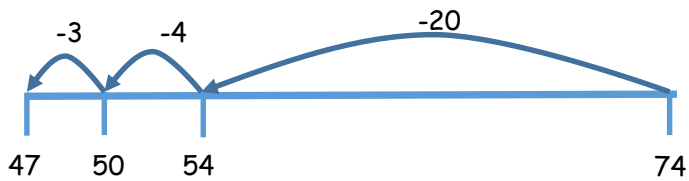


$$50 - 38 =$$



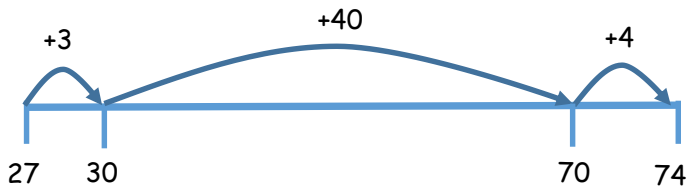
Make links to difference and how many more/less.

Key Stage 2

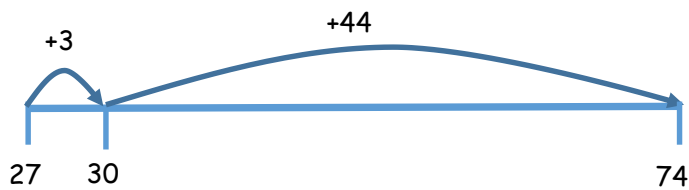


Decide whether to count on or count back.

$$74 - 27 = 47$$

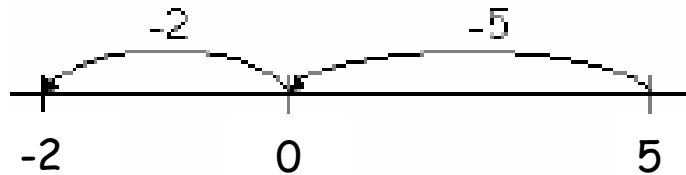


Now what's the answer?



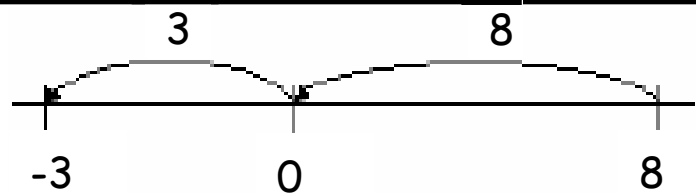
Bridge through zero for subtractions resulting in a negative number.

$$5 - 7 = -2$$



Work out the difference between a positive and negative number.

What's the difference between 8 and -3?



Partitioning number to be subtracted-with exchanging (links to counting back on number line).

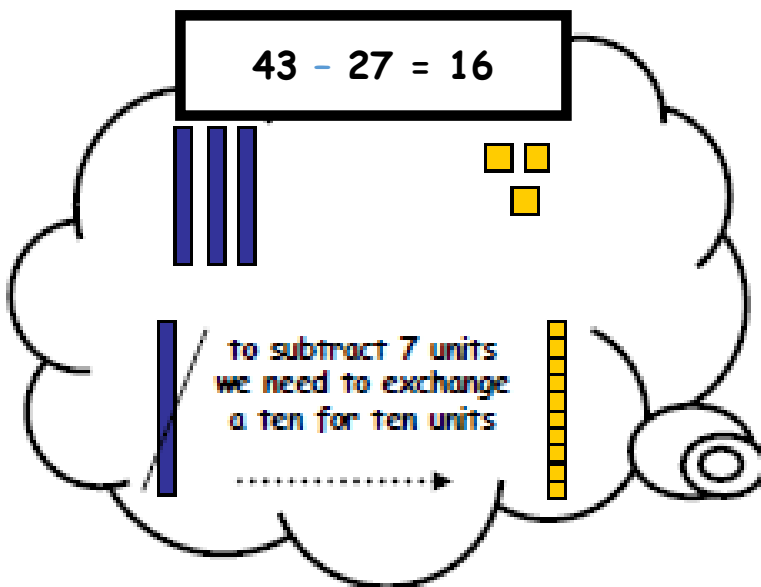


$$43 - 27 = 16$$

$$43 - 20 = 23$$

$$23 - 7 = 16$$

$$43 - 27 = 16$$



T	U
- 2	7

Expanded method

It is important that the children have a good understanding of place value and partitioning using concrete resources and visual images to support calculations. The expanded methods enables children to see what happens to numbers in the standard written method.

$$\begin{array}{r}
 30 \quad \cancel{40} + 10 + 3 \\
 - 20 + 7 \\
 \hline
 10 + 6
 \end{array}$$

Standard written method

The previous stages reinforce what happens to numbers when they are subtracted using more formal written methods. It is important that the children have a good understanding of place value and partitioning.

$$\begin{array}{r}
 3 \quad \cancel{4} \quad 13 \\
 - 27 \\
 \hline
 16
 \end{array}$$