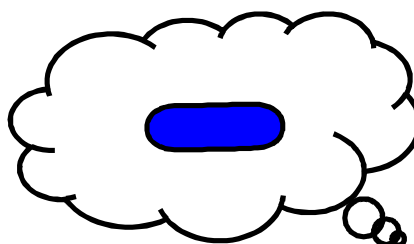


## Progression in Teaching Subtraction

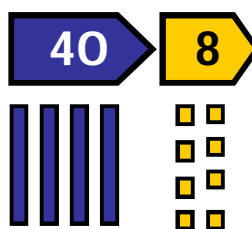
### Mental Skills

- 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 (only partition the number to be subtracted)
- Bridge through 10
- Count on from the smaller number



### Equipment

- Place value apparatus
- Place value cards
- Number tracks
- Numbered number lines
- Marked but unnumbered lines
- Hundred square
- Empty number lines.
- Counting stick
- Bead strings



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



### Key Vocabulary

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

count back   take away

fewer   subtract

minus   less

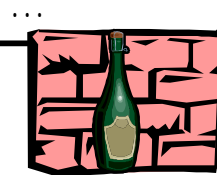
difference between

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

Five fat sausages frying in a pan ...



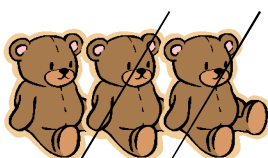
Ten green bottles hanging on the wall



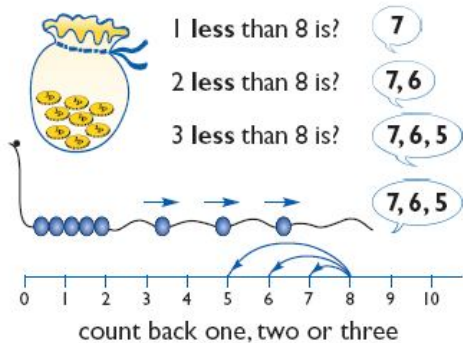
10, 9, 8, 7 ...

Continue the count back in ones from any given number

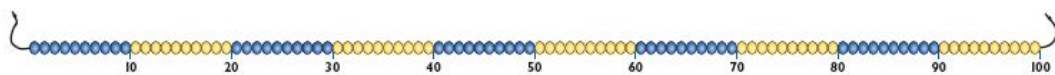
Begin to relate subtraction to 'taking away'



Three teddies take away two teddies leaves one teddy



Find one less than a number



Count back in tens

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



If I take away four shells there are six left



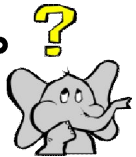
Count backwards along a number line to 'take away'

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

Maria had six sweets and she ate four. How many did she have left?



$$6 - 4 = 2$$



$$6 + ? = 10$$

$$10 - 6 = ?$$



$$? + 6 = 10$$

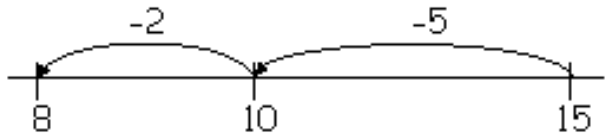
$$10 - 4 = 6$$

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

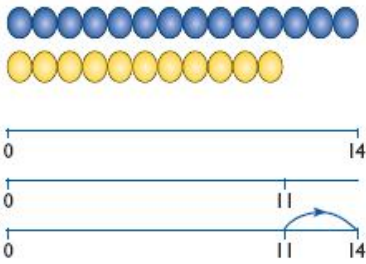
Know by heart subtraction facts for numbers up to 10 and 20

$$15 - 7 = 8$$

Subtract single digit numbers often bridging through 10



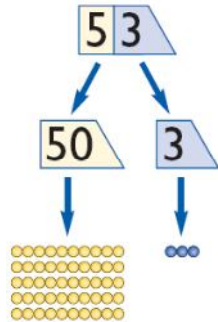
The difference is?



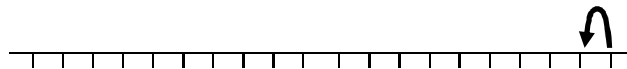
The difference between 11 and 14 is 3.  
 $14 - 11 = 3$   
 $11 + \square = 14$

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

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
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91	92	93	94	95	96	97	98	99	100

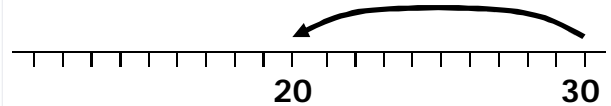


$$45 - 1$$

Subtract 1 from a two-digit number

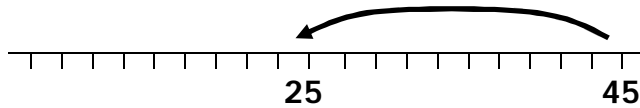
Subtract 10 from a two-digit number

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
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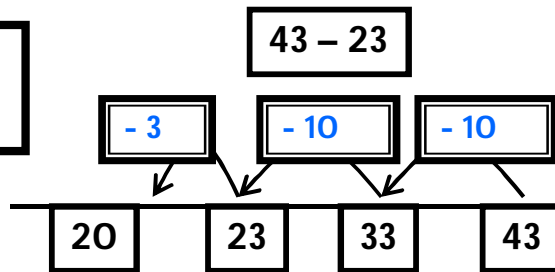
$$30 - 10 = 20$$

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

Partition the number to be subtracted (no exchanging)



$$43 - 23$$

$$- 3$$

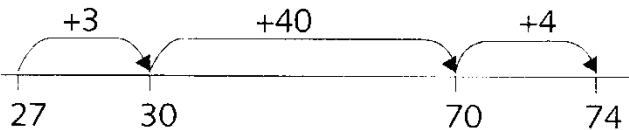
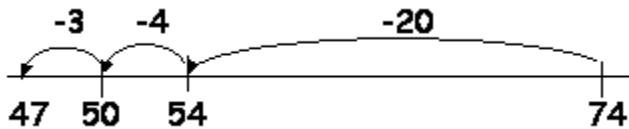
$$- 10$$

$$- 10$$

43 - 20 = 23

23 - 3 = 20

Decide whether to count on or count back



$$74 - 27 = 47$$

Now where's the answer?

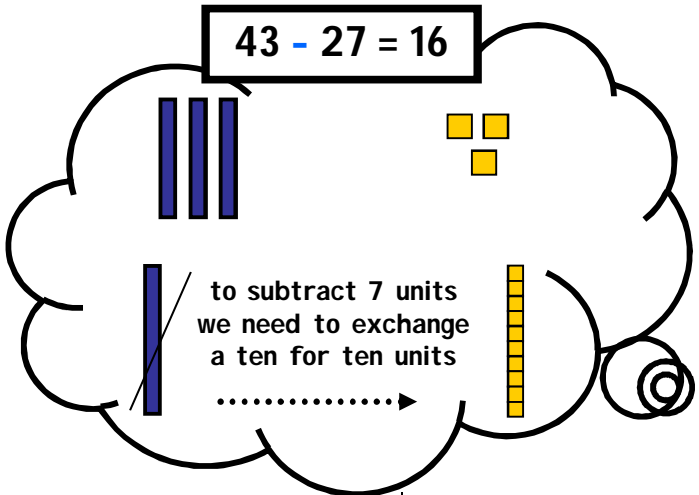
Partitioning number to be subtracted - with exchanging (links to counting back on number line)



$$43 - 27 = 16$$

$$43 - 20 = 23$$

$$23 - 7 = 16$$



$$43 - 27 = 16$$

**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 method enables children to see what happens to numbers in the standard written method.

T	U
$- 2$	$7$

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

**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.

$$\begin{array}{r}
 \overset{3}{\cancel{4}} \overset{1}{3} \\
 - 27 \\
 \hline
 16
 \end{array}$$