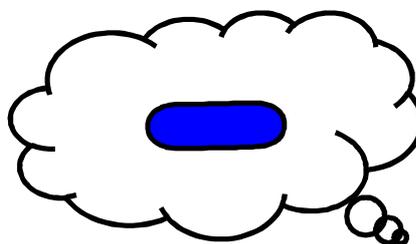


Progression in Teaching Subtraction

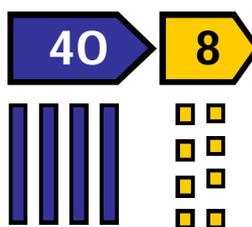
Mental Skills

- 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

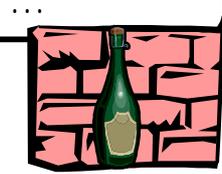
count back take away
 fewer subtract
 minus less
 difference between

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

Five fat sausages frying in a pan ...



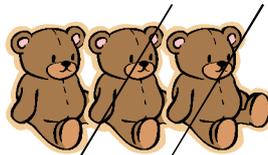
Ten green bottles hanging on the wall



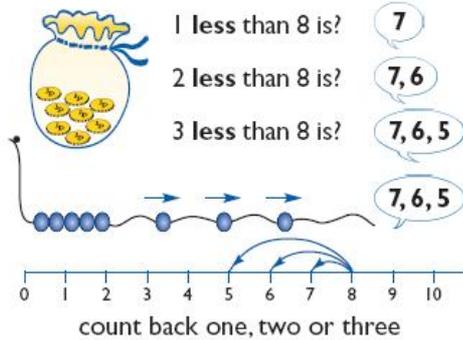
10, 9, 8, 7 ...

Continue the count back in ones from any given number

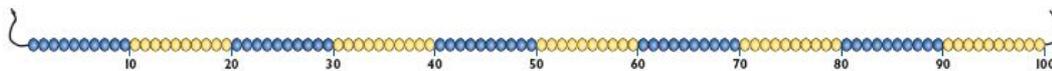
Begin to relate subtraction to 'taking away'



Three teddies take away two teddies leaves one teddy

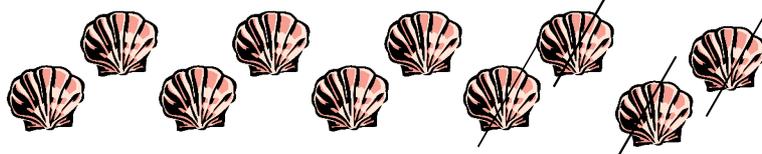


Find one less than a number



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?



$$6 - 4 = 2$$



$$6 + ? = 10$$

$$10 - 6 = ?$$

$$? + 6 = 10$$

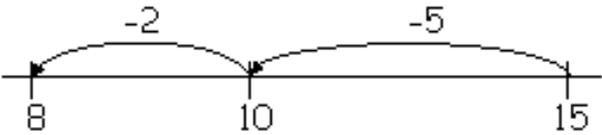
$$10 - 4 = 6$$

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

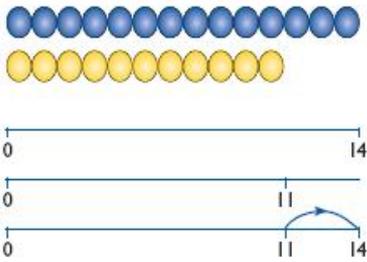
Know by heart subtraction facts for numbers up to 10 and 20

$$15 - 7 = 8$$

Subtract single digit numbers often bridging through 10



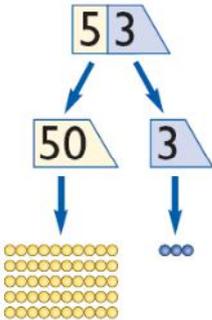
The difference is?



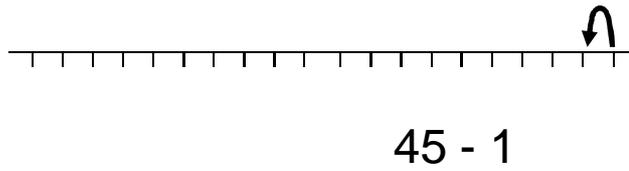
The difference between 11 and 14 is 3.
 $14 - 11 = 3$
 $11 + \square = 14$

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
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

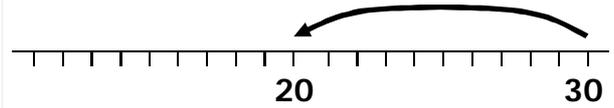


Subtract 1 from a two-digit number

$$45 - 1$$

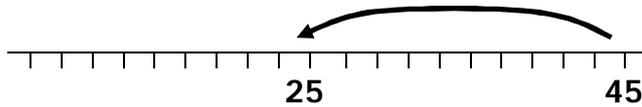
Subtract 10 from a two-digit number

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
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



20 30

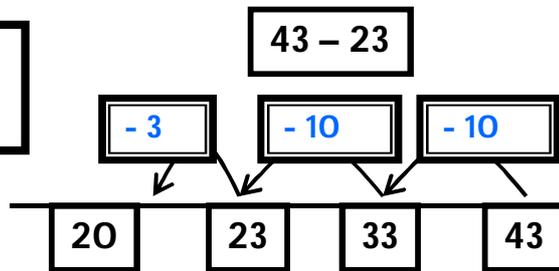
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Subtract multiples of 10 from any number

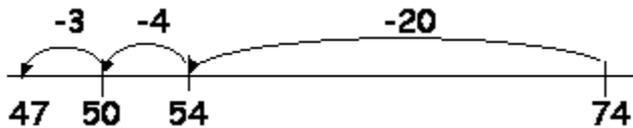
25 45

Partition the number to be subtracted (no exchanging)

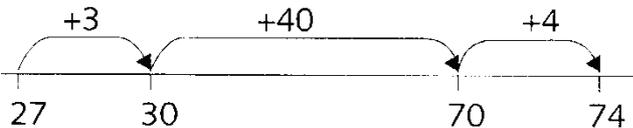


$43 - 20 = 23$
 $23 - 3 = 20$

Decide whether to count on or count back



$$74 - 27 = 47$$



Now where's the answer?

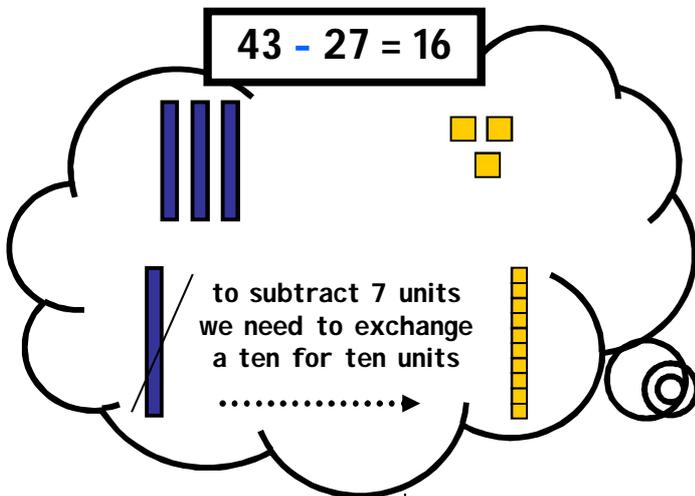
Partitioning number to be subtracted - with exchanging (links to counting back on number line)



$$43 - 27 = 16$$

$$43 - 20 = 23$$

$$23 - 7 = 16$$



$$43 - 27 = 16$$

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.

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