

Subtraction

Concrete resources:

- 100 square
- Number lines
- Bead strings
- Straws
- Dienes
- Counting stick
- Place value dice
- Place value cards
- Place value counters



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
 count on count back
 fewer ——— less
 take away minus
 difference



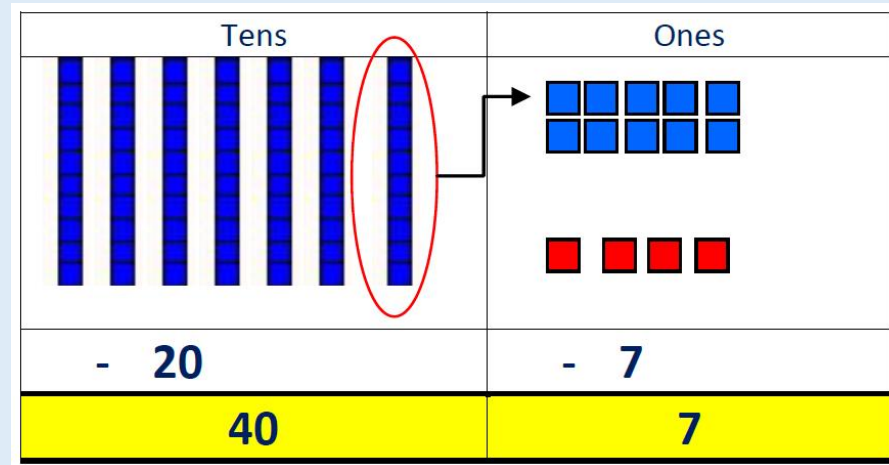
Subtraction: Year 3

Progress to using the expanded column method with place value resources to support the conceptual understanding of subtracting numbers with up to three digits *with exchanging tens and/or hundreds*.

$$74 - 27 = 47$$

$\begin{array}{r} 60 \\ 70 \\ - 20 \\ \hline 40 \end{array}$	$\begin{array}{r} 14 \\ 4 \\ 7 \\ \hline 7 \end{array}$
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OR



In this example to subtract 7 ones from 4 ones we need to **exchange** a ten for ten ones. We now can subtract 7 ones from 14 ones.

Extend to using the expanded column method to subtract three digit numbers from three digit numbers.

$$537 - 254 = 283$$

$\begin{array}{r} 400 \\ 500 \\ - 200 \\ \hline 200 \end{array}$	$\begin{array}{r} 130 \\ 30 \\ 50 \\ \hline 80 \end{array}$	$\begin{array}{r} 7 \\ 4 \\ \hline 3 \end{array}$
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Note: The exchanged ten or hundred is just as important as any other number, therefore, it should be written as clear and as large as any other number, and placed at the **top** of the column which has been adjusted.

Subtraction: Year 4

Year 4 statutory requirements:

- Find 1000 less than a given number.
- Subtract numbers with up to four digits, using formal written methods of columnar subtraction where appropriate.
- Solve subtraction two-step problems in contexts, deciding which operations and methods to use and why.

Build on learning from Year 3 and model how expanded method links to compact column subtraction method.

$ \begin{array}{r} 60 + 14 \\ \cancel{70} + \cancel{4} \\ - \quad \quad \\ \hline 20 + 7 \\ \hline 40 + 7 \end{array} $	→	$ \begin{array}{r} 6 \\ \cancel{7}^1 4 \\ \quad \quad \\ \hline 27 \\ \hline 47 \end{array} $	→	$ \begin{array}{r} 400 + 130 \\ \cancel{500} + \cancel{30} + 7 \\ - \quad \quad \quad \quad \\ \hline 200 + 50 + 4 \\ \hline 200 + 80 + 3 \end{array} $	→	$ \begin{array}{r} 4 \\ \cancel{5}^1 \cancel{3} 7 \\ - \quad \quad \quad \quad \\ \hline 254 \\ \hline 283 \end{array} $
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By the end of year 4, pupils should be subtracting numbers up to 4 digits using compact column subtraction method.

$$\begin{array}{r}
 3 \\
 4^1 2 \\
 - 1 2 9 \\
 \hline
 6 1 3
 \end{array}$$

Note: The exchanged ten or hundred is just as important as any other number, therefore, it should be written as clear and as large as any other number, and placed at the **top** of the column which has been adjusted.

Subtraction: Year 5 & 6

Year 5 statutory requirements :

- Subtract whole numbers with more than 4 digits using formal written methods of columnar subtraction.
- Subtract numbers mentally, with increasingly large numbers.
- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
- Solve problems involving numbers up to three decimal places.

Year 6 statutory requirements: pupils are expected to solve more complex addition and subtraction problems

In year 5 and 6 pupils should be subtracting numbers using compact column subtraction method. **Note:** The exchanged ten or hundred is just as important as any other number. Therefore, it should be written as clear and as large as any other number, and placed at the **top** of the column which has been adjusted.

$$\begin{array}{r}
 8 \qquad \qquad \qquad 7 \\
 \cancel{9} \quad ^1 6 \quad 7 \quad \cancel{8} \quad ^1 3 \\
 - \\
 \hline
 5 \quad 8 \quad 7 \quad 3 \quad 5 \\
 \hline
 3 \quad 8 \quad 0 \quad 4 \quad 8
 \end{array}$$

When subtracting decimals, it is essential that the decimal point does not move and kept in line.

Where necessary, a zero should be added as a *place holder*.

$$\begin{array}{r}
 4 \\
 \cancel{5} \cdot ^1 3 \quad 7 \\
 - 2 \cdot 5 \quad 4 \\
 \hline
 2 \cdot 8 \quad 3
 \end{array}$$

	1	10	15	.	4	11	9	kg
-		3	6	.	0	8	0	kg
		6	9	.	3	3	9	kg