

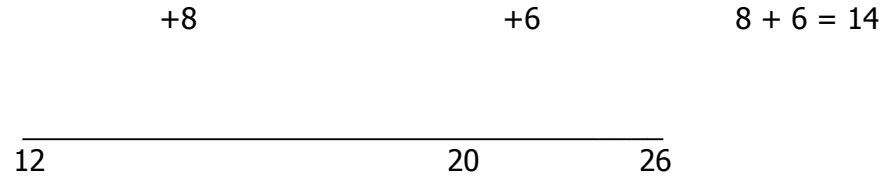
Subtraction

Year Group: Key Objectives	Written Strategies	Representations/Vocabulary
<p>Year 1:</p> <ul style="list-style-type: none"> ✓ represent and use number bonds and related subtraction facts within 20 ✓ Subtract one-digit and two-digit numbers to 20, including zero ✓ Solve one-step problems that involve subtraction, using concrete objects and pictorial representations, and missing number problems such as $7 = _ - 9$. 	<p><u>Activities/recording</u> Practical Apparatus, coins, Numicon etc. Number lines – what is the difference between 5 and 9?</p> <p><i>Use a number line to count back</i></p> <div style="text-align: center; margin: 10px 0;"> $-1 \qquad -1 \qquad -1 \qquad -1 \qquad -1$ </div> <hr style="width: 100%;"/> <div style="text-align: center; margin: 10px 0;"> $4 \qquad 5 \qquad 6 \qquad 7 \qquad 8 \qquad 9$ </div> <p><i>Use a number line to count on</i></p> <div style="text-align: center; margin: 10px 0;"> $+1 \qquad +1 \qquad +1 \qquad +1$ </div> <hr style="width: 100%;"/> <div style="text-align: center; margin: 10px 0;"> $5 \qquad 6 \qquad 7 \qquad 8 \qquad 9$ </div>	<p>Number line, Number track, 100 square, Deines apparatus, Numicon, Coins and notes, Practical apparatus e.g. counters, Number mobiles, Pictorial representations of problems, Dominoes,</p> <p>Calculation, subtraction, take, take away, distance between, equals, is equal to, is the same as, difference, count back, how many more/less</p>
<p>Year 2:</p> <ul style="list-style-type: none"> ✓ Solve problems with subtraction: <ul style="list-style-type: none"> - Using concrete objects and pictorial representations, including those involving numbers, quantities and measures - Applying their increasing knowledge of mental and written methods ✓ Recall and use subtraction facts to 20 fluently, and derive and use related facts up to 100 ✓ Subtract numbers using concrete objects, pictorial representations, 	<p><u>Activities/Recording</u> Continue to develop understanding using practical apparatus. Children need to be secure with their knowledge of number bonds and place value before moving on to the next stage. They also need to be secure at partitioning and recombining numbers. They would use a number line to count on and back more efficiently than in Year 1.</p> <p style="padding-left: 40px;">e.g. $26 - 12 =$</p> <p><i>Counting back</i></p> <div style="text-align: center; margin: 10px 0;"> $-2 \qquad -10$ </div> <hr style="width: 100%;"/> <div style="text-align: center; margin: 10px 0;"> $14 \qquad 16 \qquad 26$ </div>	<p>As above plus: Arrow Cards (TU), Column representations of Tens and Units, Models of written and mental strategies used for calculation, Numbers partitioned in different ways e.g. $23 = 20 + 3 = 10 + 13$, meanings of $< > =$,</p> <p>As above plus: tens, ones, change, columns, place value, boundary, partition, method, strategy,</p>

and mentally, including:

- a two-digit number and ones
- a two-digit number and tens
- two two-digit numbers
- adding three one-digit numbers

Counting on

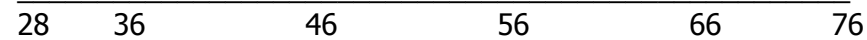


Use a number line to count on and back using larger two-digit numbers. Children need a lot of practice in counting forwards and back in different steps before they will be able to cope with this stage.

e.g. $76 - 48 =$

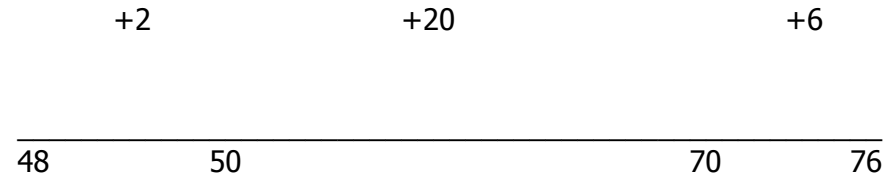
Counting back

- 8 -10 -10 -10 -10



This would be refined to larger jumps as appropriate to the child's ability, e.g. -40 in one go.

Counting on



Children may also partition easy numbers and record them in an informal way e.g.

$$\begin{array}{l} 76 - 28 = 76 - 20 - 8 \\ \quad = 56 - 8 \\ \quad = 50 - 2 \\ \quad = 48 \end{array} \quad \text{or} \quad \begin{array}{l} 76 - 28 = 70 - 22 \\ \quad = 50 - 2 \\ \quad = 48 \end{array}$$

or $76 - 28 = 76 - 30 + 2$
 $\quad = 46 + 2$
 $\quad = 48$

inverse, inverse operation, calculate

<p>Year 3:</p> <ul style="list-style-type: none"> ✓ Subtract numbers with up to three digits, using formal written methods of columnar subtraction ✓ Subtract numbers mentally, including: <ul style="list-style-type: none"> - A three digit number and ones - A three digit number and tens - A three digit number and hundreds 	<p><u>Recording</u> Moving to decomposition – Number lines are an effective and useful strategy to use to subtract/find the difference. Children should move towards decomposition methods if they are secure with using number lines and can return to that strategy if they do not understand decomposition. Children should begin by partitioning numbers as this will support the development of the decomposition compact method of subtraction.</p> <p>e.g. $88 - 56 =$</p> $\begin{array}{r} 80 \quad 8 \\ - 50 \quad 6 \\ \hline 30 \quad 2 \end{array} = 32$ <p>Children also need to be able to partition numbers in different ways to be able to cope with different calculations.</p> <p>e.g. $54 = 50 + 4 = 40 + 14 = 30 + 24 = 20 + 34$ etc.</p> <p>$540 = 500 + 40 = 400 + 140 = 300 + 240$ etc.</p> <p>This will enable the children to 'exchange' tens for units, hundreds for tens etc. more easily. This should be modelled using practical equipment (deines, Numicon) and visual representations</p> <p>e.g. $88 - 49 =$</p> $\begin{array}{r} 80 \quad 8 \\ - 40 \quad 9 \\ \hline \end{array} \rightarrow \begin{array}{r} 70 \quad 18 \\ - 40 \quad 9 \\ \hline 30 \quad 9 \end{array} = 39$ <p>e.g. $754 - 268 =$</p> $\begin{array}{r} 700 \quad 50 \quad 4 \\ - 200 \quad 60 \quad 8 \\ \hline \end{array} \rightarrow \begin{array}{r} 600 \quad 140 \quad 14 \\ - 200 \quad 60 \quad 8 \\ \hline 400 \quad 80 \quad 6 \end{array} = 486$	<p>As above plus: Arrow Cards (HTU), models of column subtraction strategies, Number lines marked in tenths,</p> <p>As above plus: Hundreds, tenths, decimal, decimal point, decimal place, Increase, decrease, plus, minus, adjust</p>
<p>Year 4:</p> <ul style="list-style-type: none"> ✓ Subtract numbers with up to 4 digits using the formal written methods of columnar subtraction where appropriate 	<p><u>Recording</u> Partitioning may continue for children who still need reinforcement of place value and who may still be very reliant on other resources e.g. arrow cards, deines etc.):</p>	<p>As above plus: Arrow Cards (ThHTU), models of column subtraction strategies, Number lines</p>

