

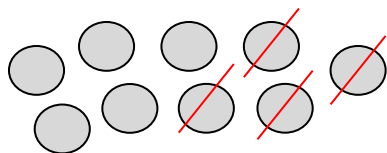
**Stage 1:**

**End of Stage Objective:** Using quantities and objects, children subtract two single-digit numbers and count on or back to find the answer.

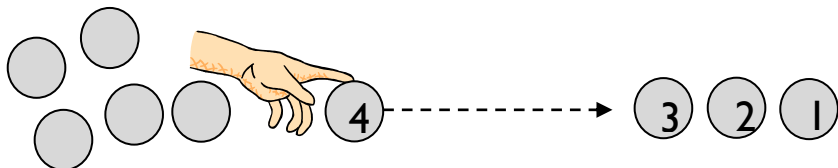
Children are encouraged to develop a mental picture of the number system in their heads to use for calculation. They should experience practical calculation opportunities using a wide variety of equipment, e.g. small world play, role play, counters, cubes etc. They develop ways of recording calculations using pictures, etc.

**Taking away**

Children will begin to develop their ability to subtract by using practical equipment to count out the first number and then remove or take away the second number to find the solution by counting how many are left e.g.  $9 - 4$ .

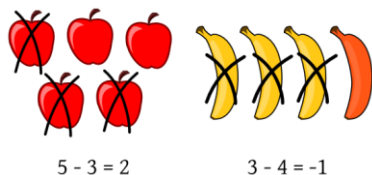


For illustration purposes, the amount being taken away are show crossed out. Children would be encouraged to physically remove these using touch counting.



By touch counting and dragging in this way, it allows children to keep track of how many they are removing so they don't have to keep recounting. They will then touch count the amount that are left to find the answer.

**Those who are ready** may record their own calculations by drawing pictures/jottings.



**Stage 2:**

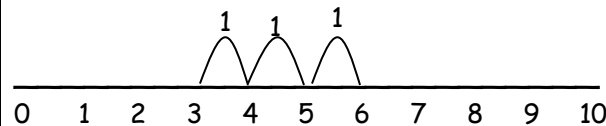
**End of Stage Objective:** Subtract one-digit and two-digit numbers to 20, including zero (using concrete objects, pictorial representations and number lines).

Children continue to use practical resources, such as counters, cubes and the units from the Base 10 equipment.



They will then use number lines and to support calculation. Teachers demonstrate the use of the number line.

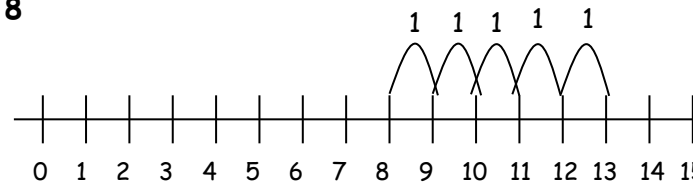
$6 - 3 = 3$



The number line should also be used to show that  $6 - 3$  means the 'difference between 6 and 3' or 'the difference between 3 and 6' and how many jumps they are apart.

Children then begin to use number lines to support their own calculations - using a numbered line to count back in ones.

$13 - 5 = 8$



Bead strings or bead bars can be used to illustrate subtraction including bridging through ten by counting back 3 then counting back 2.

$13 - 5 = 8$



**Stage 2:**

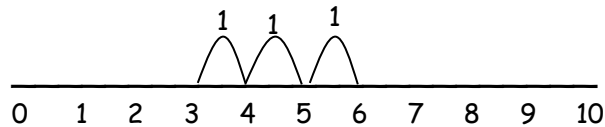
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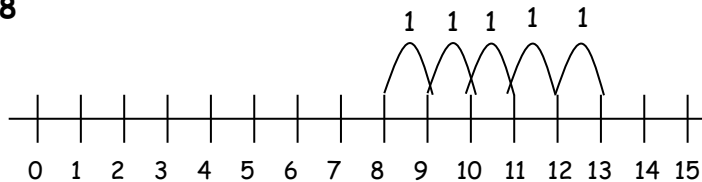
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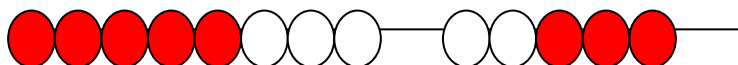
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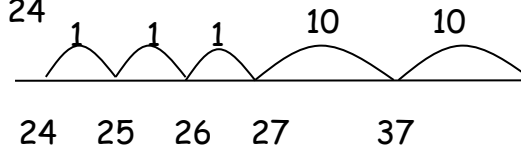
**Stage 3:**

**End of Stage Objective: Subtract numbers using empty number lines, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers and a three-digit number and a two-digit number.**

The children will use lots of practical equipment such as coins, rods and cubes before using the empty number lines to support calculations.

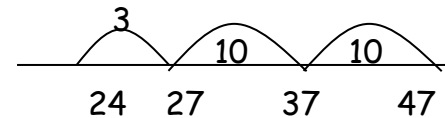
- First counting back in tens and ones.

$47 - 23 = 24$



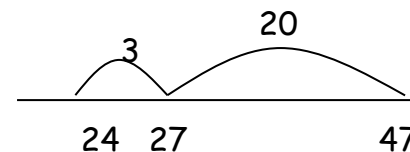
- Then helping children to become more efficient by subtracting the units in one jump (by using the known fact  $7 - 3 = 4$ ).

$47 - 23 = 24$



- Subtracting the tens in one jump and the units in one jump.

$47 - 23 = 24$

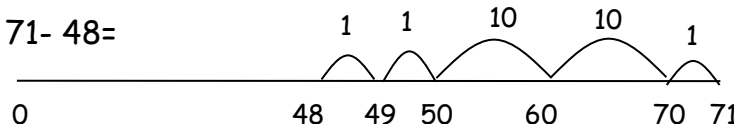


**Counting on / finding a difference**

If the numbers involved in the calculation are close together or near to multiples of 10, 100 etc, it can be more efficient to count on.

Count up from 57 to 82 in jumps of 10 and jumps of 1.

$71 - 48 =$



Children will continue to count back and forward using empty number lines with increasingly large numbers, e.g.  $102 - 89 = 13$

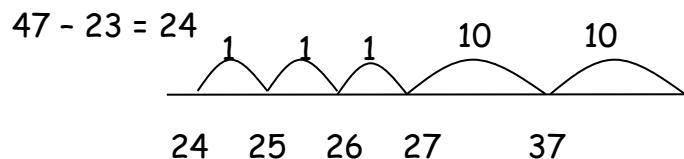
The methods above can be used and applied to include **3 digit numbers**- children should still be encouraged to go to the nearest 10, then the nearest 100 so that then it is easier for the children to count on.

**Stage 3:**

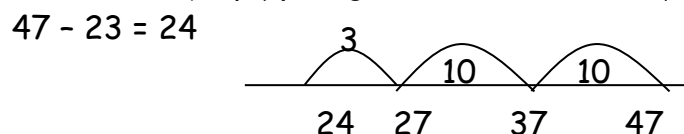
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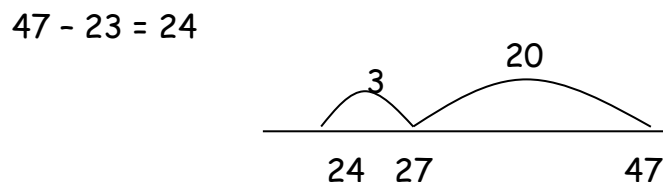
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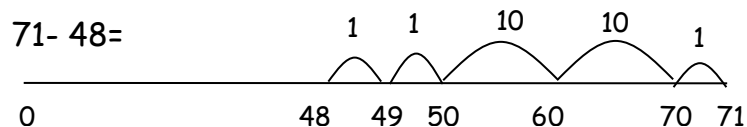
- Subtracting the tens in one jump and the units in one jump.



**Counting on / finding a difference**

If the numbers involved in the calculation are close together or near to multiples of 10, 100 etc, it can be more efficient to count on.

Count up from 57 to 82 in jumps of 10 and jumps of 1.



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The methods above can be used and applied to include **3 digit numbers**- children should still be encouraged to go to the nearest 10, then the nearest 100 so that then it is easier for the children to count on.

**Stage 4:**

**End of Stage Objective: Subtract numbers with up to 4 digits and decimals with one decimal place using the formal written method of columnar subtraction where appropriate.**

Initially the children will use an expanded version of column subtraction, with the emphasis being on understanding exchanging. Dienes can be used to reinforce this at first. The example below can be applied exactly the same for 2, 3 and 4 digit numbers as well as numbers with one decimal place.

Step 1

$$\begin{array}{r} 700 \rightarrow 50 \rightarrow 4 \\ - 200 \rightarrow 80 \rightarrow 6 \\ \hline \end{array}$$

Step 3 (exchanging from hundreds to tens)

$$\begin{array}{r} 600 \quad 140 \\ \cancel{7}00 \rightarrow \cancel{5}0 \rightarrow '4 \\ - 200 \rightarrow 80 \rightarrow 6 \\ \hline \end{array}$$

This would be recorded by the children as:

$$\begin{array}{r} 600 \quad 140 \\ \cancel{7}00 \rightarrow \cancel{5}0 \rightarrow '4 \\ - 200 \rightarrow 80 \rightarrow 6 \\ \hline 400 \rightarrow 60 \rightarrow 8 = 468 \end{array}$$

Step 2 (exchanging from tens to units)

$$\begin{array}{r} 700 \rightarrow \overset{40}{\cancel{5}0} \rightarrow '4 \\ - 200 \rightarrow 80 \rightarrow 6 \\ \hline \end{array}$$

Step 4

$$\begin{array}{r} 600 \quad 140 \\ \cancel{7}00 \rightarrow \cancel{5}0 \rightarrow '4 \\ - 200 \rightarrow 80 \rightarrow 6 \\ \hline 400 \rightarrow 60 \rightarrow 8 = 468 \end{array}$$

When children are ready, this leads on to the compact method of decomposition, with or without exchanging, e.g.

$874 - 523$  becomes

$$\begin{array}{r} 874 \\ - 523 \\ \hline 351 \end{array}$$

Answer: 351

$932 - 457$  becomes

$$\begin{array}{r} 8 \quad 12 \quad 1 \\ \cancel{9} \quad \cancel{3} \quad 2 \\ - 4 \quad 5 \quad 7 \\ \hline 475 \end{array}$$

Answer: 475

By the end of stage 4, children should be using the written method confidently and with understanding. They will also be subtracting:

- numbers with different numbers of digits, understanding the place value;
- decimals with one decimal place, knowing that the decimal points line up under one another.

**Stage 4:**

**End of Stage Objective:**  
 Subtract numbers with up to 4 digits *and decimals with one decimal place* using the formal written method of columnar subtraction where appropriate.

Initially the children will use an expanded version of column subtraction, with the emphasis being on understanding exchanging. Dienes can be used to reinforce this at first. The example below can be applied exactly the same for 2, 3 and 4 digit numbers as well as numbers with one decimal place.

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$$\begin{array}{r} 700 \rightarrow 50 \rightarrow 4 \\ - 200 \rightarrow 80 \rightarrow 6 \\ \hline \end{array}$$

Step 2 (exchanging from tens to units)

$$\begin{array}{r} 700 \rightarrow \overset{40}{50} \rightarrow \overset{1}{4} \\ - 200 \rightarrow 80 \rightarrow 6 \\ \hline \end{array}$$

Step 3 (exchanging from hundreds to tens)

$$\begin{array}{r} \overset{600}{700} \rightarrow \overset{140}{50} \rightarrow \overset{1}{4} \\ - 200 \rightarrow 80 \rightarrow 6 \\ \hline \end{array}$$

Step 4

$$\begin{array}{r} \overset{600}{700} \rightarrow \overset{140}{50} \rightarrow \overset{1}{4} \\ - 200 \rightarrow 80 \rightarrow 6 \\ \hline 400 \rightarrow 60 \rightarrow 8 = 468 \end{array}$$

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By the end of stage 4, children should be using the written method confidently and with understanding. They will also be subtracting:

- numbers with different numbers of digits, understanding the place value;
- *decimals with one decimal place, knowing that the decimal points line up under one another.*

**Stage 5:**

**End of Stage Objective:**  
 Subtract whole numbers with more than 4 digits *and decimals with two decimal places*, including formal written methods (columnar subtraction).

Children should continue to use the decomposition method to solve calculations such as:

$$\begin{array}{r} \overset{6}{7} \overset{10}{0} \overset{6}{7} \overset{1}{2} \\ - 3 \ 2 \ 2 \ 6 \\ \hline 3 \ 8 \ 4 \ 6 \end{array}$$

$$\begin{array}{r} \overset{2}{3} \overset{13}{4} \overset{1}{2} \\ - 1 \ . \ 7 \ 6 \\ \hline 1 \ . \ 6 \ 6 \end{array}$$

They will also be subtracting:

- numbers with different numbers of digits, understanding the place value;
- *decimals with up to two decimal places (with each number having the same number of decimal places), knowing that the decimal points line up under one another.*
- amounts of money and measures, including those where they have to initially convert from one unit to another

**Stage 5:**

**End of Stage Objective:**  
Subtract whole numbers with more than 4 digits *and decimals with two decimal places*, including formal written methods (columnar subtraction).

Children should continue to use the decomposition method to solve calculations such as:

$$\begin{array}{r} \overset{6}{7} \overset{6}{10} \overset{6}{7} \overset{6}{12} \\ - 3 \ 2 \ 2 \ 6 \\ \hline 3 \ 8 \ 4 \ 6 \end{array}$$

$$\begin{array}{r} \overset{2}{3} \overset{13}{4} \overset{12}{12} \\ - 1 \ . \ 7 \ 6 \\ \hline 1 \ . \ 6 \ 6 \end{array}$$

They will also be subtracting:

- numbers with different numbers of digits, understanding the place value;
- *decimals with up to two decimal places (with each number having the same number of decimal places), knowing that the decimal points line up under one another.*
- amounts of money and measures, including those where they have to initially convert from one unit to another.

**Stage 6:**

**End of Stage Objective:**  
Subtract whole numbers and decimals using formal written methods (columnar subtraction).

Children should extend the decomposition method and use it to subtract whole numbers and decimals with any number of digits.

$$\begin{array}{r} \overset{5}{6} \overset{13}{4} \overset{13}{13} \ 2 \\ - 4 \ 6 \ 8 \ 1 \\ \hline 1 \ 7 \ 5 \ 1 \end{array}$$

$$\begin{array}{r} \overset{3}{4} \overset{6}{11} \overset{11}{7} \ . \ \overset{10}{2} \ \overset{10}{0} \\ - 3 \ 4 \ . \ 7 \ 1 \\ \hline 3 \ 8 \ 2 \ . \ 4 \ 9 \end{array}$$

When subtracting decimals with different numbers of decimal places, children should be taught and encouraged to make them the same through identification that 2 tenths is the same as 20 hundredths, therefore, 0.2 is the same value as 0.20.

They will also be subtracting:

- numbers with different numbers of digits, understanding the place value;
- *decimals with up to two decimal places (with mixed numbers of decimal places), knowing that the decimal points line up under one another.*
- amounts of money and measures, including those where they have to initially convert from one unit to another.