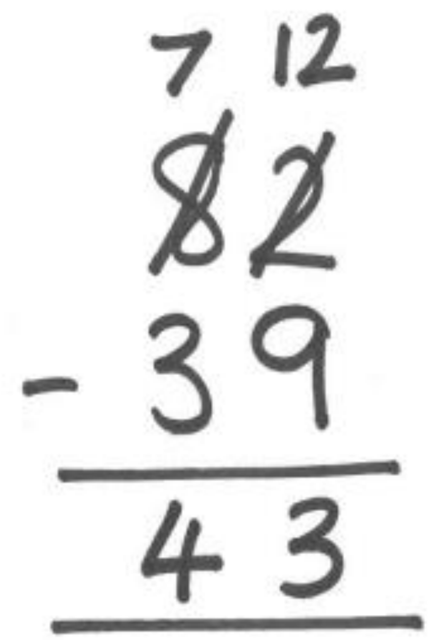
Subtraction with renaming explained

Lots of us will remember the ‘borrowing’ rule for subtraction. It works well because, even though we didn’t understand the actual mathematical reasoning behind it, as children we understood the concept of borrowing something & returning it. It was the rule and you just did it.

Today, that rule has been replaced with the concept of renaming. Modern maths continues to use this concept of hundreds, tens and units. When written down the ones are always on the left, the tens to the right of them and so on. So the number 42 is made up of 2 ones and 4 groups of ten ones. The number 942 is made up of 2 ones and 4 groups of ten ones and 9 groups of one hundred ones.

So how does this help with subtraction?

Let’s take a sum as an example; 82 – 39



Under the new method, we are no longer borrowing ten units; we are simply renaming the number. So the number 82, usually 2 ones and 8 tens, is renamed as twelve ones and 7 tens. We can then easily subtract 39 as follows; nine ones from twelve ones is three ones. Three tens from seven tens is four tens. The answer is 4 tens and 3 ones or 43.

If the top line number includes a zero. E.g. 900 – 107, then let's look at the top number first. There are no ones and there are no tens but there are 9 one hundreds. So firstly we regroup the 9 one hundreds into 8 one hundreds and 10 tens, but we still have no ones. So we then rename again into 8 one hundreds, 9 tens and 10 ones. We can then easily subtract 7 units from ten units, no tens from 9 tens and 1 one hundred from 8 one hundreds giving an answer of 7 hundreds, 9 tens and 3 ones or 793.

$$
\begin{array}{rccc}
 & & 9 & \\
 & 8 & \cancel{10} & 10 \\
 & \cancel{9} & \cancel{0} & \cancel{0} \\
- & 1 & 0 & 7 \\
\hline
 & 7 & 9 & 3 \\
\hline
\end{array}
$$

A final example with two 4 digit numbers.

We always encourage the children to cross out the original number completely and put the new number with the renaming above, as it is much clearer to see.

$$
\begin{array}{rcccc}
 & 1 & 11 & 3 & 12 \\
 & \cancel{2}, & \cancel{1} & \cancel{4} & \cancel{2} \\
- & 1, & 2 & 3 & 4 \\
\hline
 & & 9 & 0 & 8 \\
\hline
\end{array}
$$

I hope this makes sense and you find it useful.
Please let me know if you have any further questions.

Miss Snelson