

Column subtraction method

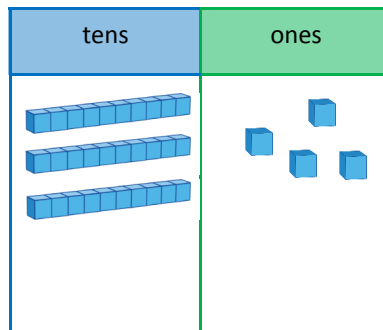
When pupils begin to solve subtraction of two 2-digit numbers in Mathematics Mastery they are introduced to the column subtraction method as a way of laying out the subtraction in columns that represent place value. This is first introduced in Year one and will continue to be used throughout pupils' primary education.

Column subtraction is a method that builds on pupils understanding of place value and different strategies including knowledge of number bonds within 20 and the 'make ten strategy'. One key misconception pupils may have when solving column addition and subtraction is to consider each digit as separate numbers rather than as representation of the number of tens or ones.

Below is a sequence for teaching how to solve subtraction using the column subtraction method, firstly without regrouping and secondly with regrouping.

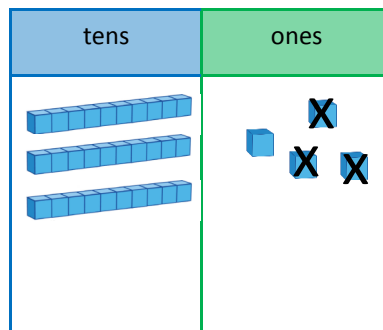
Column subtraction without regrouping

	tens	ones
	3	4
-	1	3



1. First subtract the ones

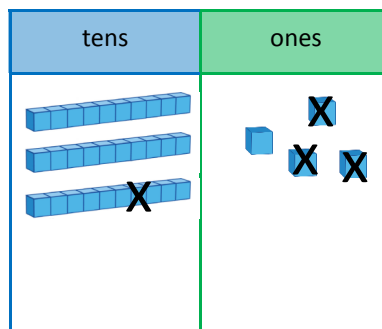
	tens	ones
	3	4
-	1	3
	2	1



4 ones - 3 ones = 1 one

2. Then subtract the tens

	tens	ones
	3	4
-	1	3
	2	1



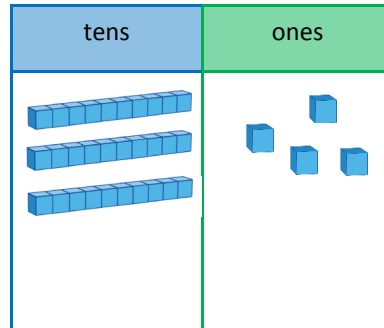
3 tens - 1 ten = 2 tens

So, 34 - 13 = 21

This written method is a very abstract representation of the equation and therefore teachers must make clear links between the written record and using manipulatives that reinforce place-value such as Dienes blocks. This must be planned for when teaching subtraction both when regrouping is and isn't required.

Column subtraction with regrouping

tens	ones
3	4
-	7
1	7



1. First subtract the ones

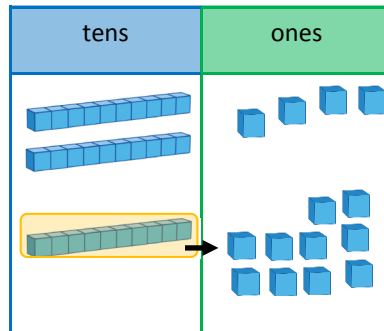
But we cannot subtract 7 ones from 4 ones.

So, we regroup the tens in 34.

Regroup the tens in 34.

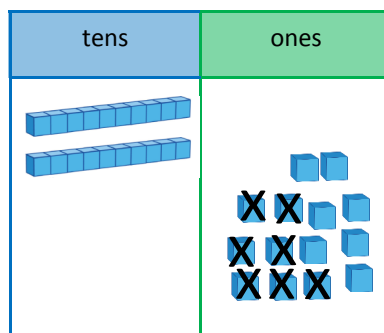
34 = 3 tens and 4 ones

34 = 2 tens and 14 ones



First subtract the ones

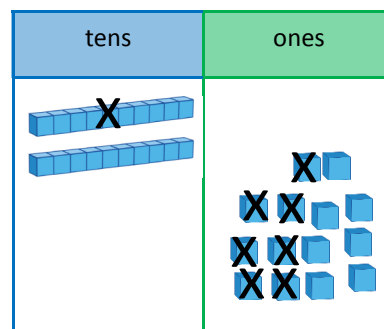
tens	ones
3 ²	¹ 4
-	7
1	7
	7



14 ones - 7 ones = 7 ones

2. Then subtract the tens

tens	ones
2 ¹	¹ 4
-	7
1	7
1	7



2 tens - 1 ten = 1 ten

So, 34 - 17 = 17