

Column addition method

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

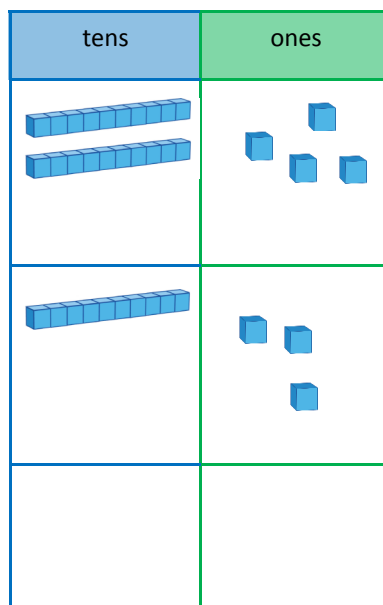
Column addition is a method that builds on pupils understanding of place value and different strategies including knowledge of number bonds within 20 and the 'make ten strategy'. One key misconception pupils may have when solving column addition and subtraction is to consider each digit as separate numbers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

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

Column addition without regrouping

$24 + 13 =$

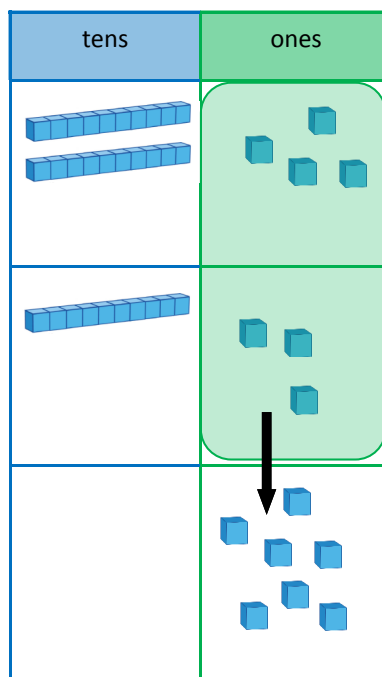
	tens	ones
	2	4
+	1	3



1. First add the ones

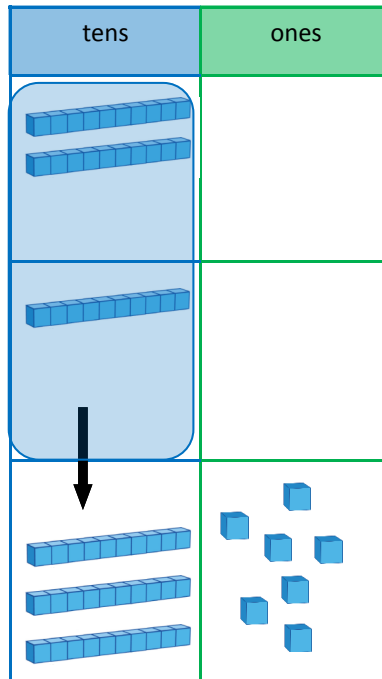
	tens	ones
	2	4
+	1	3
		7

$4 \text{ ones} + 3 \text{ ones} = 7 \text{ ones}$



2. Then add the tens

	tens	ones
	2	4
+	1	3
	3	7



2 tens + 1 ten = 3 tens

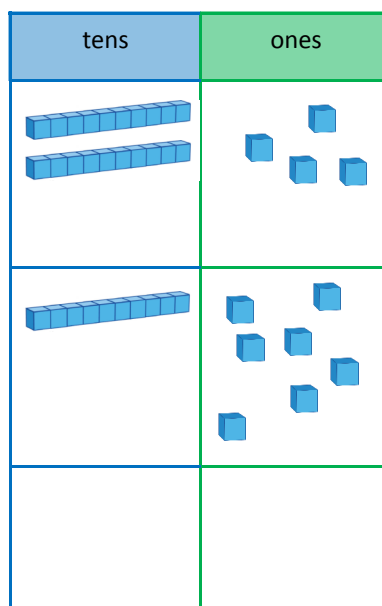
So, $24 + 13 = 37$

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 addition both when regrouping is and isn't required.

Column addition with regrouping

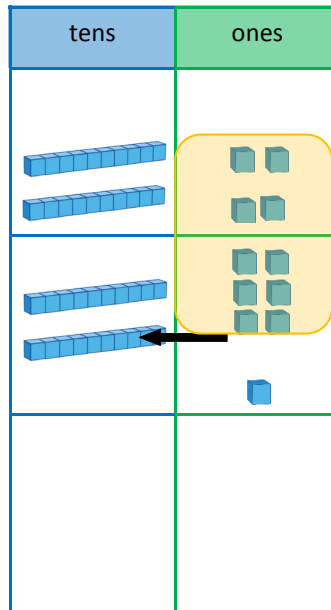
$24 + 17 =$

	tens	ones
	2	4
+	1	7



1. First add the ones

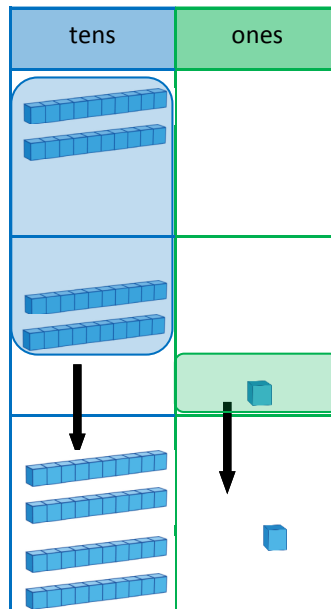
	tens	ones
	2	4
+	1	7
	<small>1</small>	
	1	



4 ones + 7 ones = 11 ones

Regroup the ones.

11 ones = 1 ten and 1 one



2. Then add the tens.

	tens	ones
	2	4
+	1	7
	<small>1</small>	
	4	1

2 tens + 1 ten + 1 ten = 4 tens

So, $24 + 17 = 41$

