How to use a number line to add numbers

Step 1 Using a number line to add by counting on in ones

This method helps us to remember number facts to ten and then to twenty. It also shows us clearly what adding is.

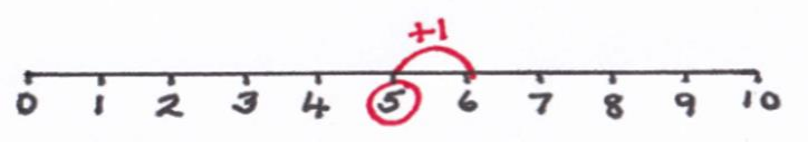
- Read the number sentence:

5+3=

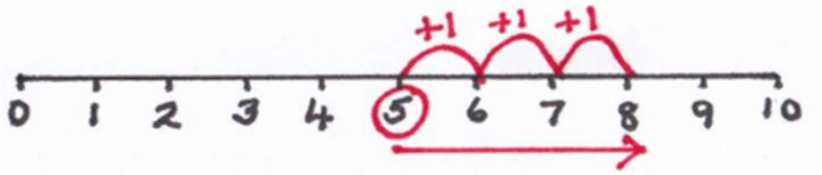
Five add three equals

- Now start at 5 and find it on the number line

- We need to add on 3. When we **add on**, we know that **the answer is going to be bigger**, so we must move along the number line in the direction that the numbers increase. To add on 3, count on one three times. So jump +1.



- Then jump +1 and jump another +1. Check that we have jumped 3 times. Where has the last jump taken us to? The number is 8 and this is the correct answer.



5+3=8

Step 2 Using a number line to add by 'bridging through' 10

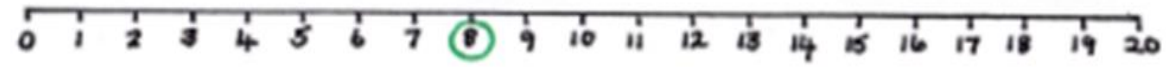
This method helps us to picture / visualise what happens to numbers when we have to cross the ten boundary or 'bridge' 10. It also prepares us for 'bridging' tens when we do mental maths.

- Read the number sentence:

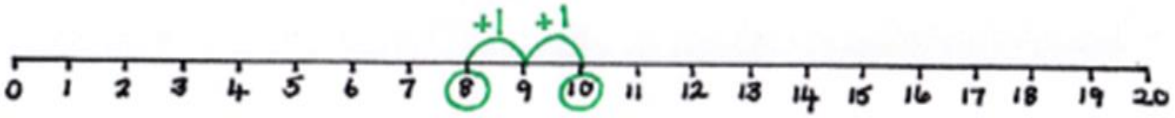
8+7=

eight add seven equals

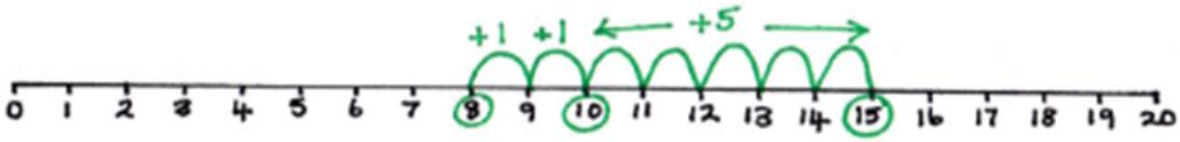
- Start at 8 and find it on the number line.



- We need to add on 7 but that is going to take us through 10. Starting from 8, how many jumps are needed to get to 10? 2 jumps will get us to 10, so make those first.



- We have now made 2 jumps but we had to add on 7 so how many more jumps are still needed? 5 jumps more will mean we have added 7 altogether. So now make 5 more jumps.



- Check that we have added 7 by doing 7 jumps. Where has the last jump taken us to? The number is 15 and this is the correct answer.

8+7=15

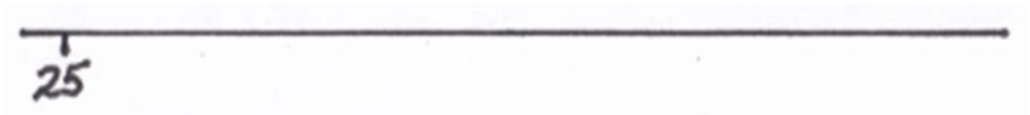
Step 3 Using a blank number line to add numbers

This method helps us to record addition when counting on in ones or tens

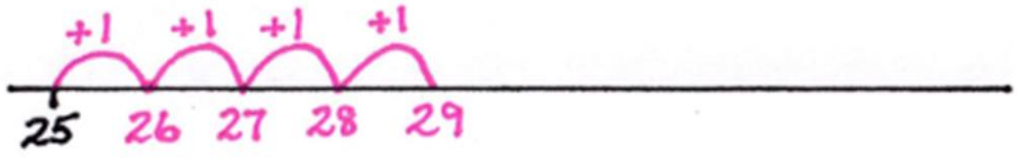
Example 1 Adding two-digit numbers to a one-digit number

25+4=

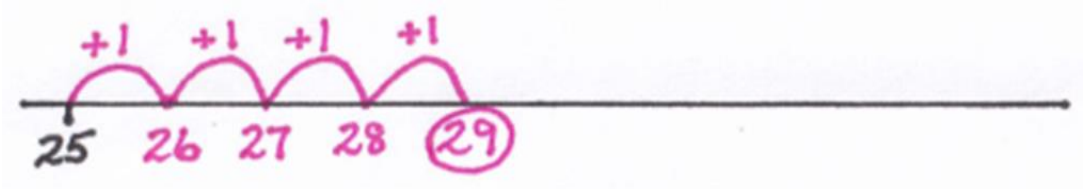
- Draw a straight line and write 25 close to the left-hand end.



- We need to add four so take four jumps to the right, adding one each time.



- What number does the last jump take you to?



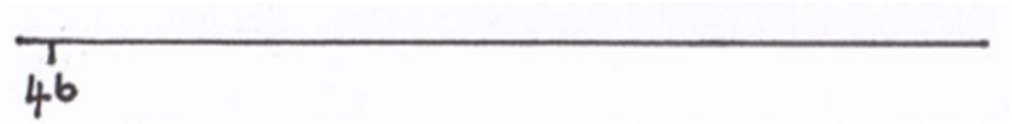
- The number is 29 and this is the answer.

25+4 =29

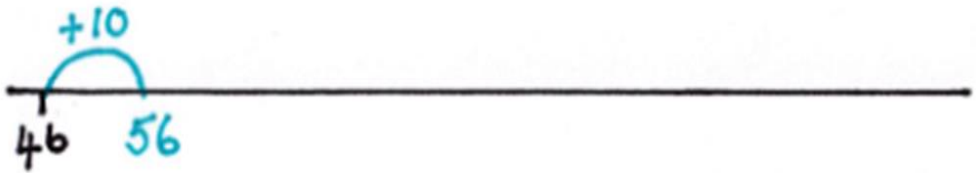
Example 2 Adding tens to two-digit numbers

46+30=

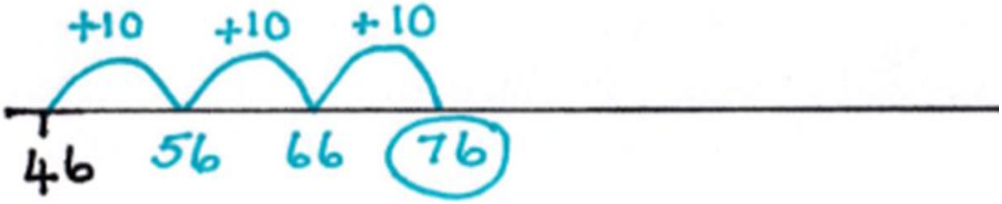
- Draw a straight line. We are starting at 46 so write it close to the left-hand end of the line.



- We need to add 30 which can be broken down into 3 lots of 10. From 46 take one jump of +10.



- Now take 2 more jumps of +10. Check that you have made 3 jumps, worth 30 altogether.



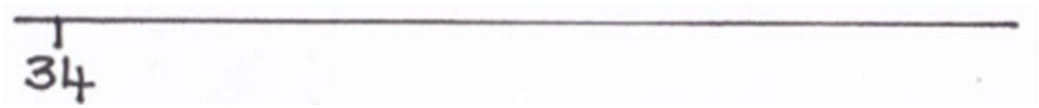
- What number does the last jump take you to? It is 76 and this is the answer.

46+30 =76

Example 3 Adding two two-digit numbers that do not cross a tens boundary

34+23=

- Draw a straight line. We are starting at 34 so write it close to the left-hand end of the line.

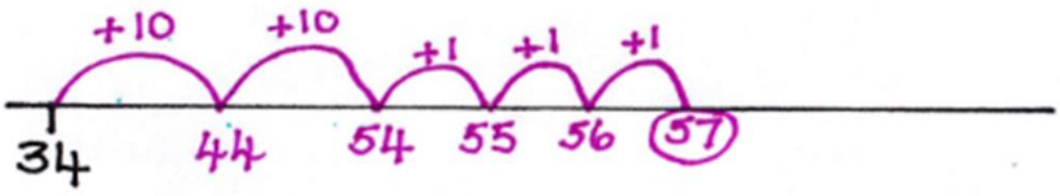


- To help us add 23 on, we need to split it (partition it) into tens and ones:

T	O
2	3

- How many tens are there in **2**3? There are 2 so we will need to make two +10 jumps.

- How many ones are there in 2**3**? There are 3 so we will need to make three +1 jumps.



- What number does the last jump take you to? It is 57 and that is the answer.

34+23=57

Step 4 Using a blank number line to add large numbers mentally, using partitioning

This method is for those confident with number lines and is helpful for mental maths

Example 1: (*an example that does not cross the tens boundary*)

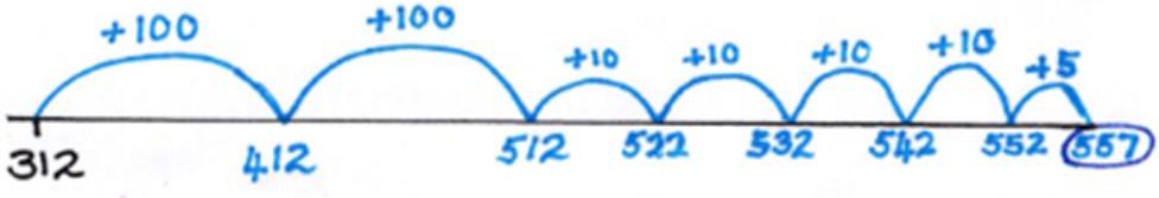
312 + 245

- Draw a straight line and write 312 at the start of the line.

- Now partition 245 into hundreds, tens and ones:

H	T	O	
2	4	5	becomes 200 + 40 + 5

- Plot mental calculations along the line, adding hundreds, then tens, then ones.



312 + 245 = 557

Example 2: (*an example that crosses the hundreds boundary*)

486 + 352

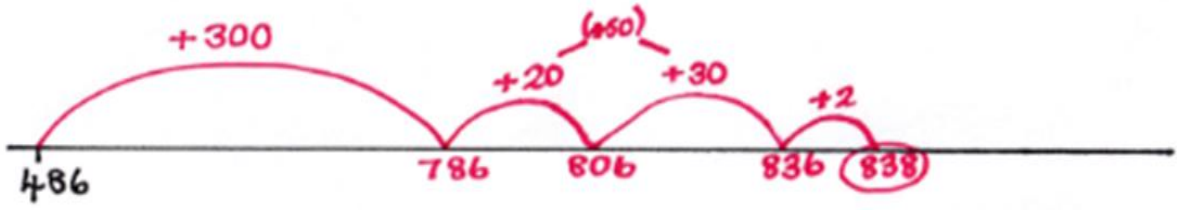
- Draw a straight line and write 486 at the start of the line.

- Now partition 352 into hundreds, tens and ones:

H	T	O	
3	5	2	becomes 300 + 50 + 2

- Add 300 first:

- Now we need to add 50. We can see that adding 50 to 80 will take us across the hundreds boundary. We can 'bridge' the boundary by working out what we can add to 80 to make 100. The answer is 20, so add 20 first to make up the next hundred. How many tens have not yet been added? We needed to add 50, have already added 20 and so must now add on 30 more.



- Then add on 2 ones. Now check that 352 was added on. What number did you arrive at? This is your answer.

486+ 352 = 838