

Step  
24

## Addition

I can add a 2d number  
to a 2d number

$$43 + 52 =$$

### Remember to:

- partition the numbers
- write out the 2 new questions
- add the units
- add the tens
- add the units answer to the tens answer

**F A B**

This is the pre-cursor to the next major milestone of being able to add any two 2d numbers together (next step).

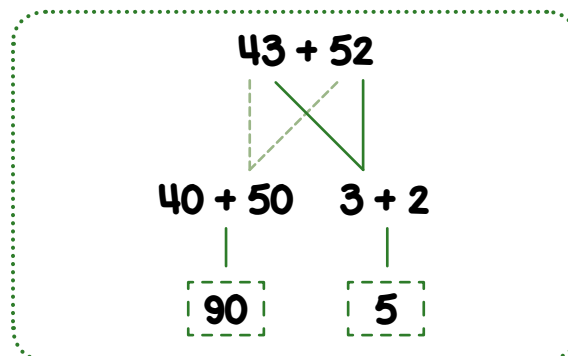
However this is the 'dry-run' as there is no need for the children to cross 10 for either the units or the digits.

Learners should see the entire 5 step process so they can fully grasp the 5 'Remember to...' steps. The concept of turning one question we can't do into two that we can, is an important principle to emphasise to learners.

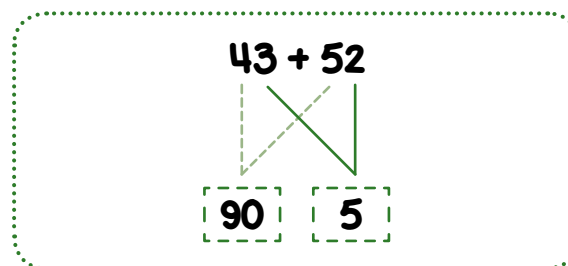
Some children might quickly realise for themselves (and it would be worthwhile pointing it out to them if they don't) that they can just 'tot' - e.g. here,  $4 + 5 = 9$  - the tens digits and then the units digits - so long as the teacher is sure the child has the place value understanding to license this shortcut and that they know it only works because no crossing 10 is required. This step mustn't be arrived at too quickly though since the children should be using

this step to become familiar with this crucial process.

- **F** - the full written version - the partitioning and the 2 'new' questions are written out



- **A** - the abridged written version - here the separate totalling of the tens and the units is completed entirely mentally but their totals are recorded to aid the final addition. Initially with just the two sub-totals, and then with the 2 sub-totals and the answer, and then with the one of the sub totals and the final total (i.e. one of the sub totals is held in the brain) and finally just the answer.



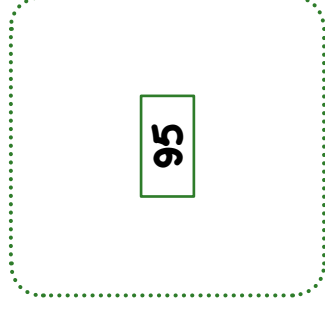
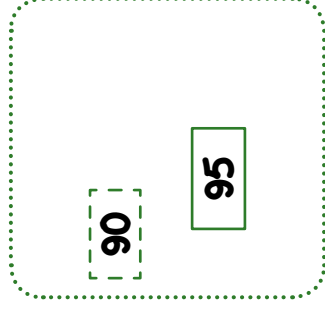
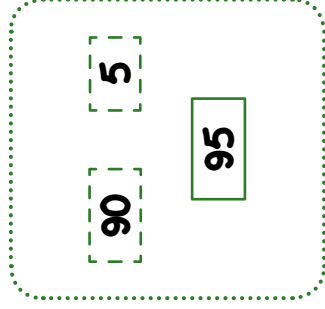
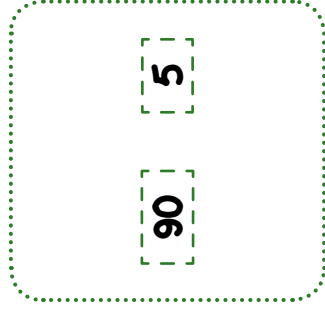
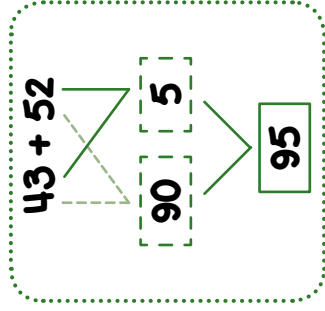
- **B** - the brain only, mental, version - just the final total is recorded.



After the learner has completely mastered this step we can then introduce the column method of addition for the first time. This is the ideal time since at first we can link the high understanding of the method here to the sheer process of going down the columns. More information is provided in the book, 'The Big Maths Column Methods'.

## FAB Maths Addition Step 24: 2d + 2d

$43 + 52$



**Remember to:**

- write out your full written method

**Remember to:**

- turn it into two questions in your head
- write down just the 2 answers

**Remember to:**

- write down the 2 answers
- add them up to find the total

**Remember to:**

- just write one of the 2 numbers down
- hold the other number in your brain

**Remember to:**

- hold both numbers in your brain
- add them in your brain
- write down just the answer

**F**

**A**

**B**

## The 'Brain Only' Moment: 2d + 2d

Even though we have journeyed along the FAB continuum, when we get to the moment when the child is adding a 2d number to another 2d number brain only for the very first time we still need to build up the mini-skills gradually. This is a principle already explored at Step 17 of this Progress Drive.

So, initially the child is asked to drop the tens digits in their mind and just give us the 'units + units' answer. This should be repeated for several questions as we 'train the brain', reminding children that the answer is never larger than 18.

Then, we can ask the child to do the opposite and drop the units digits and just give us the tens answer. Again, for several questions.

$23 + 44$

$3 + 4 = 7$

7

$23 + 44$

$20 + 40 = 60$

60

With the brain already 'warmed up' for seeing the tens answer immediately then we can now expect the child to find the tens answer, park it up in their brain, solve the units answer, hold that in their brain, and then retrieve the tens answer until they just have the two mini part-answers ready to add together. It is useful again to remind the children that the units add units answer can't be more than 18 and so they will never be adding more than 1 to the tens digit from the tens answer.

$72 + 23$

$70 + 20 = 90$

$90$

$2 + 3 = 5$

$90 + 5 = 95$

95