# Diving into Mastery – Diving

## Adult Guidance with Question Prompts

Children use the strategies they have learnt (partitioning and use of equipment) to add two 2-digit numbers crossing ten. They will need to be able to exchange ten ones for one ten.

How many tens are there in total?

What is the sum of the ones?

Can you exchange ten ones for one ten? Show me with your equipment.

How can partitioning help you?

How will you lay out the addition in a column?

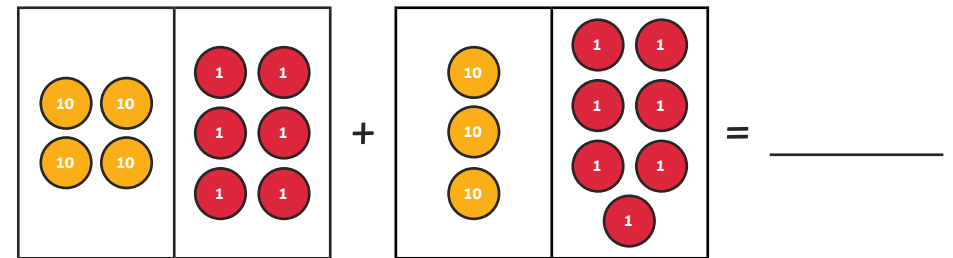What do you notice about these two bar models?
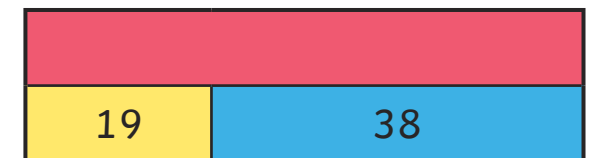
How are they the same?

How are they different?

Solve these additions, exchanging ten ones for one ten.



6 tens and 7 ones + 2 tens and 8 ones = _____

|   | 3 | 7 |
|---|---|---|
| + | 2 | 5 |
|   |   |   |
| + |   |   |
|   |   |   |



Compare the two bar models. What do you notice?

Harris has 36 football cards. Anaya has 18. How many do they have altogether?

# Diving into Mastery – Deeper

## Adult Guidance with Question Prompts

Children reason about the most efficient method for adding two 2-digit numbers. They explain their ideas and methods to a friend.

What do you think of Fatima's method?

Do you think you could reach the correct answer that way?

How long would it take?

What do you think about Ben's method?

Which method do you think is best? Why?

Which would be quickest?

Which method are you least likely to make a mistake on?

Can you solve the calculation using your preferred method?

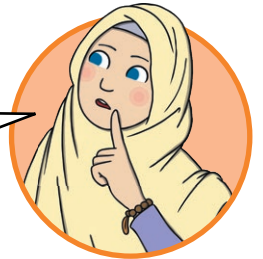Can you explain all the steps you took to a friend?

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Fatima and Ben are solving this calculation:

## 56 + 39

Work out the answer and explain your method to a friend.

I counted on from 56, counting on first in tens and then in ones.

I added all the tens together and all the ones together. Then, I put the tens and ones back together.

Which do you think is the best method? Why?

Do you think you could have improved the method that you used to work out the question? How?

# Diving into Mastery – Deepest

## Adult Guidance with Question Prompts

Children apply their knowledge of crossing ten when adding to complete statements using the symbols <, > and =.

What do these symbols mean?

What will you need to do first?

What method will you use to solve the calculations?

Why have you chosen that method?

Is there more than one number that could make the statement correct?

Is that true for all these statements?

Has your friend chosen a different number?

Could you both be correct? Why?

Write a number to complete each statement.

$35 + 39 >$ ☐

$56 + 27 =$ ☐

$64 + 28 <$ ☐

$19 + 23 >$ ☐

$45 + 46 =$ ☐

$76 + 15 <$ ☐

Compare your statements to your friend's.
How are they the same? How are they different?

46 + 37 = 83 (place value counters)

6 tens and 7 ones + 2 tens and 8 ones = 8 tens + 15 ones = 95

|   | 3 | 7 |
|---|---|---|
| + | 2 | 5 |
|   | 1 | 2 |
|   | 5 | 0 |
|   | 6 | 2 |

29 + 28 = 57 and 19 + 38 = 57 (bar models). The answers are the same because the numbers being added in each bar model have 4 tens and 17 ones in total.

36 + 18 = 54 (word problem)

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Fatima's method has lots of steps and it would be easy for her to make a mistake if she tried to do this mentally. Ben's method is the most efficient to use when calculating mentally.

56 + 39 = 95

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35 + 39 > any number less than 74

56 + 27 = 83

64 + 28 < any number greater than 92

19 + 23 > any number less than 42

45 + 46 = 91

76 + 15 < any number greater than 91

# Diving into Mastery Guidance for Educators

**Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:**

**Diving**

**Deeper**

**Deepest**

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

These activity cards might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

# Need Planning to Complement this Resource?

## National Curriculum Aim

Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers.

For more planning resources to support this aim, _____

Our PlanIt Maths resources include mastery content, linked Home Learning Packs, excellent extended problem-solving challenges in the form of SolveIts and Challenge Cards. Steps to Progression are also included, this document gives the suggested order to teach the PlanIt Maths lessons and also supports teachers who use the White Rose scheme of learning to make full use of the resources available within PlanIt Maths. Wherever possible, lesson packs have been matched to each of the small steps on the White Rose Maths scheme of learning.