Diving into Mastery – Diving

Adult Guidance with Question Prompts

Children add two 2-digit numbers without crossing ten. They use partitioning and practical equipment, such as base ten blocks, to help. They may start to use the column method; make it clear they should start by adding the ones and then adding the tens.

What is the same about these addition calculations?

What is different?

What strategies could you use to calculate efficiently?

What equipment could you use?

How could partitioning help?

When doing column addition, do we start by adding the tens or the ones?
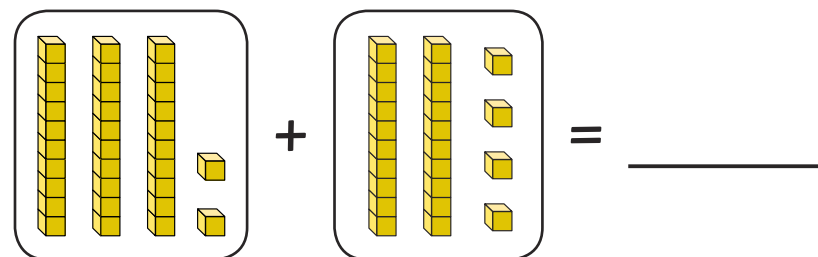
How many ones are there in total?

What is the sum of the tens?

What do you need to do after adding the tens and ones?

Add Two 2-Digit Numbers (1)

Find the sum of each pair of two-digit numbers.

 + = _____

5 tens and 4 ones + 4 tens and 3 ones = _____

| 71 + 23 | 7 tens + 2 tens = _____
 1 one + 3 ones = _____ | _____ tens +
 _____ ones = _____ |

	6 4
+	2 1

Mr Jones has 32 whiteboard pens and 17 rulers. How many items does he have in total?

Diving into Mastery – Deeper

Adult Guidance with Question Prompts

Children use a part-whole model to partition and add tens and ones. They identify and correct the mistake that has been made in an incorrect example – in this case, that the character has partitioned the numbers incorrectly and written the tens as ones. This is a useful teaching point for children who are not secure with place value.

What method has Asma chosen?

What do you estimate the answer to be?

Do you think an answer of fourteen seems reasonable?

Can you see where she might have made a mistake?

What does the four in 45 represent?

What does the three in 32 represent?

What is wrong with writing it as Asma has done?

How should she have written it?

Can you show me?

What other methods could she have used to check her answer?
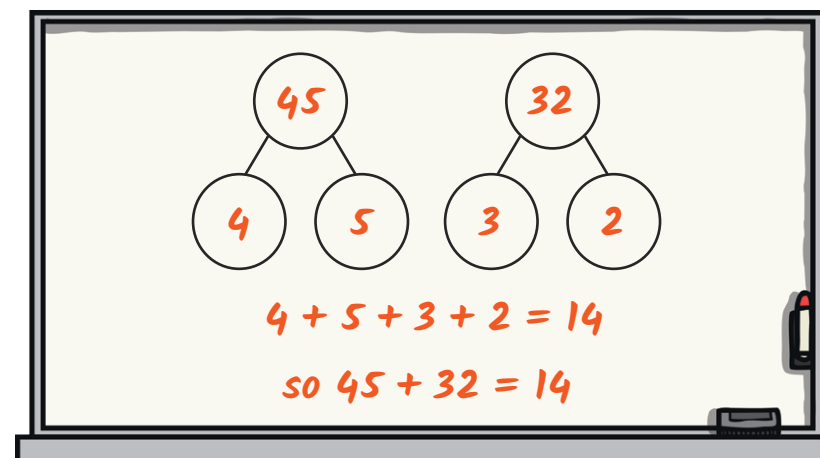
Can you show me how?
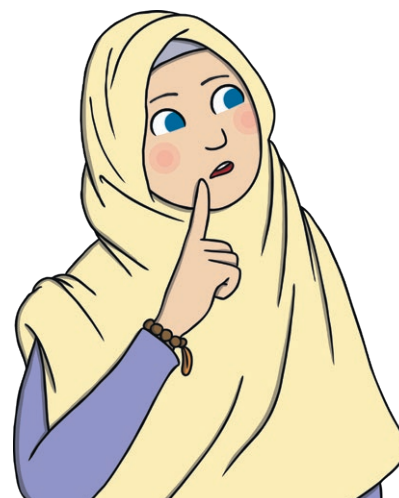

Add Two 2-Digit Numbers (1)

Asma calculates the answer to this addition.

45 + 32

She works it out like this:

4 + 5 + 3 + 2 = 14

so 45 + 32 = 14

Do you agree with her answer? Explain why.

Show Asma how to find the correct answer using a part-whole model.

Then, show Asma how she could have checked her answer using a different method.

Diving into Mastery – Deepest

Adult Guidance with Question Prompts

Children use their preferred method to add two 2-digit numbers. They investigate how many different totals they can make and then answer questions about the totals. Encourage systematic working to find all the solutions.

Which two will you start with? Why?

How could working systematically help you?

How could you work in a sensible way to make sure you add up all the different pairs of numbers?

How many different calculations have you done?

What is the greatest total you can make?

What is the smallest total you can make?
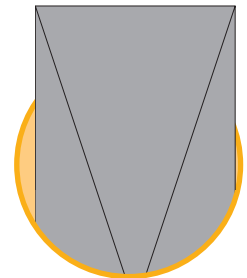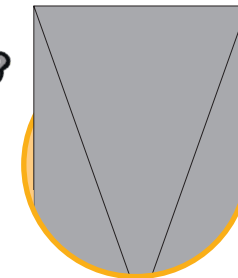

Add Two 2-Digit Numbers (1)

Choose two of these numbers to add together.

| 12 | 45 | 51 | 34 |

?

How many different totals can you make?

What is the greatest number you can make?

What is the smallest number you can make?