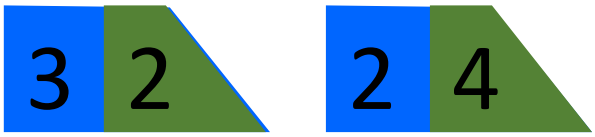
Do the splits

Focus of activity: Adding pairs of 2-digit numbers using partitioning (1s < 10, 10s < 100).

Working together: conceptual understanding

- Make 32 and 24 using place value cards.



- *We're going to add these two numbers using partitioning.* Ask one child to collect the 10s cards and say the total, and another to collect the 1s cards and say the total. *So, how much do we have altogether? 50 and 6 makes 56.* Record:

32 + 24
= 30 + 20 + 2 + 4
= 50 + 6
= 56

- Repeat for 45 + 33.
- Ask children to work in pairs to make 34 and 23 using place value cards. One child collects the 10s, and the other collects the 1s. They each say their total, and then add their totals together. Share answers. Do they all agree?
- Repeat for 52 + 26.

Up for a challenge?

Ask children to make 36 and 25. *What are the totals? 50 and 11*. Point out that 1s came to more than 10 this time. *We can add the 11 on by adding 10, then 1. 50 add 10, add 1.* Repeat for 67 + 25.

Now it's the children's turn:

- Children work in pairs to shuffle 10 to 50 cards, and 1 to 5 cards, take two from each pile to make a pair of 2-digit numbers. One child collects the 10s, and the other the 1s, and they find the total. They record the addition. How many additions can they write before time is up?
- Go round the group and mark their additions as they do them, e.g. initially after two examples.

S-t-r-e-t-c-h:

If chn cope well, ask them to include the 6 to 9 cards so that sometimes the 1s will come to more than 10.

Things to remember

Remember that to add a pair of 2-digit numbers, we can use partitioning. We add the 10s, add the 1s then add our two answers together. Challenge children to write an addition with an answer of 99, showing the two numbers using place value cards.

You may want to add something that has emerged from the activity. This may refer to misconceptions or mistakes made.

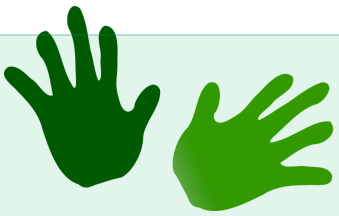
Resources	**Outcomes**
• Place value cards (10s and 1s)	1. Children can add pairs of 2-digit numbers using partitioning (1s < 10, 10s < 100). 2. Children begin to add pairs of 2-digit numbers where the 1s come to more than 10.

Do the splits

Work in pairs

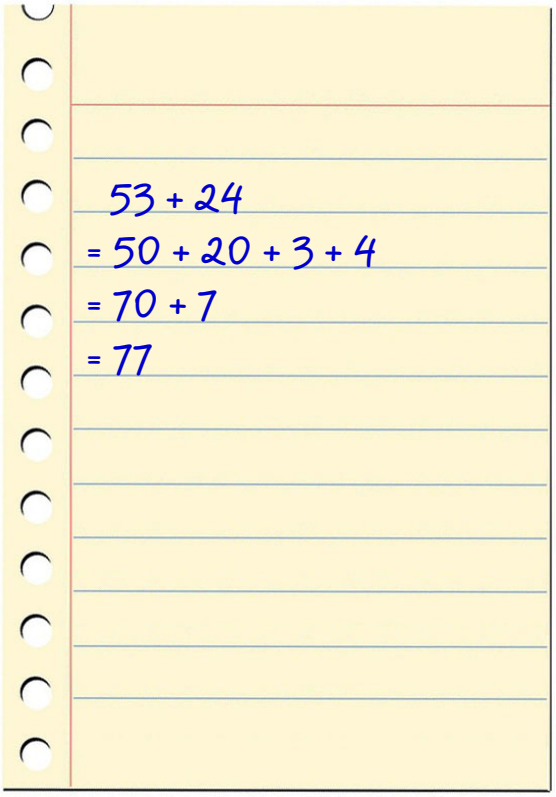
Things you will need:

- A set of 10s and 1s place value cards
- A pencil



What to do:

- Shuffle the 10 to 50 cards and place face down in a pile. Shuffle the 1 to 5 cards and place face down.
- Take the top card from each pile and put them together to make a 2-digit number.
- Take the next card from each pile to make another 2-digit number.
- One person collects the 10s.
  The other person collects the 1s.
  How much do you have each?
  Now add your totals.
- Record the addition.
- How many split sums can you do before the time is up?



S-t-r-e-t-c-h:

Include the 6 to 9 cards so that sometimes the 1s will come to more than 10.

Learning outcomes:

- I can add pairs of 2-digit numbers using partitioning (1s < 10, 10s < 100)
- I am beginning to add pairs of 2-digit numbers where the 1s come to more than 10.