2AS–4 Add and subtract within 100 – part 2

Add and subtract within 100 by applying related one-digit addition and subtraction facts: add and subtract any 2 two-digit numbers.

2AS–4 Teaching guidance

As for **2AS–3**, Dienes and partitioning diagrams can be used to support pupils as they learn about strategies for carrying out these calculations.

To add 2 two-digit numbers, pupils need to combine one-digit addition facts with their understanding of two-digit place value. Pupils should first learn to add 2 multiples of ten and 2 ones before moving on to the addition of 2 two-digit numbers, for example:

- $40 + 20 + 5 + 3 = 60 + 8 = 68$
- $40 + 5 + 20 + 3 = 60 + 8 = 68$
- $45 + 23 = 60 + 8 = 68$

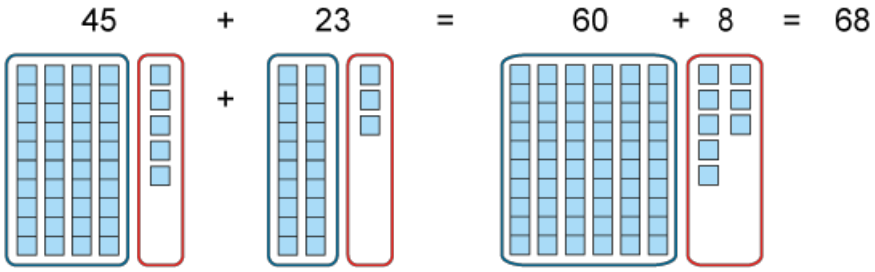


Figure 51: Dienes and an equation to support adding 2 two-digit numbers

Language focus

"First I partition both numbers. Then I add the tens. Then I add the ones.
Then I combine all of the tens and all of the ones."

Pupils can then learn to be more efficient, by partitioning just one addend, for example:

$$45 + 23 = 45 + 20 + 3$$
$$= 65 + 3$$

When pupils learn to subtract one two-digit number from another, the progression is similar to that for addition. Pupils can first learn to subtract a multiple of ten and some ones from a two-digit number, and then connect this to the subtraction of one two-digit number from another, for example:

- $45 - 20 - 3 = 25 - 3$
  $= 22$

- $45 - 23 = 45 - 20 - 3$
  $= 25 - 3$
  $= 22$

or

- $45 - 3 - 20 = 42 - 20$
  $= 22$

- $45 - 23 = 45 - 3 - 20$
  $= 42 - 20$
  $= 22$

There is an important difference compared to the addition strategy: pupils should not partition both two-digit numbers for subtraction as this can lead to errors, or calculations involving negative numbers, when bridging a multiple of 10, for example:

- $63 - 17 \neq 60 - 10 + 7 - 3$
- $63 - 17 = 60 - 10 + 3 - 7$

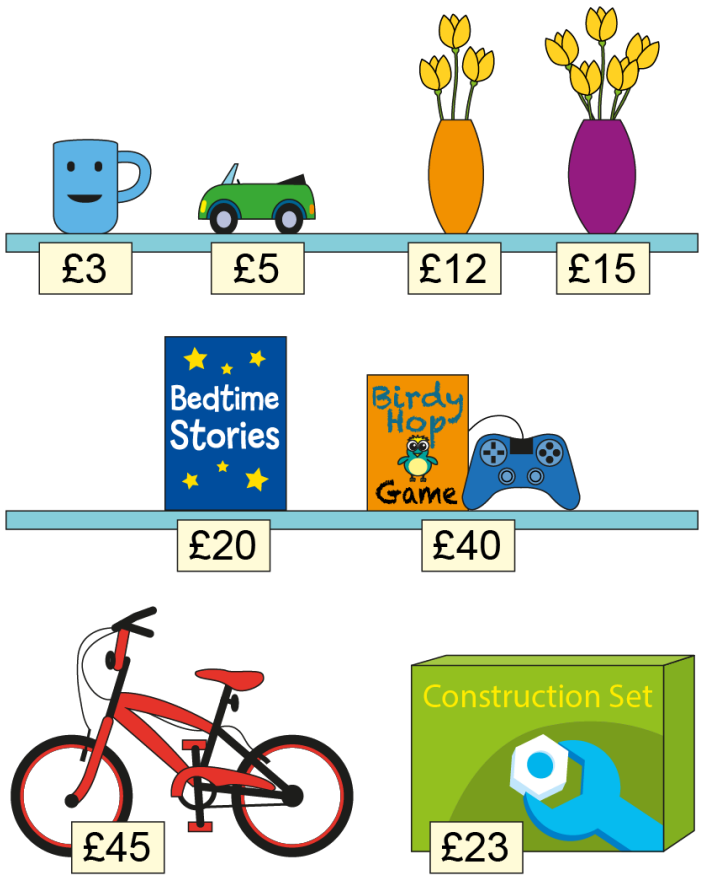
You can find out more about fluency and recording for addition and subtraction of two-digit numbers here in the calculation and fluency section: **2AS–4**

Making connections

Pupils should also be able to apply strategies for addition or subtraction across 10 (**2AS–1**) to calculations such as $26 + 37 = 63$ and $63 - 37 = 26$.

2AS–4 Example assessment questions

1.



a. Daisy spends £32 in the shop. Circle the 2 items she buys.

b. What is the total cost of the bicycle and construction set?

c. Jalal pays for the bicycle using a £50 note. How much change does he get?

d. Yu Yan wants to buy the construction set. She has saved £15. How much more money does Yu Yan need to save?