

# Adding and Subtracting Within 100

Today we build two-digit sums and differences by making tens and using doubles.



*Figure 1: A cheerful Grade 2 classroom corner with two children kneeling on a colourful rug, stacking small wooden base-ten blocks into groups of ten*

## Learning intentions

We are learning to add and subtract two-digit numbers up to 100.

We are learning to use strategies like making tens and doubles to find sums and differences.

We are learning to check our answers using the opposite operation.

## Success criteria

I can add two two-digit numbers with a sum up to 100.

I can subtract two-digit numbers starting from a number up to 100.

I can use a ten-making strategy or a doubles strategy to solve a problem.

I can check my answer with an inverse operation.

I can find a missing number in an addition or subtraction sentence.

## Curriculum alignment

- Students investigate addition and subtraction within 100 ([Outcome](#)).
- Addition and subtraction strategies for two-digit numbers include making multiples of ten and using doubles ([Knowledge](#)).
- Students add numbers up to a sum of 100, subtract numbers with a maximum minuend of 100, verify a sum or difference using inverse operations, and determine a missing quantity in a sum or difference ([Skills](#)).
- Addition and subtraction can represent the sum or difference of countable quantities or measurable lengths ([Understanding](#)).
- Visualize 100 as a composition of multiples of 10 in various ways ([Skills](#)).

## Materials

- Base-ten blocks (tens rods and ones cubes), enough for pairs
- One large hundred chart for the front board
- Small hundred charts, one per student
- Whiteboards and markers, one set per pair
- Ten problem cards with two-digit addition and subtraction questions
- Exit ticket slips

## Lesson sequence

### 1. Hook (5 minutes)

Show the class two full tens rods and 4 ones cubes. Ask: "How many blocks do I have? How do you know?"

Take answers, then say: "That's 24. Now watch." Add one more tens rod. Ask: "How many now? How did the number change?"

Land on the idea: "Today we add and subtract numbers all the way up to 100, using tens to help us."

### 2. Direct instruction (10 minutes)

Write on the board:  $38 + 25 = ?$

Ask: "What if we broke 25 into 20 and 5?"

Model:  $38 + 20 = 58$ . Then  $58 + 5 = 63$ .

Say: "We made a ten-friendly jump first, then added the leftover ones."

Show a second example with doubles:  $24 + 26 = ?$

Ask: "Does anyone see a double hiding in here? What is  $24 + 24$ ?" (48)

Model:  $24 + 24 = 48$ , then add the extra 2 from 26.  $48 + 2 = 50$ .

Write the subtraction example:  $63 - 25 = ?$

Ask: "What number, added to 25, gets us to 63?" Model counting up by tens and ones on the hundred chart:  $25 + 10 = 35$ ,  $35 + 10 = 45$ ,  $45 + 10 = 55$ ,  $55 + 8 = 63$ . So the difference is 38.

Show how to check: " $38 + 25 = 63$ , so our subtraction was correct." Point out this is using the opposite operation to check ([Skills](#)).

### 3. Guided practice (10 minutes)

Pair students with a whiteboard and small hundred chart each.

Give this problem:  $47 + 34 = ?$

Prompt: "Break 34 into tens and ones. What is  $47 + 30$ ? Then add the rest."

Circulate and ask: "Which part did you add first? Why?"

Give a subtraction problem:  $72 - 19 = ?$

Prompt: "Try counting up from 19 to 72 using jumps of ten, then ones."

Give a missing-number problem:  $45 + ? = 80$ .

Prompt: "What do you need to add to 45 to reach 80? Try building 45 with blocks, then adding tens rods until you hit 80."

Checkpoint question for pairs: "How can you check your answer is right?"

### 4. Independent practice (10 minutes)

Hand out problem cards. Each student solves four problems in their notebook, using at least one ten-making strategy and one doubles strategy, and checking one answer with the inverse operation.

Sample problems:

$$56 + 27 = ?$$

$$64 - 38 = ?$$

$$29 + 29 = ?$$

$$? - 15 = 42$$

Students record the strategy they used next to each answer, in words or a quick sketch of tens and ones.

### 5. Consolidation (5 minutes)

Gather the class. Ask one student to share how they solved  $56 + 27$ .

Ask: "Did anyone solve it a different way?" Compare a ten-making approach with a doubles approach if one comes up.

Ask the whole class: "How does knowing  $5 + 5$  help you with  $50 + 50$ , or with  $47 + 5$ ?"

Close with: "Tomorrow we will use these same strategies to solve problems about lengths, like measuring how far two ribbons stretch together."

## Differentiation

**Extension:** Ask students to solve problems with three addends, such as  $24 + 15 + 20$ , and explain why they can add the numbers in any order and still get the same sum ([Knowledge](#)). Challenge them to write their own missing-number problem for a partner to solve.

**Support:** Provide physical base-ten blocks for every problem instead of mental jumps. Reduce the numbers to a friendlier range, such as sums within 50, while keeping the same ten-making strategy. Let students use the hundred chart to count forward or backward one square at a time if larger jumps are too hard.

## Assessment

Formative check: collect the independent practice notebooks or exit tickets showing the four problems.

Look for:

- Correct sums and differences within 100.
- Evidence of a ten-making or doubles strategy, not only counting by ones.
- At least one problem checked using the inverse operation.
- Correct reasoning on the missing-number problem, showing understanding of what "the missing part" means ([Skills](#)).