

Making Tens: Adding and Subtracting Within 100

A hands-on lesson where second graders build two-digit sums and differences using tens and ones.



Figure 1: A bright classroom table covered in colorful base-ten blocks, tens rods and ones cubes stacked into small towers, with two children's hands

Learning intentions

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

We are learning to use a strategy, like making a ten, to solve addition and subtraction problems.

Success criteria

I can group ones into a ten to help me add two-digit numbers.

I can subtract two-digit numbers using a strategy I choose.

I can check my sum or difference using the opposite operation.

Curriculum alignment

- Students investigate addition and subtraction within 100 ([Outcome](#)).
- The order in which more than two numbers are added does not affect the sum([Details](#)).
- Guiding question: How can addition and subtraction be interpreted? ([Guiding question](#)).
- Organizing idea: Number, quantity is measured with numbers that enable counting, labelling, comparing, and operating ([Topic](#)).

Materials

- Base ten blocks (tens rods and ones cubes), enough for pairs
- Small whiteboards and markers, one per student
- A large hundred chart posted at the front
- Number lines from 0 to 100, one per student
- Exit ticket slips (two problems per slip)

Lesson sequence

1. Hook (5 minutes)

Hold up two tens rods and four ones cubes. Ask: "How many blocks am I holding?" Let students call out. Write 24 on the board.

Add three more ones cubes. Ask: "Now how many do I have? How do you know?"

Say: "Today we are adding and subtracting numbers up to 100. We will use tens and ones to help us."

2. Direct instruction (10 minutes)

Write $34 + 28$ on the board. Say: "Watch how I make a ten to solve this."

Model with blocks: "I have 3 tens and 4 ones. I have 2 tens and 8 ones. First, I add my tens: 3 tens plus 2 tens is 5 tens, that's 50."

"Now I add my ones: 4 plus 8. I know 4 plus 6 makes a ten, so I split the 8 into 6 and 2. 4 plus 6 is 10. I have 2 ones left over."

"50 plus 10 is 60. 60 plus 2 more ones is 62."

Write: $34 + 28 = 62$.

Now model subtraction. Write $56 - 19$ on the board. Say: "I can think of a number I know that's close to 19. 20 is close to 19."

"56 minus 20 is 36. But I subtracted one too many, so I add 1 back: 36 plus 1 is 37."

Write: $56 - 19 = 37$.

Ask: "Why do addition and subtraction go together?" Guide students to notice that $37 + 19 = 56$, so subtraction can be checked with addition ([Outcome](#)).

3. Guided practice (10 minutes)

Pair students with base ten blocks and whiteboards.

Write on the board: $47 + 26$.

Say: "Talk with your partner. Build 47 with blocks. Build 26 with blocks. Combine your tens first."

Walk the room. Ask pairs: "How many tens do you have now? How many ones?"

Write the answer together: $47 + 26 = 73$.

Next problem: $82 - 35$.

Say: "This time, build 82. Take away 3 tens first. How many tens are left?"

Prompt: "Now you need to take away 5 more ones, but you only have 2 ones. What can you do?" Guide students to trade a tens rod for 10 ones.

Confirm together: $82 - 35 = 47$.

Checkpoint: Ask each pair to show their blocks for $82 - 35$. Look for correct trading of a tens rod for ones. Reteach the trade on the spot if a pair is stuck.

4. Independent practice (10 minutes)

Give each student a whiteboard and a number line. Write four problems on the board:

- $39 + 17$
- $64 - 28$
- $55 + 26$
- $91 - 43$

Say: "Choose your own strategy. You can use blocks, the number line, or make a ten in your head. Show your thinking."

Circulate and ask individuals: "How did you solve this one? Can you check it with the opposite operation?"

5. Consolidation (5 minutes)

Bring the class back together. Ask: "Who used making a ten? Who used a number line?"

Invite one student to share their strategy for $55 + 26$ on the board.

Ask the class: "How can we check that $55 + 26 = 81$ is correct?" Guide them to try $81 - 26 = 55$ ([Outcome](#)).

Close with: "Tomorrow we will keep using these strategies with even trickier numbers."

Differentiation

Extension: Give students three addends to combine, such as $24 + 18 + 12$, and ask which two numbers they add first and why. This connects to the understanding that a sum can be composed in multiple ways ([Details](#)). Students who finish early can also try estimating before solving, a strategy used with larger numbers in later grades ([Details](#)).

Support: For students still building fluency, reduce the numbers to within 20 first, using counting on and counting back strategies from Grade 1 ([Outcome](#), [Details](#)). Provide a filled-in hundred chart and let students count tens by rows before tackling two-digit trades.

Assessment

Formative check: Collect the exit ticket with two problems: $46 + 37$ and $73 - 25$.

Look for:

- Correct use of tens and ones (are tens combined before ones, or traded correctly during subtraction).
- A written or verbal strategy, not just a final answer.
- Whether the student attempts to check their answer with the inverse operation ([Outcome](#)).

Students who make trading errors in subtraction need another guided session with blocks before moving to the standard algorithm.