Show Why the Strategy Works

Use tens and ones to explain addition and subtraction strategies

Name: _____ Date: _____

Part 1: Two Ways to Add 36 + 27

Use tens and ones. A long rod stands for 1 ten. A small square stands for 1 one. Draw rods and squares to prove each student is correct.

 = 1 ten

 = 1 one

1. Mia's strategy

Mia says, “30 + 20 = 50. Then 6 + 7 = 13. Last, 50 + 13 = 63.”

Draw a tens-and-ones model. Be sure to show what happens to 10 ones.

36 + 27 = _____

Why does Mia's strategy work?

2. Omar's strategy

Omar says, “36 + 20 = 56. Then 56 + 7 = 63.”

Draw a tens-and-ones model for Omar's steps.

36 + 27 = _____

Why does Omar's strategy work?

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Part 2: Check a Subtraction Claim

3. Solve 63 - 28. Build or draw 6 tens and 3 ones first. You cannot take 8 ones from 3 ones. Trade 1 ten for 10 ones before you subtract.

Correct claim: Lina says, “I traded 1 ten. Now I have 5 tens and 13 ones. I can take away 2 tens and 8 ones.”

63 - 28 = _____

Why did Lina trade 1 ten for 10 ones?

4. Compare the claims. Ben says, “6 tens - 2 tens is 4 tens. 3 ones - 8 ones is 5 ones. My answer is 45.” Ben's answer is not correct.

What did Ben forget to do? Explain why Lina's trade makes subtraction work. Then write the correct difference.

63 - 28 = _____

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Answer Key and Teaching Notes

Materials and setup: Print and supply all student pages, keeping teacher-key pages separate. Give each pair 7 tens rods and at least 15 ones cubes (or connecting cubes), pencils, and crayons. If manipulatives are unavailable, students draw long segmented rods and small squares. Before Part 1, display or hold up one tens rod and ten ones cubes. Say: “These have the same value: one ten.” Do not pre-solve the tasks.

Teaching script: “Today, your answer matters, and your drawing and words matter too. A ten is made of ten ones. When ones make a group of ten, you may rename them as a ten. In subtraction, if there are not enough ones to take away, trade one ten for ten ones. Listen for the reason, not just the number.” Read each student claim aloud as needed. Say: “Show what the numbers mean with tens and ones.”

Observe: As students work, look for rods labeled or used as tens, individual ones, and a visible trade of one ten for ten ones in Item 3. Ask one neutral prompt only: “What does this rod stand for?” Record whether the student (a) represents place value, (b) composes or decomposes a ten, and (c) explains the action with words. Accept drawings, manipulatives, pointing plus oral explanation, or dictated writing.

1. Mia: 36 is 3 tens 6 ones and 27 is 2 tens 7 ones. Combine tens: 5 tens. Combine ones: 13 ones. Rename 10 of the ones as 1 ten, giving 6 tens 3 ones, or 63. Sample explanation: “Six ones and seven ones make thirteen ones. Ten of the ones make one more ten.”

2. Omar: Add 2 tens to 3 tens 6 ones to get 5 tens 6 ones, or 56. Then add 7 ones. The 6 ones and 7 ones make 13 ones; rename 10 ones as 1 ten. The result is 6 tens 3 ones, or 63. Sample explanation: “Adding 20 adds two tens. Then the ones make another ten.” Both strategies work because addition can be grouped in different steps while keeping the same total.

3. Lina: 63 = 6 tens 3 ones. Trade 1 ten for 10 ones: 5 tens 13 ones. Take away 2 tens and 8 ones. The result is 3 tens 5 ones, so 63 - 28 = **35**. Sample explanation: “Lina has only 3 ones but needs to take away 8 ones. She trades 1 ten for 10 ones, so she has 13 ones.”

4. Ben: Ben did not trade a ten for 10 ones before trying to remove 8 ones from 3 ones. Sample response: “Ben cannot take 8 ones from 3 ones. Lina trades 1 ten, so 3 ones becomes 13 ones. Then she can take away 8 ones.” The correct difference is **35**.

Quick scoring rubric: 12 points total. Score each item for 3 points. Item 1: 1 point for a model showing 5 tens and 13 ones renamed as 6 tens 3 ones; 1 point for 63; 1 point for an explanation that 10 ones make 1 ten. Item 2: 1 point for a model showing 36 plus 2 tens, then 7 ones, with 10 ones renamed; 1 point for 63; 1 point for a place-value explanation. Item 3: 1 point for a model showing 6 tens 3 ones renamed as 5 tens 13 ones and then 3 tens 5 ones; 1 point for 35; 1 point for explaining that there were not enough ones before the trade. Item 4: 1 point for identifying that Ben forgot to trade or rename 1 ten as 10 ones; 1 point for explaining that 8 ones cannot be removed from 3 ones until the trade; 1 point for 35. A student may have a correct answer but needs explanation evidence to demonstrate the target skill.