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## Testing 1, 2, 3, 4

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Testing 1, 2, 3, 4 helps students who have a possible solution to a problem but aren't sure how to test that solution. When students say, "I'm done, did I do it right?" this activity provides concrete ways for them to answer that question for themselves.

Help students work through these questions:

1. Constraints: Does your result work with all of the constraints in the problem? Review all of the information given and make sure you have tested the result with all of it.
2. Accuracy: Have a method for going over your work to test its accuracy: do the inverse operations, reverse your calculations, question your logic and assumptions at each step, and so on.
3. Different way: Solve the problem using a different strategy and see if the results come out the same.
4. Reasonable: Can you explain why your answer makes sense or is reasonable using logic or estimates or drawing on experience?

Key outcomes for students:

- ▶ Learn multiple methods for checking solutions.
- ▶ Develop the habit of looking for constraints.
- ▶ Develop the habit of checking arithmetic.
- ▶ Develop the habit of continuing problem solving after finding one possible solution.
- ▶ Develop the habit of asking, "Is this reasonable?"

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**Test 1: Constraints**

**Test 2: Accuracy**

**Test 3: Different way**

**Test 4: Reasonable**