K(3) Number and operations. The student applies mathematical process standards to develop an understanding of addition and subtraction situations in order to solve problems.	**K(3)(A)** The student is expected to model the action of joining to represent addition and the action of separating to represent subtraction.

Materials

- 10 counters

Procedure: Provide students with counters.

Ask students to solve each of the following problems. Ask students to justify his or her answer by answering the question, "How do you know?"

1. **You have 2 pencils, and I give you 1 more. How many pencils will you have?**
2. **There are 3 books on the table. Your mom puts 2 more books on the table. How many books will be on the table?**
3. **You have 5 french fries, and your friend gives you 2 more. How many french fries will you have?**
4. **There are 6 cows in the barn and 3 cows in the field. How many cows are there?**
5. **There are 2 birds in the tree, and 1 flies away. How many birds are left?**
6. **There are 5 cars in the parking lot, and 2 drive away. How many cars are left?**
7. **You have 6 apples and eat 2 of them. How many apples do you have left?**
8. **The tree has 8 apples, and you pick 5 apples off the tree. How many apples does the tree have left?**

This activity may be repeated using different numbers or different context.

Check Student's Responses:	**Check Student's Strategies:**
1. 2 + 1 □ 3 □ _____ □ The student could justify the answer.	□ Counted aloud □ Used the counters □ Used his or her fingers □ Other:
2. 3 + 2 □ 5 □ _____ □ The student could justify the answer.	□ Counted aloud □ Used the counters □ Used his or her fingers □ Other:
3. 5 + 2 □ 7 □ _____ □ The student could justify the answer.	□ Counted aloud □ Used the counters □ Used his or her fingers □ Other:

4. 6 + 3 □ 9 □ _____ □ The student could justify the answer.	□ Counted aloud □ Used the counters □ Used his or her fingers □ Other:
5. 2 – 1 □ 1 □ _____ □ The student could justify the answer.	□ Counted aloud □ Used the counters □ Used his or her fingers □ Other:
6. 5 – 2 □ 3 □ _____ □ The student could justify the answer.	□ Counted aloud □ Used the counters □ Used his or her fingers □ Other:
7. 6 – 2 □ 4 □ _____ □ The student could justify the answer.	□ Counted aloud □ Used the counters □ Used his or her fingers □ Other:
8. 8 – 5 □ 3 □ _____ □ The student could justify the answer.	□ Counted aloud □ Used the counters □ Used his or her fingers □ Other:
Notes:	

K(3)(A) The student is expected to model the action of joining to represent addition and the action of separating to represent subtraction.	**Possible interpretations, issues to follow up on, and implications for teaching**

What did you observe?

- The student **counted aloud.** This is an appropriate strategy.
- The student **used his or her fingers**. This is a reliable strategy for small numbers, but it is not efficient, particularly for larger numbers.
- The student **used counters.** Consider how he or she used the counters to solve the problem:
  - The student counted from 1.
  - The student counted on from the larger number (e.g., for '5+2' she selected 5 blocks and counted five, six, seven).

How do you know?

After a student solves a problem, regardless of accuracy, ask the student to justify his or her response in order to further understand the student's thinking.