

Count Forward and Backward from Any Number

Student Probe

Sam picked 38 apples. Then he picked 5 more apples. How many apples did Sam pick?

Sam picked 63 apples. He gave 5 apples to Sue. How many apples does Sam have left?

Lesson Description

This lesson uses direct modeling of a problem and teaches students to conserve the starting number in a problem, counting up or down to solve the problem.

Rationale

Solving problems accurately and efficiently is a characteristic of fluent and effective mathematics students. Using counting up and counting down strategies can improve the efficiency of counting when items are added to or taken away from an already counted set.

Preparation

Students should have access to 120 ones cubes and a hundreds number chart.

At a Glance

What: Count forward and backward to 120

Common Core State Standard: CC.1.NBT.1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Mathematical Practices: Make sense of problems and persevere in solving them.

Who: Students who have difficulty counting forward and backward

Grade Level: 1

Prerequisite Vocabulary: None

Prerequisite Skills: conservation of number, ability to direct model a problem

Delivery Format: Individual or small group

Lesson Length: 20 to 30 minutes

Materials, Resources, Technology:

Ones cubes and hundreds chart

Student Worksheets: None

Lesson

| The teacher says or does... | Expect students to say or do... | If students do not, then the teacher says or does... |
|--|---------------------------------|--|
| 1. Sam picked 38 apples. Then he picked 5 more apples. How many apples did Sam pick? | 38, 39, 40, 41, 42, 43 | Look at this pile of ones cubes. There are 38 cubes in this pile. Put the number 38 card under the pile. |
| 2. How many more apples did Sam pick? | 5 | The problem tells you that Sam picked 5 more apples. |
| 3. How can you show the 5 more apples that Sam picked? | 5 ones cubes | Use the ones cubes to represent the 5 apples Sam picked. |

| The teacher says or does... | Expect students to say or do... | If students do not, then the teacher says or does... |
|--|---------------------------------|--|
| 4. How many apples did Sam pick in all? | 38, 39, 40, 41, 42, 43 | Remember there are 38 cubes in this pile. See the number 38 card. Can you say 38 and slide the 5 more cubes as you count on? |
| 5. What will it sound like when you say 38 and slide the 5 more cubes as you count on? | 38, 39, 40, 41, 42, 43 | Find 38 on the hundreds number chart. Circle the number 38 with a dry erase marker. Say 38 and count on as you put 5 more cubes on the numbers that come after 38. 38,39,40,41,42,43 |
| 6. How many apples did Sam pick in all? | 43 | Find 38 on the hundreds number chart. Circle the number 38 with a dry erase marker. Say 38 and count on as you put 5 more cubes on the numbers that come after 38. 38, 39, 40, 41, 42, 43 |
| 7. Listen to this problem: Sam picked 63 apples. He gave 5 apples to Sue. How many apples does Sam have left? | 63, 62, 61, 60, 59, 58 | Look at this pile of ones cubes. There are 63 cubes in this pile. Put the number 63 card under the pile. |
| 8. How many apples did Sam give to Sue? | 5 | The problem tells you that Sam gave 5 apples to Sue. |
| 9. What will you do to show that Sam gave 5 apples to Sue? | Take away 5 | When Sam gave 5 apples to Sue, it tells you that those apples must be separated from Sam's apples. |
| 10. What will it sound like when you separate the 5 apples Sam gave to Sue? | 63, 62, 61, 60, 59, 58 | Remember there are 63 apples in this pile. In order to give 5 apples to Sue, you must remove 5 apples and count down to find how many apples Sam has left. |

| The teacher says or does... | Expect students to say or do... | If students do not, then the teacher says or does... |
|---|--|--|
| 11. How can you count down to find how many apples Sam has left? | 63, 62, 61, 60, 59, 58 | Find 63 on the hundreds number chart. Circle the number 63 with a dry erase marker. Say 63 and count down as you cover numbers with the 5 cubes Sam gave to Sue. |
| 12. Will you cover the numbers greater than 63 or the numbers less than 63? How do you know? | Less than 63. Because Sam gave 5 apples to Sue, he can't get more. He must have less than 63. | If Sam gave 5 apples to Sue, is he getting more? No If Sam is not getting more then he is getting less, so you will cover the numbers that come before 63. |
| 13. If you circled 63, what numbers will you cover to show that Sam gave 5 apples to Sue? | 63, 62, 61, 60, 59, 58 | Say 63, the number you circled, and count down 5 numbers. 63, 62, 61, 60, 59, 58 |

Teacher Notes

None

Variations:

Count Forward

1. Frank collected 77 baseball cards. Then he got 6 more baseball cards. How many baseball cards does Frank have now?
2. There are 114 cans on the shelf. The worker put 6 more cans on the shelf. How many cans are on the shelf now?

Count Backward

1. Alicia has 102 stickers. She gave 5 stickers to her friend. How many stickers does Alicia have left?
2. There are 112 fish in the pond. Thomas caught 3 fish from the pond. How many fish are in the pond now?

Formative Assessment

Students should direct model the language of the problem using ones cubes and hundreds number chart.

1. There were 35 boys and 27 girls on the playground at recess. How many children were on the playground at recess?
2. There were 51 ducks on the pond. 28 of the ducks flew away. How many ducks were left on the pond?

References

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- Russell Gersten, P. (n.d.). *RTI and Mathematics IES Practice Guide - Response to Intervention in Mathematics*. Retrieved 5 13, 2011, from rti4success.
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