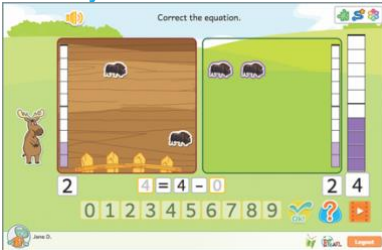


SUBTRACT, STEP 3

Lesson Plan: Number Concept, Subtract, Step 3

Activity Screen Shot



Theme Host: Chuck



Animal Friend: Muskox



OVERVIEW

Similar to Steps 01 and 02, students “subtract” by moving animals from one set to another. After moving animals between sets students are required to correct the equation to represent the new situation.

PRINCIPAL LEARNING GOAL(S)

- Reinforce the idea that an equation is a symbolic/mathematical description of the number relationships seen between the numbers of objects in two sets and the total number of objects in both sets together
- Familiarize students with writing equations representing subtraction

PREREQUISITE KNOWLEDGE AND SKILLS

- Already seen/understood subtraction as taking objects away from a given pile, moving them into a new pile

RESOURCES NEEDED

- Blackboard and chalk or Lego pieces

POTENTIAL DIFFICULTIES

- Some students may have difficulty with phase 3, “correcting the equation” so for such students ask them which part of the equation represents the “barn”, the “pasture” and the “total”.

WARM UP ~ 3-5 MINUTES

Show students a tower made of Lego pieces. Ask them how many pieces there are in the tower. Then take a few pieces off the top (say 3) and make another tower next to the original tower. Ask students to describe the equation that you should write to represent the subtraction that took place and when there is agreement write the equation on the board. Repeat the process taking a different number of pieces off the full tower. Compare the two equations and ask the class what changed and what didn't change.

CONSOLIDATION ~15 MINUTES

To help students consolidate their new knowledge and make connections to prior learning, allow time for subsequent discussion. The questions below raise important issues:

- 1) *What happened on the screen when you moved the first muskox from the barn to the pasture?*

You are looking for the students to say that when a muskox moves from the barn to the pasture, the counter for the barn loses one coloured cell and the pasture gains one. Also, the numeral in the number box under the barn changes, going down one while the numeral in the number box under the pasture also changes, going up by one. Meanwhile the Total counter and the numeral underneath it do not change at all. Also certain numbers in the equation faded. Follow up with another question: "Why do you think those numbers faded?"

- 2) *What does each number in the equation represent?*

Note that for some examples, where the numbers of muskoxen in the barn and in the pasture are the same, the situation can be ambiguous. Try to avoid having such an example projected when asking this question. The answer that you are looking for is that each number in the equation corresponds to one of the number boxes, either that under the barn, under the pasture, or under the total counter, and try to have the students identify which is which and explain how they know this. Students should be much more fluent in this task since you already discussed this question in your previous lesson, Step 02.

- 3) *John/Mary, a student in my class a few years ago said that instead of writing the equation with a minus sign, he/she could write an equation with the same numbers and a plus sign. Is this possible? How?*

This is a difficult concept. The idea is that we can either express the total number of muskoxen as the sum of muskoxen in the barn (or pasture) and muskoxen in the pasture (or barn), or we can express the number of muskoxen in the barn (or pasture) as the total number of muskoxen minus the number of muskoxen in the pasture (or barn). Thus, not counting the possibility of interchanging the right hand side of an equation with the left hand side, there are four different correct ways to write an equation that represents the information seen in the picture on the screen.

