ADD, STEP 4

Lesson Plan: Number Concept, Add, Step 4

Activity Screen Shot

Theme Host: Chuck

Animal Friend: White-Tail Deer

OVERVIEW

Students practice concretizing mathematical equations such as "2+3=5" by creating two sets of objects that represents the two addends, "2" and "3", to help visualize addition as the combining of two sets of objects.

PRINCIPAL LEARNING GOAL(S)

- Reinforce student understanding of equations of the form "2+3=5", used in mathematics to represent addition, as the action of combining two sets of objects together
- Reinforce in students the habit of using concrete images to help interpret abstract mathematical expressions
- Reinforce students' habit of being metacognitive, i.e., recognizing their own errors, principally via consolidation after this software step

PREREQUISITE KNOWLEDGE AND SKILLS

- Student has seen and written equations such as "2+3=5" represent addition, in the context of combining two sets of objects

RESOURCES NEEDED

- Lego blocks or large coloured beads and three non-transparent bags

POTENTIAL DIFFICULTIES

- Students still experiencing difficulty in recognizing what number a given numeral represents, seen as a student counts aloud correctly while clicking on animal icons, but cannot choose that number from a list: 1, 2, 3, 4, 5, 6, 7, 8, 9. To test, draw between 1 to 9 circles and a list: 1, 2, 3, 4, 5, 6, 7, 8, 9. Ask the student to count aloud while touching the circles. Then ask the student to pick the last number he/she said aloud from your list. If the student cannot, then suggest a review of activities in Idea 1.
- Student not understanding how to represent a given addition equation and the act of combining two sets of objects into one set of objects. Test by pointing to an equation on screen and asking what each number in the equation represents in the picture. If the student cannot do this suggest a review of the previous step.

WARM UP ~ 3-5 MINUTES

- Show students two non-transparent bags with objects inside (e.g., 4 and 3). Invite two students, each to count the objects in a different bag. As the students say their count, mark the bag with the number.
- Remind students that we can represent the act of combining to obtain a total in the two bags by using an addition equation. Do this on the board with students calling out the numbers. Then suggest we use fingers, always handy, instead. Alternatively, remove Lego blocks from the bag, build two towers and then combine them into one.

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 was this step about? What were you supposed to do?*
   It is possible that students' descriptions of the problem is incomplete or that their wording is unclear. Help the students to describe the situation in detail using appropriate vocabulary, e.g., "mathematical equation", "sum", "add two numbers", etc.

2) *Clara sees the expression "3+2=5". She then put 5 deer in the right hand field. Will she be able to finish this correctly? Explain your answer.*
   You are hoping that the students will say that the "5" in the equation is supposed to represent all of the deer in both fields so Clara should not have started out with 5 deer in one field, but instead either 3 or 2. If no student says this, again illustrate with Lego blocks (a tower of 3 blocks, a tower of 2 blocks, put together to make a final single tower of 5 blocks) and ask them what each number in the equation represented in your tower example.

3) *Suppose you want to help Clara after she put 5 deer in the right hand field. What would you suggest to Clara?*
   Hopefully at least one student will say that if you remove 2 deer from the field, so that there are only 3 deer left, you can then put 2 deer in the other field and have a correct answer.

4) *Clara's friend Ruth asked Clara if the equation "4+5=8" was correct. Can you explain to Ruth whether or not this is correct, perhaps using Lego blocks to show Ruth how you would test such an equation?*
   If no student spontaneously does this, then ask them all to make two Lego towers to show you the 3 and 2, and then to combine them to see what they obtain.