COMPARE, STEP 2

Lesson Plan: Number Concept, Compare, Step 2

Activity Screen Shot

Theme Host: Chuck

Animal Friend: Grizzly Bear

OVERVIEW

Continuing the whimsy of hockey playing bears students compare (=, >, or <) the cardinality of a set of bears and a set of hockey sticks.

PRINCIPAL LEARNING GOAL(S)

- Compare the cardinality of two sets, determining if the cardinalities are the same, or if not, which one is larger
- Develop an understanding of the meaning of the symbols =, > and <
- Use the symbols =, > and < appropriately to express the relationship between the cardinalities of two given sets

PREREQUISITE KNOWLEDGE AND SKILLS

- Practiced the act of counting physical objects
- Comfortable with matching the numerals 1 to 9 with the counting numbers 1 to 9

RESOURCES NEEDED

- Coloured pencils (see Warm Up below)
- Lego blocks

POTENTIAL DIFFICULTIES

- Some students may still have difficulty counting objects in a set and matching this with the appropriate numeral. Additional practice with fifth step in Count should help.
- Some students may experience difficulty comparing the number of bears with the number of sticks. Such students may benefit from having physical objects, e.g., Lego blocks, to replicate what they see on the screen.

WARM UP ~ 3-5 MINUTES

This activity is designed to guide students toward the notion that comparing the “size” of two sets is easily done by matching pairs of objects, one from each set. Bring coloured pencils to class: 3 blue, 5 red, and 8 yellow. Invite a group of 5 students to come to the front. Ask the class if there enough yellow pencils for each student at the front to have one. When they say yes, agree and hand a yellow pencil to each student and say, and I even have some yellow pencils left over. Repeat this with the other colours.

MAIN ACTIVITY ~ 20 MINUTES

Students count bears and hockey sticks separately, answering using numerals. Next students match bears to hockey sticks. Finally students choose one of "is equal (=)", "is greater than (>)" or "is less than (<)" to express the relationship between the number of bears and the number of hockey sticks.

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) *Sometimes the number of bears was the same as the number of hockey sticks and sometimes they were not the same. How did you know when these two numbers were the same?*
   In listening to the student answers you are hoping to hear that when the bears were matched with hockey sticks: if all bears and all hockey sticks were used, then the numbers were equal; if some bears were left and all hockey sticks were used, then the number of bears was bigger than the number of hockey sticks; if all bears were given hockey sticks and there were still some hockey sticks unused, then the number of bears was smaller than the number of hockey sticks. You can paraphrase what the students say to try to make it simpler, as in, after matching bears and hockey sticks, if one set still has unmatched objects, then that set is bigger and the other set is smaller. You may also remind them of the warm up activity with the coloured pencils.

2) *In the previous activity what mathematical symbol did we learn? What did it mean? If I say that I have 5 apples and 5 pears, how can we write that using the mathematical symbol and how would we say it in words?*
   If the students don't mention it, remind them that they learned about the symbol "=" (equals sign) and that it means that two sets of objects have the same quantities of objects. For example, they should be able to say that we write 5 = 5 and that it means that the number of apples is the same as, is equal to or is as many as the number of pears.

3) *In this activity we learned to use two new symbols, “>” (bigger than) and “<” (smaller than). A student in another class was doing the same activity as you were. The student got the four following answers (write them on the board): 6 > 3, 4 = 4, 3 < 8 and 5 < 2. Can you tell me what the student's conclusions were?*
   The students should answer that: 6 > 3 means that there were 6 bears and 3 hockey sticks and that there were more bears than hockey sticks; 4 = 4 means that there were 4 bears and 4 hockey sticks so that the number of bears and the number of hockey sticks were equal; 3 < 8 means that there were 3 bears and 8 hockey sticks so that the number of bears was less than the number of hockey sticks; and 5 < 2 means that there were 5 bears and 2 hockey sticks and the student was incorrect in saying that there were less bears than hockey sticks because 5 is bigger than 2, not smaller than 2. Note that it is useful to try to lead the discussion to the understanding that when not translating the expressions back to the context of bears and hockey sticks, writing “6 > 3” is equivalent to writing “3 < 6”.