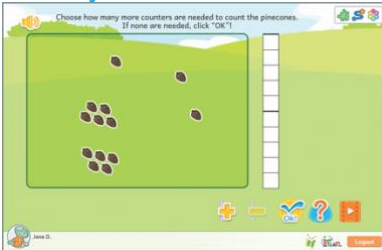# PLACE VALUE, STEP 2

Lesson Plan: Number Concept, Place Value, Step 2

Activity Screen Shot

Theme Host: Chuck

Animal Friend: Golden Retriever

OVERVIEW

This step focuses on helping students develop an understanding of the number of counters used to represent numbers between 1 and 29.

PRINCIPAL LEARNING GOAL(S)

- Make students aware of the relationship between the number of counters needed to represent a number between 1 and 29 and the number of "tens"
- Increase fluency in using multiple counters to represent numbers between 11 and 29

PREREQUISITE KNOWLEDGE AND SKILLS

- Students should have been introduced to using multiple counters to represent the numbers between 11 and 29
- Students should have seen written numbers between 10 and 20, and perhaps written such numbers

RESOURCES NEEDED

- Images of groups of five objects and individual objects (Appendix 1)

POTENTIAL DIFFICULTIES

- Some students may still not have learned that the number of counters visible is always equal to the number of trees (10's) plus one (for loose pinecones). Review of the previous step with a discussion may help these students.

WARM UP   ~ 3-5 MINUTES

Display groups of five objects and individual objects (see Appendix 1 below for sample images) and then ask students to hold up left hand fingers to indicate how many "tens" of objects they see. Then ask students to hold up fingers in their right hand to indicate how many individual objects they see that are not part of the "tens". Finally, ask students how many counters they would need to represent all of the objects they see.

MAIN ACTIVITY ~ 20 MINUTES

Initially students are shown a field containing pinecones and asked to choose how many counters are needed to count the pinecones. Then students are asked to use the counters to count the pinecones. The teacher assists when necessary.

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) *How did you choose how many counters were needed to count the pinecones?*
   There are two types of strategies that a student may employ to carry out this task:
   a) The first type of strategy focuses on separately determining how many "tens" of pinecones or "trees" there are (assigning one counter per "tree"), and then assigning one counter for any leftover pinecones not in a "ten" or "tree". This strategy does not require the student to determine the total number of pinecones in the field, and thus can be seen as simpler. However, after playing the activity a few times, some students may realize that the second phase of the step requires knowing the total number of pinecones, hence it is useful to take that approach right from the beginning.
   b) The second type of strategy focuses first on determining the total number of pinecones, and once this has been determined the student recognizes that the first digit represents the number of "trees" and hence full counters needed, and any second digit other than 0 requires an additional counter. Whether the students are using the first or second type of strategy, it is important that they are not counting all pinecones individually, ignoring the fact that there are groups of five pinecones, which can aid the counting process. Such groups of five can be used to quickly and more accurately determine the number of "trees" (as in "these two groups of five make one "tree", etc."), or the total number of pinecones (as in adding "5+5=10, 10+5=15, etc.", or counting "5, 10, 15, etc.").

APPENDIX 1