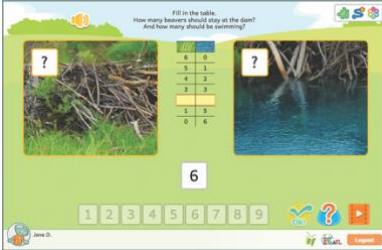


DECOMPOSE, STEP 4

Lesson Plan: Number Concept, Decompose, Step 4

Activity Screen Shot



Theme Host: Chuck



Animal Friend: Chipmunk



OVERVIEW

This step focuses on decomposition of a number into two components and it reinforces the idea that the sum of the two components of a number is equal to the number.

PRINCIPAL LEARNING GOAL(S)

- Understand that a composite number is equal to the sum of the sum of two component numbers
- Reinforce understanding of the patterns visible in a decomposition table

PREREQUISITE KNOWLEDGE AND SKILLS

- Used the decomposition table in the two previous activities
- Partitioned sets of objects into two subsets

RESOURCES FOR THE LESSON

- Lego Blocks
- A set of “number cards” running from 0 to 10 for each students (see Appendix 1)

POTENTIAL DIFFICULTIES

- Students doing the task mechanically and thus, not drawing a conclusion that every number can be thought of as a sum of two (smaller) numbers so debate with such students the difference between the previous step, where sets of beavers were partitioned into at the dam versus swimming in the water and this new step which only uses numbers.

WARM UP ~ 3-5 MINUTES

Say "I am thinking of a number and I am holding up the two components of this number. When I clap you will hold up two different components of the same number." This activity can be repeated a few times for different numbers.

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) *Ask students if they know what an "even" number means. The traditional definition involves division by 2 leaving a remainder of 0, but this is not useful here.*
Listen to what the students say because some of the students may already have come up with their own ideas. Perhaps the simplest way to explain the concept of "even number" is to tell a story. My friend is coming over to visit and I want to put out a plate of cookies, but I want each of us to have exactly the same number of cookies, with none left over. Can I put out 4 cookies? If I do, how many will each of us have? Can I put out 5 cookies? Can I put out 6 cookies? (We suggest that you use Lego or Mega blocks to illustrate instead of cookies.)
- 2) *Engage the students in discussion concerning "counting by 2's", i.e., 2, 4, 6, 8,*
Using Lego or Mega blocks to illustrate, we can see that if 2 cookies can be split evenly between a friend and yourself. If we add 2 more cookies (now at 4), we just added 1 cookie for each of us, so again we can split evenly, etc.
- 3) *To complete the discussion of even numbers you should now discuss their counterparts, the odd numbers.*
Again, using Lego or Mega blocks to illustrate, we can see that with 1, or 3, or 5, etc., cookies, after splitting evenly between a friend and yourself, we would have 1 cookie left over. (Blocks are particularly helpful when a student suggests breaking a cookie in half to split it. Don't discourage the idea of splitting in half, other than to say perhaps that cookies are particularly difficult to break exactly in half. You may want to come back to this idea when teaching fractions.)
- 4) *Now set out 10 Lego or Mega blocks in front of the class. Ask the students if this is an even number, and if it is, how do we split it evenly?*
Hopefully many students will be ready to explain this to you. After this, give each student a double deck of number cards that run from 0 to 10 (see Appendix 1 below) and encourage the students to use the cards at their desks and to help you build an organized table of decomposition of 10, with 5 | 5 as the middle row. When working with two digit numbers, having the various decompositions of 10 at their fingertips will make many tasks much easier.

APPENDIX 1

Appendix (Number cards 0 to 10)		
0	1	2
3	4	5
6	7	8
9	10	0
1	2	3
4	5	6

