

Counting with Rocks

Represent Numbers Using Rocks

This activity encourages young mathematicians to use addition and subtraction to represent (model) numbers to 10.

Activity Challenge

Represent numbers to 10 as a group of five plus or minus some ones.

Preparation

1. Gather materials and select a workspace. Workspace should have a smooth surface, such as a table, countertop or floor.
2. Recreate or print the 10 five-dot cards (see next page).
3. Collect 10 rocks from backyard or neighborhood. If rocks are not available, use marbles, cheese crackers, grapes, etc.

To Do

1. Place the rocks into two rows of five. Have the student count the rocks to make sure that there are ten rocks.
2. Have the student pick up one rock and represent the one rock on one of the five-dot cards. (Hint: crossing out or adding more dots is an option).
3. Next, have the student pick up two rocks and represent the two rocks on one of the five-dot cards.
4. Repeat until the student correctly represents ten rocks.

Observations

Have student describe the characteristics of each rock they pick up (color, size, texture, etc.) How many dots do you need to cross out (subtract) to represent a certain number? How many dots do you have to add?

Extensions

- Write the equations to correspond with each five-dot cards. (ex: $5 - 4 = 1$, $5 + 3 = 8$)
- Create and solve a word problem using the rocks.
- Do the activity again using 20 rocks and ten-dot cards.

The Content behind the Activity

Subtraction in mathematics means taking something away from a group or set number of things. When subtracting, what is left, also called a difference, is less than the starting total. For example: $5 - 3 = 2$, that is, the difference between 5 and 3 is 2. Subtraction and addition are closely linked math operations. Addition in mathematics means adding something to a number of things. Subtraction and addition are inverse, meaning that subtraction problems can be checked by using addition, and vice versa. For example: $2 + 3 = 5$, $5 - 3 = 2$.

Materials Needed

- Pencil or pen
- 10 rocks
- 10 five-dot cards

Grade Range

Pre-K
K-2

Topics/Skills

Math: Counting; Adding;
Subtracting; Greater than,
Less than

Learning Standards

CCSS: [Operations & Algebraic Thinking](#)

Duration

25 minutes

Prep Time

10 minutes

