RAFT IDEAS

Topics: Estimating, Counting, Mathematical Reasoning, Vocabulary Development

Materials List

- ✓ A clear container with a lid
- ✓ Identical or very similar objects that will fit into the jar.

This activity can be used to teach:
Common Core Math Standards:

- Counting (Grade K, Counting and Cardinality, 1, 5, 6)
- Addition, subtraction, and counting (Operations and Algebraic Thinking, Grade K, 1; Grade 1, 1, 5)
- Problem Solving and Reasoning (Mathematical Practices Grades PK-6)
- Vocabulary development
- Co-operative learning

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The Estimating Jar

What Makes a Good Guess?

This activity provides a fun, non-threatening way to help students develop important estimation and mathematical reasoning skills.

Assembly

Place a number of objects into the jar. Select a number that is appropriate to the age and skills of the students.

Using the Activity

(Teacher Note: Repetition is the key for successful skill development. Repeat the following steps several times and often for the best results.)

1. Present the jar of objects to a group of students. Encourage observations (e.g.- How full is the jar? Are the objects large or small?)
2. Tell students that they are to "estimate" the number of items in the jar. Emphasize process over product – that is, making a good guess based on observation, rather than being able to state the correct number by chance.
3. When they are ready to make their estimates, let each student tell how many objects he/she believes are in the jar and to say why they think so. Record the estimates for comparison.
4. Review the estimates. Which is the largest/smallest? Did two students estimate the same number? Were their reasons the same? Are all the estimates close together or do they vary widely? Why?
5. Open the jar and count the objects as you remove them from the jar.
6. Compare the estimates with the actual count.

The Math Behind the Activity

Estimation is an important problem-solving skill. It involves observation, the ability to gather and assess data, and the opportunity to use that data to arrive at a conclusion, which can be explained to others. Through guided hands-on problem-solving activities like ***The Estimating Jar***, children learn that there are many ways to think through an issue and solve a problem. Early childhood educators have a unique "window of opportunity" to encourage process over product and the development of problem solving skills. Estimation emphasizes process over product in mathematics. This activity also builds language and social skills.

Taking it Further

- Have students take the jar home and fill it with objects for their peers to estimate and count.
- Can you create a pattern with the objects?
- Introduce the concepts of "more than" and "less than" in making estimates (e.g. "I estimate that there are more than 10 objects in the jar.")

Web Resources (Visit www.raft.net/raft-idea?isid=139 for more resources!)

- Teacher designed math courses – https://njctl.org/courses/math

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