Get Better at Guessing

Subject: Math

Grade Level: K-2nd grade

Summary: Students will work in groups to examine a jar of coins to make both "guesstimations" and more precise estimations.

BIG QUESTION

What is the difference between spending and saving?

TIMING

0 to 45 minutes

LEARNING OBJECTIVES

- Students will practice estimation skills.
- Students will learn how to make better estimations.
- Students will work in groups and discuss information about their guesses and estimates.

MATERIALS

- Jar filled with 75 to 100 pennies
- Math journals
- Class chart divided into 2 columns labeled “Our Penny Guesstimates” and “Our Penny Estimates”
- Sticky notes, a different color for each group (each group will be 3-5 members)

PROCEDURE

Before the Lesson (10 minutes)

1. Fill a clear jar with 75 to 100 pennies.

2. Display the jar filled with pennies in the classroom a few days before the lesson starts. Let the students make observations about the pennies in the jar but not take the pennies out of the jar.

Day of the Lesson – Introduce Activity and Start Guessing (15 minutes)

1. Divide students into groups with 3 to 5 members. Explain that groups will make a "guesstimate," which is similar to a guess.
2. Have each group come up with a group guesstimate for the number of pennies in the jar. Each group can have a chance to examine the jar before making their guesstimate.
3. Have each group write their guesstimate on a sticky note and place it on a classroom chart.
4. Remove about half of the pennies from the jar. Have the class decide how to determine about half.
5. Count out the half of the pennies that were removed.
6. Allow each group to make an estimate based on this new information. Have each group put their estimate on a different colored sticky note and add it to the classroom chart. Keep the group's guesstimate and estimate next to each other.

Reflect, Present, and Discuss (20 minutes)

1. Have the students in their groups answer the following questions. The students can write their group answers in their math journal.
    - What is the order of the guesstimates from lowest to highest?
    - What is the order of the estimates from lowest to highest?
    - What is the range for the guesstimates?
    - What is the range for the estimates?
2. Find the differences between the guesstimates and estimates for each group.
3. Have students present their answers to the class.
4. Pick a group to count the total amount of pennies in the jar and add the actual number to the chart.
5. Discuss as a class different strategies for making better estimates.

ASSESSMENT

Assess the groups' learning based on the information in their math journals and on the group presentation they gave when they answered the above questions. Give grades to the groups.

DIFFERENTIATE

- Allow students to work independently.
- Create multiple jars with different amounts of coins or other items

RELATED

- Penny information page
- Counting With Coins game

STANDARDS

Common Core Standards

CCSS.MATH.CONTENT.K.MD.B.3

Classify objects and count the number of objects in each category.

CCSS.Math.Content.K.CC.A.1
Count to 100 by ones and by tens.

CCSS.Math.Content.K.CC.A.2
Count forward beginning from a given number within the known sequence (instead of having to begin at 1).

CCSS.Math.Content.K.CC.A.3
Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects).

CCSS.MATH.CONTENT.K.CC.C.6

Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies

CCSS.MATH.CONTENT.K.CC.C.7

Compare two numbers between 1 and 10 presented as written numerals

CCSS.Math.Content.K.CC.B.4
Understand the relationship between numbers and quantities; connect counting to cardinality.

CCSS.Math.Content.K.CC.B.5
Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects.

CCSS.MATH.CONTENT.1.MD.C.4

Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.