PROBLEM SOLVED
MAKING SENSE OF MATHEMATICS

Mean, Median, Mode (Part 1)

Family Activity

This activity involves students collecting data, representing the data in a bar graph, and determining the mean, median, and mode for the data. The activity starts by having each person grab a handful of items from a large container. The activity will work best with five to 10 people. If you have fewer people, additional data may be gathered by having everyone grab a handful of items with both their left and right hands. If you have more people, you will need more post-it notes, and it may take longer to analyze your data.

Materials:

- large container of identical items (marbles, bite-size candy bars, or something similar.) Note that the smaller the items, the larger the numbers you will have in your data set.
- small post-it notes
- pencils
- piece of poster paper (optional)

Directions:

1. Each person should grab one handful of items and count how many were grabbed. If you do not have enough items for everyone to get a full handful, you may count the items and replace them before the next person grabs a handful.

2. Each person should take one post-it note for each item grabbed and write his or her initials on each post-it note.

3. As a group, construct a bar graph with the post-it notes on a large piece of paper, a table, or the floor. Each person's post-it notes should form one bar indicating how many items he or she grabbed.

4. Study your bar graph. How would you describe the typical, common, or average number of items grabbed by one person in your group? After discussing this question, continue with number 5 below.

5. Rearrange the bars of your graph, so the bars go in order from smallest to largest. How many post-it notes make up the middle bar? This is the median – one way to describe the number of items grabbed by a typical person in your group. If you have an even number of bars, you won't have a middle bar. If that is the case, determine what number would be halfway between the two middle bars.

6. Did more than one person grab the same number of items? Another way to describe the typical number is to use the number that occurs most often, which is the mode. You may find that some sets of data have two modes, with two numbers equally common. When data sets have two modes, the data are described as bimodal. If data sets have more than two sets of numbers that occur equally often, the data set is multimodal.

7. A third way to describe the typical number of items is to find the mean. Do this by making all the bars of your graph the same height. You may have to cut some post-it notes in half, thirds or fourths. How many post-it notes make up each bar of your graph now? This is the mean of your data.

8. Discuss which value – mean, median, or mode – best describes what the typical, common, or average number of items grabbed by one person in your group.

MakingSense