RAFT IDEAS

Topics: Numerical Sequence, Mean, Median, Mode, Range
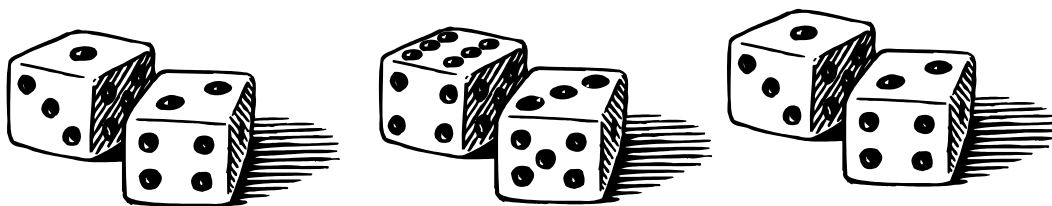
Materials List
- ✓ 6-sided die
- ✓ Data Sheet, see page 2

This activity can be used to teach:
- Statistics and Data (Common Core Math Standards: Statistics and Probability, Grade 6, 1-5; Grade 7, 5-7)

Medi, Meany, Midi, Mode
Find the Median, Mean, Midpoint, and Mode

Use successive rolls of a die to produce numerical sequences, and investigate differences among the median, mean, and mode.

To Do and Notice
1. Roll a single die six to ten times to produce a numerical sequence. Record each number under Trial 1 in the top part of the Data Sheet.
2. Copy the roll values, in ascending order, lowest to highest, into the bottom table.
3. Which value occurs the most often? This is the **Mode** (the most common value in the numerical sequence), record the Mode in the bottom table. If more than one number "ties" for the most occurrences, write the numbers separated by commas.
4. Find the **Median** (the middle value of the numerical sequences). If there are an odd number of values – this is the middle number in the ascending order list. If there are an even number of values – add the two middle values and divide by 2.
5. Add all the values in Trial 1 to find the total. Record.
6. Divide the total by the number of values to find the **Mean**.
7. Subtract the lowest value from the highest to calculate the **Range**.
8. Repeat steps 1 to 7 for 3 to 8 additional trials; vary the number of rolls used.
9. Note the variations between the Median, Mean, and Mode, and between the trials.

The Math Behind the Activity
Mathematicians commonly want to know the value which represents the middle or average of a sequence of numbers. This average can be determined in several ways, the mean, median, and mode being the most used techniques. Each type of average has different characteristics; by using several types at the same time it is easier to develop a more accurate analysis of the data. In this activity, does a value tend to come up more often than others?

Taking it Further
- Create a sequence by rolling 2 dice and adding the values; analyze and compare.
- Create sequences by rolling dice with different numbers of sides. .
- Analyze other sets of numerical data - determine the mean, median, and mode.
- Create a game that utilizes the mean, median, and mode.

Web Resources (Visit www.raft.net/raft-idea?isid=619 for more resources!)
Mean, Median, Mode Calculator
http://www.easycalculation.com/statistics/mean-median-mode.php
- Mean, Median, and Mode card game
  http://www.education.com/activity/article/mean_mode_fifth/
- Khan Academy resources -
  https://www.khanacademy.org/math/probability/descriptive-statistics
- Teacher designed math courses – https://njctl.org/courses/math

Medi, Meany, Midi, Mode – Data Sheet

	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9
Roll 1									
Roll 2									
Roll 3									
Roll 4									
Roll 5									
Roll 6									
Roll 7									
Roll 8									
Roll 9									
Roll 10									

	Trial 1	Trial 2	Trial 3	Trial 4	Trial 5	Trial 6	Trial 7	Trial 8	Trial 9
Roll values listed lowest to highest ↓									
Total									
Mode									
Median									
Mean									
Range									