Introduction to Mean, Median, Mode

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Subject: Data Analysis and Probability

This activity relates to the following NCTM standard: Find, use, and interpret measures of center and spread, including mean and interquartile range.


Idea: Students and/or teachers can “invent” data and then see how measures of central tendency vary. This may be good if a school lacks a program like Fathom or Excel.

Use: Students fill out the following information: 1) Species Name, 2) Characteristic Measured, 3) Units of Measurement. The activity was originally designed with the idea of looking at plant characteristics (e.g. 1) Tulip, 2) height, 3) cm). Students may either invent data or be given data by their instructors. Anywhere from 5 to 20 data points can be given. Students can select which summary stats are displayed (total, range, mean, median, mode, variance, standard deviation). The data points can be manipulated graphically when ten or fewer points are presented. If the number of data points is greater than 10, the data must be entered in by typing. Students are to make observations about what changing data does to the summary statistics.

Assessment: Completion of the measures activity worksheet. Have students make conjectures/generalizations about how much/why summary stats change when data is changed.

Materials: Computer with a Java-capable browser
          Pencil and paper
          Measures activity worksheet (available at website in pdf format)

Modifications: Collect data in class beforehand. Have students do the standard measures activity worksheet, but add on a second part where the plug in data pertains to themselves or the class.