

# Data Handout



## Key Vocabulary Terms:

### Average

A number expressing center of a set of data.

Teacher Note: This is heard quite frequently in everyday usage. Sometimes it refers to an exact mathematical average and sometimes it is used quite loosely.

### Mode

The number which appears most often in a set of numbers.

### Median Mean

The “middle” of a sorted list of numbers.

The average of the numbers (leveling the data)

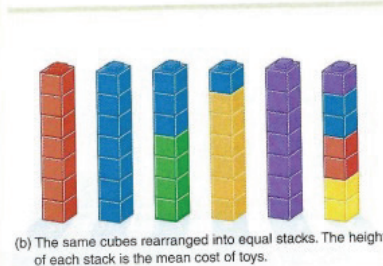
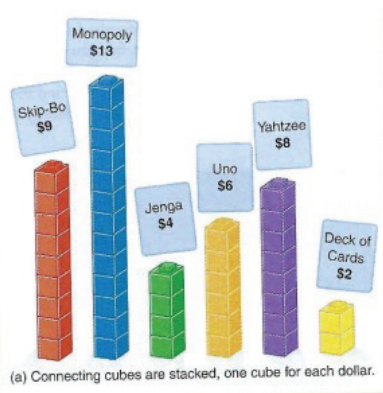
Teacher Note: The sum of all the all the values divided by the total number of values in a set. Mean is better conceptualized as a leveling of the data.

### Range

The difference between the lowest and highest values.

### Mean absolute deviation

The average distance between each data value and the mean.



## Interactive Learning

### Conceptualizing Mean

Assign prices to about 5 or 6 items. Have students create those prices with a concrete bar graph with connecting cubes on a piece of construction paper. One example could be game prices. The task for students is to use the stacks of cubes (bars) to determine what the price would be if all the games were the same price. Encourage students to use various techniques to rearrange the cubes to “level” the prices or make the price the same for each item. Make sure students understand the concept of “leveling”.

## Choosing a measure of center

The median and the mean can be quite different for a set of data, especially when the data set is skewed left, skewed right, or has outliers. It is important to consider the context and data to decide how to best represent the center.

# Data Handout



Which measure of center makes sense?

Prepare possible questions to investigate using available data sets like the ones listed here:

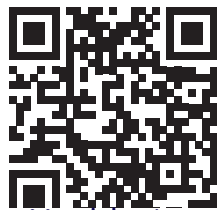
- o How many pencils does a sixth grader have?
- o What is the cost of used cars in our area?
- o What is the height of a typical cereal box?
- o What is the average monthly cost of a mobile phone?
- o What is the average monthly cost of a mobile phone?

The students' task is to decide which measure of center makes the most sense and be able to justify their decision. The first question can be explored by gathering classroom data, and then selecting and justifying which measure of center makes sense. For the other situations, you can assign a topic to a group. Each group does the following: (a) selects which measure of center they think makes the most sense for their topic, (b) prepares a data set that illustrates their point, and (c) prepares a justification of why they picked their measure. Students with special needs may benefit from being given several sets of data for their topic to consider which measure might be best. Also discuss the spread and overall shape of the data gathered (e.g., Does the height of cereal crowd the

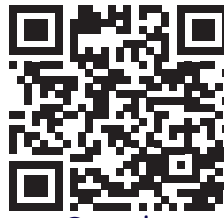
## Virtual Manipulatives



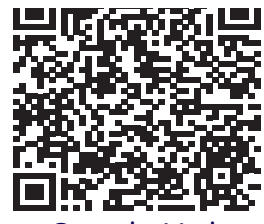
Spinner



Marble Jar



Graph



Graph Maker

## Geometry Virtual Practice:



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