

Statistical Measures of Center

Math standards: 6.SP.B.5, 7.SP.B.3, 7.SP.B.4, A1.S-ID.A.2, A2.S-ID.A.4, A2.S-IC.B.4

Students explore mean, median, and mode to make sense of data, compare groups, and draw conclusions about real-world situations using graphs, tables, and statistical reasoning.

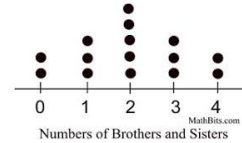
Mean

What it is: The arithmetic average of all the data points.

How to calculate it: Sum all the values and divide by the total number of values.

When to use it: Best for datasets with few or no outliers, as extreme values can significantly affect the mean.

$$\frac{(0+0+1+1+1+2+2+2+2+2+3+3+3+4+4)}{15} = 2$$



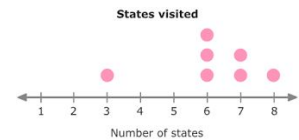
Median

What it is: The middle value in a dataset that has been ordered from least to greatest.

How to calculate it: Sort the data and find the value that is exactly in the middle (or the average of the two middle values if there's an even number of data points).

When to use it: A robust measure of center, especially useful when outliers are present, as it is less affected by extreme values than the mean.

3, 6, 6, 6, 7, 7, 8
↑

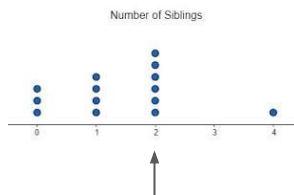


Mode

What it is: The value that appears most often in a dataset.

How to calculate it: Count the frequency of each data value and identify the one that occurs most.

When to use it: Can be used with both numerical and categorical data. A dataset can also have no mode or multiple modes (e.g., bimodal).



Cross Curricular Connections

Science: Science and Engineering Practices: Analyzing and Interpreting Data
[Standards Document](#)

Computer Science: Concept Data and Analysis
[Standards Document 6-8](#)
[Standards Document 9-12](#)

EdTech: Standard 5 Computational Thinker
[Standards Document](#)