Vocabulary: Box-and-Whisker Plots

Vocabulary

- **Box-and-whisker plot** – a graph that indicates the median, the middle 50%, the maximum, and the minimum value of a data set.

  - On a box-and-whisker plot, the middle 50% of a data set is shown by the width (or height) and position of a rectangle. This is the “box” in a box-and-whisker plot.
  - The median of the data set is indicated by a line inside the box.
  - The maximum and minimum values are indicated by the endpoints of line segments (“whiskers”) that extend away from the box.

- **Interquartile range** – the difference between the first and third quartiles of a data set. This is equal to the range of the middle 50% of the data set.
  - The abbreviation for interquartile range is “IQR.”
  - For example, if $Q_1$ is 3 and $Q_3$ is 11, then $IQR = 11 - 3 = 8$.

- **Maximum** – the greatest value in a data set.

- **Median** – the middle value in a set of numbers.
  - Before finding the median, all data should be in order from least to greatest.
  - If there is an odd number of values, the median is the middle number.
    - For example, the median of the data set 2, 3, 5, 6, 8 is 5.
  - If there is an even number of values, the median is the mean of the middle two values.
    - For example, the median of the data set 3, 5, 6, 8 is $\frac{5 + 6}{2} = \frac{11}{2} = 5.5$.

- **Minimum** – the least value in a data set.

- **Quartile** – one of three values that divide a data set into quarters.
  - The second quartile ($Q_2$) is the median of the data set.
  - The first quartile ($Q_1$) is the median of the values that are less than $Q_2$.
  - The third quartile ($Q_3$) is the median of the values that are greater than $Q_2$.
  - In a box-and-whisker plot, $Q_1$ and $Q_3$ form the sides of the box, while $Q_2$ (the median) is indicated by a line inside the box.