Creating a box plot (a.k.a. box-and-whisker plot)

1. Start by drawing an evenly scaled number line horizontally along the bottom of the page. This should represent your data appropriately. It should start just below the minimum piece of data and end just after the maximum piece of data. It should be evenly scaled, by an amount that is most helpful.

2. Label or title this horizontal axis.

3. Sort your data from the smallest to the largest value. Then find these five pieces of data: minimum, lower (or first) quartile, median, upper (or third) quartile, and the maximum (*See note below for help in calculating these.)

4. Two lines above the number line place points at the min (minimum) and max (maximum).

5. From 1 to 3 lines above the number line, draw a vertical line at the each of the following: lower quartile (LQ), median, and upper quartile (UQ).

6. To form the “box”, draw horizontal lines connecting the top of the LQ to the top of the UQ and the bottom of the LQ to the bottom of the UQ. Note: these lines will also touch the top and bottom of the median vertical line.

7. The “whiskers” are drawn from the center of the sides of the box to the points above the min and max.

8. Title the graph.

*To find the minimum (min), lower (or first) quartile (LQ), median, upper (or third) quartile (UQ), and the maximum (max).

- To find the median, line up the data from least to greatest. Then, the median is the middle piece of data. If there are an even number of data values, take a mean of the middle two.
- The median divides the data into two halves. To divide the data into quarters (finding the upper and lower quartiles), you then find the medians of these two halves. Note: If you have an even number of values, (meaning the first median was the average of the two middle values,) then you include the middle values in your sub-median computations. If you have an odd number of values, (meaning the first median was an actual data point,) then you do not include that value in your sub-median computations.
- The minimum, or min, is the smallest value.
- The maximum, or max, is the largest value.