

Lesson 12-4 Box-and-Whisker Plots

Box-and-whisker plots are a way to visually display data.

Vocabulary:

- > Median: the middle number in a set of data, AFTER the data has been ordered from least to greatest.
- > 1st Quartile: the middle of the lower half of a set of data, AFTER the data has been ordered from least to greatest.
- > 3rd Quartile: the middle of the upper half of a set of data, AFTER the data has been ordered from least to greatest.
- > Maximum: the largest data value.
- > Minimum: the smallest data value.

Example 1: Find the median, Q1, Q3, minimum, and maximum:

12, 3, 9, 5, 13, 8, 2, 6, 12

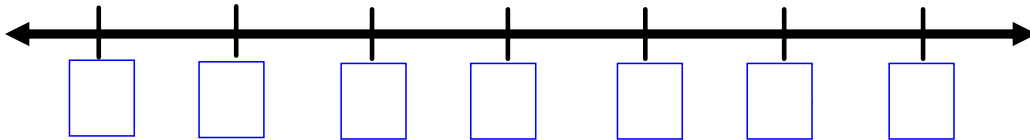
Now we are ready to construct the actual box & whisker graph.

First, draw an ordinary number line that extends far enough in both directions to include all the numbers in the data. (2, 3, 5, 6, 8, 9, 12, 12, 13)

Next, draw short vertical lines above the numbers for Q1, the median, and Q3. Draw a rectangle to form a box around these values.

Now put single dots at the minimum and maximum values. Draw horizontal lines out to these dots to form the whiskers.

Finally, write the 5-number summary values above their positions on the box-and-whisker plot, and give your graph some labels to tell what the data represents.



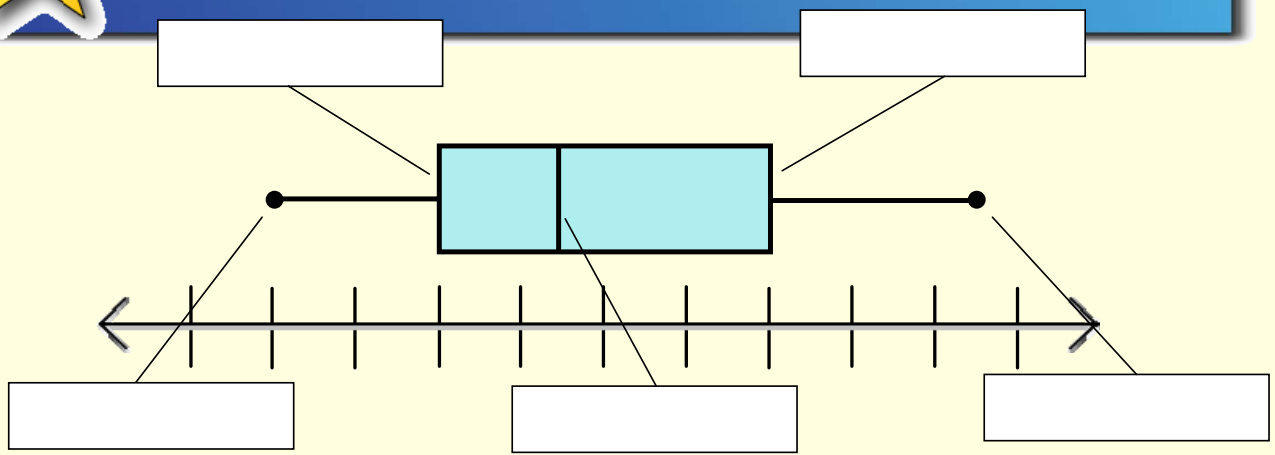
Practice: Identify the minimum, first quartile, median, third quartile, and maximum of each data set. Then make a box-and-whisker plot of each.

1. file sizes (megabytes): 54 100 84 124 188 48 256

2. daily attendance: 29 24 28 32 30 31 26 33



Label Activity



Median

Lower Quartile

Least Value

Upper Quartile

Greatest Value

Name _____ Class _____ Date _____

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Box-and-Whisker Plots

Exercises

Find the minimum, first quartile, median, third quartile, and maximum of each data set.

1. 72, 78, 61, 48, 59, 76, 65

2. 11, 12, 8, 19, 16, 10, 14

3. 3.6, 5.7, 8.3, 6.5, 2.9, 4.3, 5.1

4. 155, 151, 158, 156, 155, 153, 158

Make a box-and-whisker plot to represent each set of data.

5. daily fair visitors: 2576 3255 1876 2285 3589 4277 996

6. computer prices: \$1499 \$699 \$999 \$2999 \$499 \$4499 \$3299

7. lengths (ft): 15 21 10 17 12 14 18