

13.8 Interpret Box-and-Whisker Plots

TEKS 8.12.C

Before

You made stem-and-leaf plots and histograms.

Now

You will make and interpret box-and-whisker plots.

Why?

So you can compare sets of scientific data, as in Ex. 19.



Key Vocabulary

- box-and-whisker plot
- quartile
- interquartile range
- outlier

A **box-and-whisker plot** organizes data values into four groups. Ordered data are divided into lower and upper halves by the median. The median of the lower half is the **lower quartile**. The median of the upper half is the **upper quartile**.

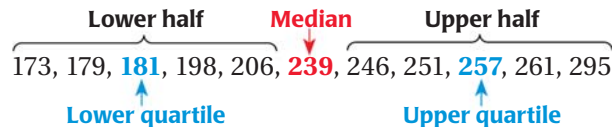
EXAMPLE 1 Make a box-and-whisker plot

SONG LENGTHS The lengths of songs (in seconds) on a CD are listed below. Make a box-and-whisker plot of the song lengths.

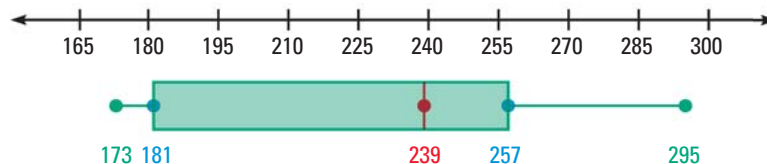
173, 206, 179, 257, 198, 251, 239, 246, 295, 181, 261

Solution

STEP 1 Order the data. Then find the median and the quartiles.



STEP 2 Plot the median, the quartiles, the maximum value, and the minimum value below a number line.



STEP 3 Draw a box from the lower quartile to the upper quartile. Draw a vertical line through the median. Draw a line segment (a “whisker”) from the box to the maximum and another from the box to the minimum.

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GUIDED PRACTICE for Example 1

1. Make a box-and-whisker plot of the ages of eight family members: 60, 15, 25, 20, 55, 70, 40, 30.