

Unit 1: Statistics

Dear Parents/Guardians,

Unit 1 explores statistics. In Lessons 1 and 2, students look at statistical questions and determine the measures of center and spread of data sets. In Lesson 3, students construct different data displays to interpret and analyze data sets.

Measures of Center

A measure of center is a single number that attempts to describe an entire data set.

Example: Chris's math quiz scores for this semester are below.

15, 5, 13, 21, 23, 23, 18, 16, 22, 14

Measure	Explanation	Chris's Quiz Scores Example
median	Write the data values in order from least to greatest. The median is the middle value.	5, 13, 14, 15, 16, 18, 21, 22, 23, 23 The median is the value in the middle of 16 and 18. The median is 17.
mode	The data value(s) that appear(s) the most often.	The mode is 23.
mean	The arithmetic average. Add all of the data values and divide by the number of data values in the set.	$5+13+14+15+16+18+21+22+23+23 = 170$ $170 \div 10 = 17$ The mean is 17.

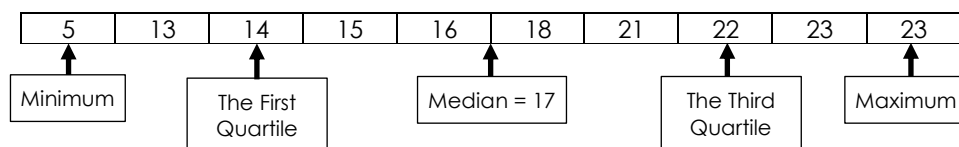
Students consider each of the measures of center and determine which measure best represents a data set.

The Five-Number Summary and Box Plots

The five-number summary indicates the median and other important values that determine the variability (spread) about the median. It is always denoted in the following order:

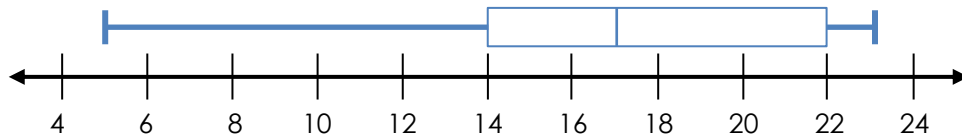
(minimum, the first quartile, median, the third quartile, maximum)

Example: Write Chris's quiz scores in numerical order.



The five-number summary for Chris's scores is (5, 14, 17, 22, 23).

Using this summary, we can create a box plot.



Statistical Questions

A statistical question is a question where data that has the potential for variability can be collected and analyzed for the purpose of answering the question.

Statistical Question	Not a Statistical Question
How much time does the average sixth grader spend on their phone?	How much time do you spend on your phone?



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By the end of the unit, your student should know...

- How to determine measures of center and spread for a data set [Lessons 1.1, 1.2]
- How to determine if a question is a statistical question or not [Lessons 1.1, 1.2, 1.3]
- How to construct, describe and interpret data displays [Lessons 1.3]

Additional Resources

- For definitions and additional notes please refer to Student Resources at the end of the unit.
- For more information on mean, median, and mode: <https://bit.ly/3d5MIAQ>
- For determining the five-number summary: https://youtu.be/omOSu7_Z2o
- For more on creating box-plots: <https://bit.ly/2Aut8fi>
- For more on statistical questions: <https://youtu.be/xi95mYTI9MY>