

GRADE EIGHT EXTEND ACTIVITY

For this Extension Activity, you will be either generating a data set of your own or working with one provided to you by your teacher. Be sure to have your teacher clarify which you are working on. To begin, open your data set, read it, and become familiar with what you are studying. Below, you'll be asked to answer some questions to help you analyze your data set.

1. Sort your data in a reasonable way. This could be alphabetical, numerically, or in another way that helps you make sense of your data.
2. Using your calculator, spreadsheet, or your brain, calculate the mean, median, and mode of your data set. These are called central tendencies.

MEAN (average) _____

MEDIAN (central value) _____

MODE (value that occurs most frequently) _____

After calculating these three values, what does this tell you that you didn't know before?

Did you notice any differences in mean, median, and mode? Why do you think these differences matter?

Which of these three central tendencies provides the most descriptive information for your data set? Why?

- Using your data set, find the Maximum, Minimum, and values associated with each Quartile (Q1, Q2, Q3, and Q4)

MAXIMUM _____

MINIMUM _____

Q1 _____ Q2 _____ Q3 _____ Q4 _____

- Next, construct a Box and Whisker Plot using the values you have found in question three.

Your Box and Whisker Plot

- What does this plot tell you about your data? What do you know now that maybe you didn't know before?



6. Construct a second representation of your data (Histogram or Circle Graph).

7. What is different about this graph compared to your Box and Whisker Plot?

8. Which graph do you feel represents your data better?

9. What would happen if you deleted a data point? What would change in your analysis (be specific)?

10. What outliers do you notice (if any)? How do outliers affect your dataset? What do they tell you?

11. Find another set of data that changes over a long period of time. You will want to have at least 12 data points, but more are better. Examples can include: average low temperatures in February over the past 15 years, ice melt in the Arctic over two decades, or average household income in Oklahoma over the past 20 years. Use your curiosity to research something you're interested in!

12. Use your TI-nSpire calculator or Excel spreadsheet to record your data set and to determine the mean, median, and mode.

13. Graph your data points as a scatterplot and estimate the line of best fit.



14. What do you think the average rate of change is for your data set? What does this tell you about your data?

15. Based on your line of best fit, what can you hypothesize about your data over the next ten years?

