

TI-Nspire Activity: *Changes in A Set of Data*

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Activity Overview

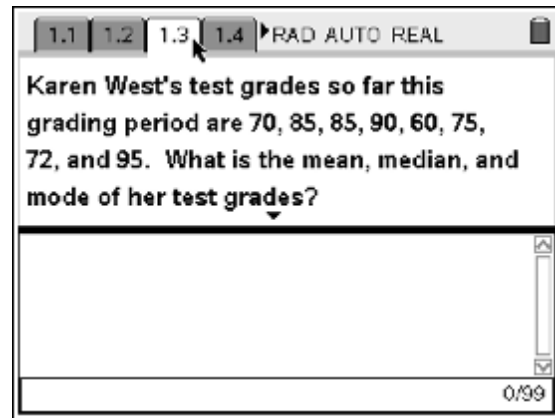
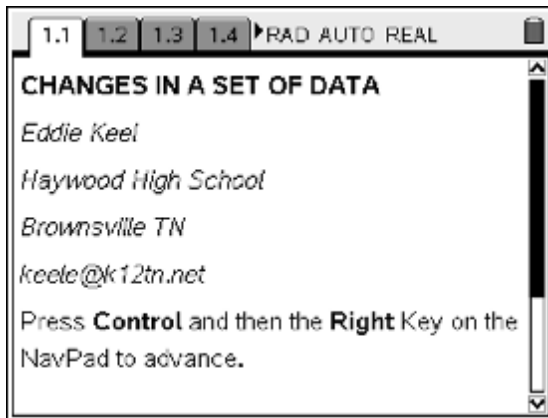
Students will explore how adding one number to a data set affects the measures of central tendency of the data.

Concepts



- *Mean*
- *Median*
- *Mode*
- *Outlier*
- *Range*
- *Interquartile Range*
- *Box-and-whisker plot (boxplot)*

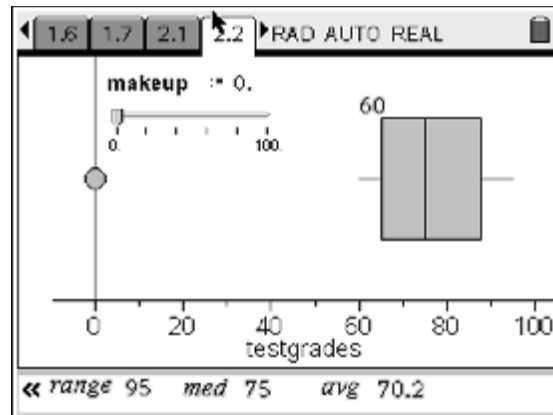
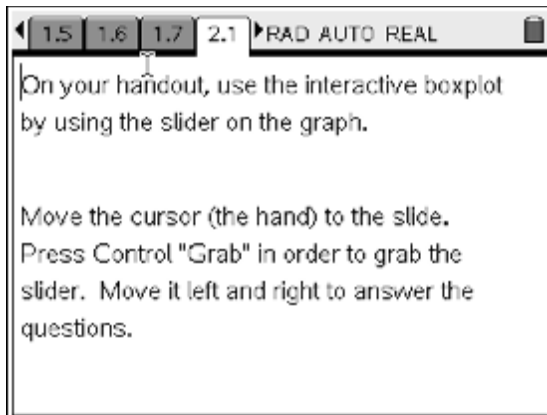
Student Worksheet: Changes in a Set of Data

1. Open the changes_setofdata.tns file by pressing  and selecting . Find the document and press .
2. Press  and then press the  key on the NavPad to go to the next page.



3. Repeat this procedure to get to page 1.3. Record your answer below:
 - a. Mean = _____
 - b. Median = _____
 - c. Mode = _____
4. Which measure of central tendency is most representative of her grades? Explain.

5. Press  and then press the  key on the NavPad until you get to page 1.5. Answer the question on that page.
 - a. Answer: _____
 - b. Explain why you chose that answer:



6. Press Control and Right until you get to page 2.2.
7. The big dot above zero is an outlier. Notice that it is not connected to the left whisker of the boxplot. Move the slider to the right. What is the smallest makeup test grade that Karen can make so that the test grade is NOT an outlier?
 Answer: _____
8. What happened to the boxplot when the minimum value changed from being an outlier to NOT being an outlier?

9. What is the mean, median, and range of Karen's test grades if she makes this grade? Mean = _____ median = _____ Range = _____
10. Move the slider back to zero. Move the slider to the right very carefully. What is the smallest value of the makeup test that Karen can make in order for the MEDIAN to change? _____ What is the mean of her grades at this point?
11. Move the slider back to zero. What is the highest makeup test grade that Karen can make in order for the median to be the greatest? _____
12. Move the slider back to zero. What is the highest makeup test grade that Karen can make in order for the range to be the least? _____
13. As Karen's makeup test grade improves (increases), what happens to the mean of her grades? _____
14. Move the slider to 100. Suppose Karen makes a 100 on her makeup test. Does the mean, median, or range best represent all of her grades? What grade do you think should be posted on her report card? Explain.
