LESSON MAKER PRO

Data Detective Notes

Find the center and spread of data sets.

GRADE 6 · 6.SP.B

CCSS.Math.Content.6.SP.B "Summarize and describe distributions."

NAME _____ DATE _____

CENTER AND SPREAD

To summarize a data set, put the values in order and use measures of center and spread. The median is the middle value when there is an odd number of values, or the average of the two middle values when there is an even number of values. The mean is the sum divided by the number of values, the range is greatest minus least, and the IQR is the upper-half median minus the lower-half median.

WORKED EXAMPLE

Find the median and range of 3, 8, 14, 19, 27.

1. The values are already in order: 3, 8, 14, 19, 27.
2. The middle value is 14, so the median is 14.
3. Subtract least from greatest: 27 - 3 = 24.

Answer: Median = 14; range = 24

PRACTICE 6 problems

1 Find the median: 9, 2, 13, 5, 7.

ANSWER _____

2 Find the median: 4, 12, 18, 22, 26, 30.

ANSWER _____

3 Find the mean: 5, 7, 9, 15.

ANSWER _____

4 Find the range: 17, 25, 23, 29.

ANSWER _____

5 Find the IQR of this ordered data set: 2, 4, 7, 9, 13, 17, 20, 22.

ANSWER _____

6 Data set A is 20, 22, 26. Data set B is 20, 26, 32. Which data set has the greater range?

ANSWER _____

APPLY IT Show your work

1 A gamer tracked the minutes spent practicing on five days: 12, 15, 15, 17, 25. Find the median and range. Then describe what the range tells you.

WORK SPACE

ANSWER _____

2 A student tracked pages read on five days: 20, 22, 28, 28, 35. Find the mean and median. Which measure is greater, and what does that suggest about the data?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Two teams recorded their daily scores. Team A: 20, 22, 26, 28, 30. Team B: 20, 22, 26, 28, 50. Which measure of center, mean or median, gives the better typical score for Team B? Explain your reasoning using Team B's data.

WORK SPACE AND ANSWER

ANSWER KEY # Data Detective Notes

GRADE 6 · 6.SP.B

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the median: 9, 2, 13, 5, 7.	**7**
2	Find the median: 4, 12, 18, 22, 26, 30.	**20**
3	Find the mean: 5, 7, 9, 15.	**9**
4	Find the range: 17, 25, 23, 29.	**12**
5	Find the IQR of this ordered data set: 2, 4, 7, 9, 13, 17, 20, 22.	**13**
6	Data set A is 20, 22, 26. Data set B is 20, 26, 32. Which data set has the greater range?	**Data set B; its range is 12, while data set A has a range of 6.**

PART 2 · APPLY IT

1. **Median = 15 minutes; range = 13 minutes. The practice times varied by 13 minutes from the shortest day to the longest day.** Order the times and identify 15 as the middle value. Subtract 12 from 25 to find the range.
2. **Mean = 26.6 pages; median = 28 pages. The median is greater, which suggests that the lower values pull the mean down.** Add the values to get 133, then divide by 5 for a mean of 26.6. The middle ordered value is 28.

CHALLENGE

The median gives the better typical score for Team B. Its median is 26, while its mean is 29.2 because the score of 50 pulls the mean up.

Accept equivalent wording for descriptions of spread and the effect of an unusually high or low value. For IQR, use the medians of the lower and upper halves of the ordered data set.