

Center or Spread?

Match the data shape to useful statistics.

GRADE 6 • 6.SP.B.5d

CCSS.Math.Content.6.SP.B.5d "Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered."

NAME _____

DATE _____

CHOOSE USEFUL MEASURES

Use the mean and range for data that are fairly even with no outliers. Use the median and IQR when an outlier or a skewed shape could pull the mean or range.

WORKED EXAMPLE

The sorted data are 2, 3, 4, 5, 6, 18.
Choose useful measures and find them.

1. 18 is far from the other values, so use the median and IQR.
2. Median = $(4 + 5) / 2 = 4.5$.
3. Lower-half median is 3 and upper-half median is 6, so IQR = $6 - 3 = 3$.

Answer: Median = 4.5; IQR = 3.

PRACTICE 5 problems

- 1** The data are 7, 8, 9, 10, 11, 12, with no outliers. Find the mean and range.

ANSWER _____

- 2** The data are 14, 15, 16, 17, 40. Which measures best describe the center and spread?

ANSWER _____

- 3** A distribution is roughly symmetric and has no outliers. Which measures should you use?

ANSWER _____

- 4** Find the median and IQR of 30, 31, 32, 33, 34, 70.

ANSWER _____

- 5** A set of prices is skewed because a few items cost much more. Which measures best describe the data?

ANSWER _____

APPLY IT Show your work

- 1** Jordan recorded practice times in minutes: 11, 12, 12, 13, 14, 35. The 35-minute time included a break. Choose useful measures and find them.

WORK SPACE

ANSWER _____

- 2** A game club's scores were 20, 22, 24, 26, 28. The scores are evenly spread with no outliers. Find useful measures for a typical score and the full spread.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Team A scored 40, 42, 44, 46, 48. Team B scored 38, 43, 44, 45, 50. Which team was more consistent? Use measures of center and spread to explain.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	The data are 7, 8, 9, 10, 11, 12, with no outliers. Find the mean and range.	Mean = 9.5; range = 5.
2	The data are 14, 15, 16, 17, 40. Which measures best describe the center and spread?	Median and IQR.
3	A distribution is roughly symmetric and has no outliers. Which measures should you use?	Mean and range.
4	Find the median and IQR of 30, 31, 32, 33, 34, 70.	Median = 32.5; IQR = 3.
5	A set of prices is skewed because a few items cost much more. Which measures best describe the data?	Median and IQR.

PART 2 • APPLY IT

- Median = 12.5 minutes; IQR = 2 minutes.** The break makes 35 an outlier, so use the median and IQR. The lower-half median is 12 and the upper-half median is 14.
- Mean = 24; range = 8.** Use the mean and range because there are no outliers. The total is 120, and $28 - 20 = 8$.

CHALLENGE

Both teams have a mean of 44. Team A was more consistent because its range is 8, while Team B's range is 12.

Accept correct equivalent wording for measure choices. For IQR, use the median of each half of the sorted data.