

Center or Spread?

Choose summaries that fit the data.

GRADE 6 • 6.NR.2.5

6.NR.2.5 "Relate 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 _____

PICK THE BEST SUMMARY

Use the mean for data that are balanced with no unusual values. Use the median for data with an outlier, because an outlier can pull the mean. Range shows the full spread.

WORKED EXAMPLE

Data: 1, 2, 2, 4, 9. Choose a typical value and find the range.

1. 9 is much higher than the other values.
2. The middle value is 2, so the median is 2.
3. Range = $9 - 1 = 8$.

Answer: Use median 2 as the typical value. The range is 8.

PRACTICE 5 problems

- 1** Data: 12, 15, 18, 21, 24. The data are balanced. Find the mean and range.

ANSWER _____

- 2** Data: 13, 16, 16, 18, 40. Which center best shows a typical value, mean or median?

ANSWER _____

- 3** Data: 30, 33, 36, 39, 42. Find the mean and range.

ANSWER _____

- 4** Data: 50, 52, 54, 56, 90. Which center is better, and why?

ANSWER _____

- 5** Set A has a range of 7. Set B has a range of 21. Which set is more variable?

ANSWER _____

APPLY IT Show your work

- 1** A student records minutes spent practicing guitar: 23, 24, 25, 26, 27, 70. What center should describe a usual practice time?

WORK SPACE

ANSWER _____

- 2** Five robotics teams earn 40, 44, 48, 52, and 56 points in a challenge. Report a center and a measure of variability.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Group C has scores 60, 63, 66, 69, 72. Group D has scores 54, 66, 66, 66, 78. Both groups have mean 66. Which group is more consistent? Explain with ranges.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Data: 12, 15, 18, 21, 24. The data are balanced. Find the mean and range.	Mean = 18; range = 12.
2	Data: 13, 16, 16, 18, 40. Which center best shows a typical value, mean or median?	Median, 16.
3	Data: 30, 33, 36, 39, 42. Find the mean and range.	Mean = 36; range = 12.
4	Data: 50, 52, 54, 56, 90. Which center is better, and why?	Median, 54, because 90 is a high outlier.
5	Set A has a range of 7. Set B has a range of 21. Which set is more variable?	Set B.

PART 2 • APPLY IT

1. **Median = 25.5 minutes.** Use the median because 70 minutes is an unusually high value. The two middle values are 25 and 26.
2. **Mean = 48 points; range = 16 points.** The scores are balanced, so use the mean. Subtract 40 from 56 for the range.

CHALLENGE

Group C is more consistent. Its range is 12, while Group D's range is 24.

Accept 25.5 or 25 $\frac{1}{2}$ for the first word problem. For explanation answers, accept any accurate statement that identifies the outlier or compares the ranges.