

Data Shape Detectives

Describe a data set by its center, spread, and shape.

GRADE 6 • NY-6.SP.2

NY-6.SP.2 "Understand that a set of quantitative data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape."

NAME _____

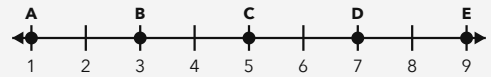
DATE _____

DESCRIBE THE DISTRIBUTION

The center is a value near the middle of the data. The spread tells how far the data go from least to greatest, and the shape tells whether values cluster, have gaps, or look balanced.

WORKED EXAMPLE

Use the number line to describe the data's center, spread, and shape.



1. The values are 1, 3, 5, 7, 9.
2. The middle value is 5.
3. The range is $9 - 1 = 8$.
4. Values are balanced around 5, so the shape is symmetric.

Answer: Center: 5. Spread: 8. Shape: symmetric.

PRACTICE 4 problems

- 1** Data: 2, 4, 4, 6, 8. Find the median and range.

ANSWER _____

- 2** Data: 2, 4, 6, 12, 14. State the center and describe the gap.

ANSWER _____

- 3** Set A: 10, 12, 14. Set B: 8, 12, 16. Do the sets have the same center? Which set has greater spread?

ANSWER _____

- 4** Data: 2, 6, 10, 14, 18. Give the center, spread, and shape.

ANSWER _____

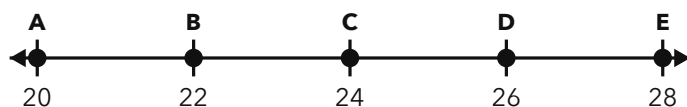
APPLY IT Show your work

- 1** A gaming club tracked each member's practice minutes before a tournament. Use the dot plot to describe the center, spread, and shape.



ANSWER _____

- 2** Five friends marked their pages read on the number line. Describe the center, spread, and shape of the data.



ANSWER _____

CHALLENGE One step up

Use the number line. Which center, the median or mean, better describes most of the data? Explain.



WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Data: 2, 4, 4, 6, 8. Find the median and range.	Median: 4. Range: 6.
2	Data: 2, 4, 6, 12, 14. State the center and describe the gap.	Center: 6. There is a gap between 6 and 12.
3	Set A: 10, 12, 14. Set B: 8, 12, 16. Do the sets have the same center? Which set has greater spread?	Yes, both centers are 12. Set B has greater spread.
4	Data: 2, 6, 10, 14, 18. Give the center, spread, and shape.	Center: 10. Spread: 16. Shape: symmetric.

PART 2 • APPLY IT

- Center: 14 minutes. Spread: 8 minutes. Shape: clustered near 14 minutes.** The middle two values are both 14. The range is $18 - 10 = 8$, and most values are from 12 to 16.
- Center: 24 pages. Spread: 8 pages. Shape: symmetric.** The middle marked value is 24. The endpoints are equally far from 24.

CHALLENGE

The median, 6, better describes most of the data. The value 20 is an outlier that pulls the mean, 8, upward.

Accept equivalent descriptions such as balanced for symmetric and grouped near 14 for clustered. For spread, accept range calculations written as subtraction or as the range value.