LESSON MAKER PRO

Data Shape Detectives

Find the center, spread, and shape of data.

GRADE 6 · 6.NR.2.3

6.NR.2.3 "Interpret numerical data to answer a statistical investigative question created. Describe the distribution of a quantitative (numerical) variable collected, including its center, variability, and overall shape."

NAME _____ DATE _____

DESCRIBE A DATA SET

Use the median as a center when data are ordered. Find variability with the range, greatest value minus least value. Then look for a shape, such as values balanced around the center, a cluster, or a gap.

WORKED EXAMPLE

Use the plotted scores. Find the median and range. Describe the shape.



1. Read the ordered values: 1, 3, 5, 7, 9.
2. The middle value is 5.
3. Range = 9 - 1 = 8.
4. The values balance around 5, so the shape is symmetric.

Answer: Median: 5; range: 8; shape: symmetric.

PRACTICE 4 problems

1 The data are 2, 4, 4, 6, 8. Find the median and range.

ANSWER _____

2 The data are 10, 11, 12, 12, 13. Are the values clustered or spread out?

ANSWER _____

3 The data are 14, 16, 18, 20. Find the median.

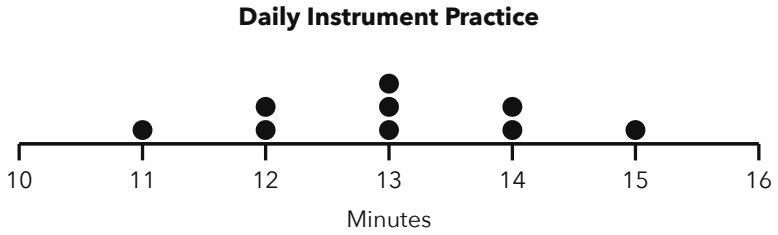
ANSWER _____

4 The data are 20, 21, 22, 23, 24. Give the median, range, and overall shape.

ANSWER _____

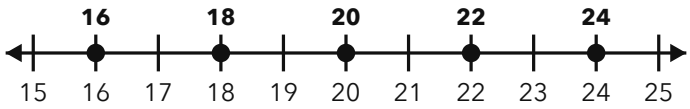
APPLY IT Show your work

1 Maya asks, "How many minutes do students practice an instrument each day?" Use the dot plot to state the median, range, and shape.



ANSWER _____

2 A robotics club asks, "How many laps can each member run without stopping?" Each plotted point shows one response. State the median, range, and shape.



ANSWER _____

CHALLENGE One step up

A class records 30, 32, 34, 36, 38 minutes of reading. Write one statistical question these data could answer. Then give the median, range, and shape.

WORK SPACE AND ANSWER

ANSWER KEY

Data Shape Detectives

GRADE 6 · 6.NR.2.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	The data are 2, 4, 4, 6, 8. Find the median and range.	**Median: 4; range: 6.**
2	The data are 10, 11, 12, 12, 13. Are the values clustered or spread out?	**Clustered near 12.**
3	The data are 14, 16, 18, 20. Find the median.	**17**
4	The data are 20, 21, 22, 23, 24. Give the median, range, and overall shape.	**Median: 22; range: 4; shape: symmetric.**

PART 2 · APPLY IT

1. **Median: 13 minutes; range: 4 minutes; shape: symmetric.** There are nine data values, so the fifth value is the median, 13. Subtract 11 from 15 for a range of 4, and the dot pattern balances around 13.
2. **Median: 20 laps; range: 8 laps; shape: symmetric.** The middle plotted value is 20. The range is 24 minus 16, and the points balance on both sides of 20.

CHALLENGE

How many minutes do sixth graders read on a school night? The median is 34 minutes, the range is 8 minutes, and the data are symmetric.

Accept equivalent wording for symmetric, such as balanced around the center. For clustered data, accept answers that identify 12 as the area where the values are close together.