LESSON MAKER PRO

Spot the Spread

Find the middle, measure the spread, and notice unusual values.

GRADE 6 · 6.DS.B.6.c

6.DS.B.6.c "Give quantitative measures of center (median and/or mean) and variability (interquartile range), as well as describing outliers with reference to the context in which the data were gathered."

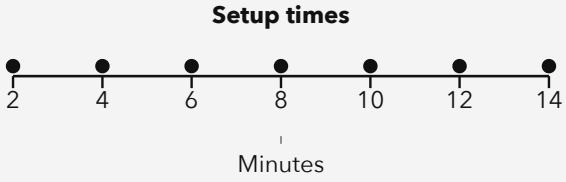
NAME _____ DATE _____

MEDIAN AND IQR

Order the values to find the median: use the middle value, or average the two middle values. To find the interquartile range (IQR), find the median of each half, leaving out the middle value if there is one. Subtract the lower half's median from the upper half's median.

WORKED EXAMPLE

Find the median and IQR of these setup times, in minutes.



1. Ordered values: 2, 4, 6, 8, 10, 12, 14.
2. The middle value is 8, so the median is 8.
3. The lower half has median 4. The upper half has median 12.
4. IQR = 12 - 4 = 8.

Answer: Median: 8 minutes. IQR: 8 minutes.

PRACTICE 4 problems

1 Find the median: 19, 17, 25, 21, 23.

ANSWER _____

2 Find the IQR: 17, 19, 21, 23, 25, 27, 29.

ANSWER _____

3 Find the median and IQR: 15, 17, 19, 21, 25, 27, 31, 35.

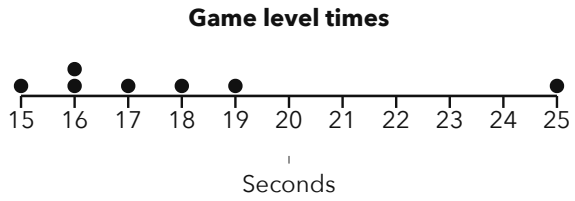
ANSWER _____

4 Find the median and name the value that looks unusual: 17, 19, 21, 23, 25, 27, 55.

ANSWER _____

APPLY IT Show your work

1 Seven players timed a game level. Find the median and IQR. Which time is unusually long?



ANSWER _____

2 A reader tracks pages read on six days: 20, 22, 24, 26, 28, 60. Find the median and IQR. Describe the 60-page day.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A runner logs minutes for seven runs: 15, 17, 19, 21, 23, 25, 57. Remove the longest run. Find the median and IQR before and after. What changes?

WORK SPACE AND ANSWER

ANSWER KEY

Spot the Spread

GRADE 6 · 6.DS.B.6.c

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the median: 19, 17, 25, 21, 23.	**21**
2	Find the IQR: 17, 19, 21, 23, 25, 27, 29.	**8**
3	Find the median and IQR: 15, 17, 19, 21, 25, 27, 31, 35.	**Median: 23. IQR: 11.**
4	Find the median and name the value that looks unusual: 17, 19, 21, 23, 25, 27, 55.	**Median: 23. Unusual value: 55.**

PART 2 · APPLY IT

1. **Median: 17 seconds. IQR: 3 seconds. The 25-second time is unusually long.** The middle time is 17 seconds. The half-medians are 16 and 19 seconds, so the IQR is 3 seconds; 25 seconds is much longer than the other times.
2. **Median: 25 pages. IQR: 6 pages. The 60-page day is unusually high compared with the other days.** The median is (24 + 26) / 2 = 25 pages. The half-medians are 22 and 28 pages, so the IQR is 6 pages.

CHALLENGE

Before: median 21 minutes, IQR 8 minutes. After: median 20 minutes, IQR 6 minutes. Both measures decrease.

For the unusual values, accept descriptions that compare them with the rest of the data. In the challenge, the half-medians are 17 and 25 before removal, then 17 and 23 after removal.