

Center or Spread

Use data shape to choose a useful center.

GRADE 6 • NY-6.SP.5.d

NY-6.SP.5.d "Relate the range and the choice of measures of center to the shape of the data distribution and the context in which the data were gathered."

NAME _____

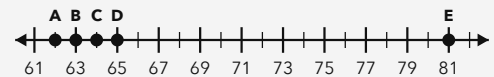
DATE _____

CHOOSE THE CENTER

The range is the greatest value minus the least value. Use the mean when data are balanced with no extreme values. Use the median when a value far from the others could pull the mean.

WORKED EXAMPLE

The number line shows five hiking-trip distances in miles. Find the range. Which center better describes a typical trip, mean or median? Find that center.



1. Greatest minus least: $81 - 62 = 19$.

2. The middle value is 64.

3. The value 81 is far from the cluster, so use the median.

Answer: Range: 19 miles. Better center: median, 64 miles.

PRACTICE 4 problems

- 1** A balanced data set is 4, 6, 8, 10, 12. Find the range and choose a center.

ANSWER _____

- 2** Data: 2, 3, 4, 5, 24. Find the range and choose a center.

ANSWER _____

- 3** Set A: 10, 11, 12, 13, 14. Set B: 7, 11, 12, 13, 17. Which set has the greater range? Give both ranges.

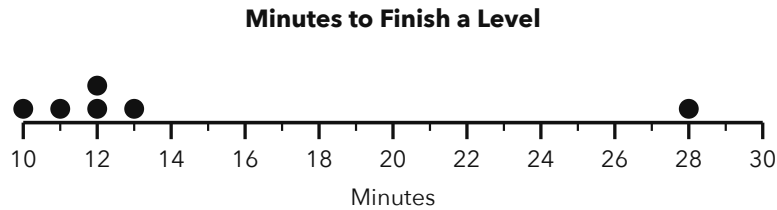
ANSWER _____

- 4** Daily pages read: 9, 10, 11, 12, 13, 14, 40. Find the range. Then choose the better center and give its value.

ANSWER _____

APPLY IT Show your work

- 1** The dot plot shows minutes six game-design club members needed to finish a level. Find the range. Which center best describes a typical finish time? Give its value.



ANSWER _____

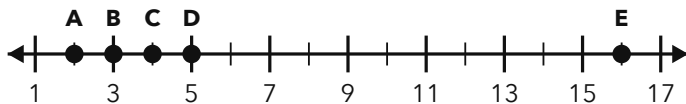
- 2** Six students recorded minutes spent on a daily word puzzle: 8, 9, 10, 11, 12, 45. Which center describes a typical time? Find it and the range.

WORK SPACE

ANSWER _____

CHALLENGE One step up

The number line shows hours five club members spent building a game. Jordan says the mean is best because it uses every value. Do you agree? Name the best center, its value, the range, and why.



WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A balanced data set is 4, 6, 8, 10, 12. Find the range and choose a center.	Range: 8. Use the mean, 8.
2	Data: 2, 3, 4, 5, 24. Find the range and choose a center.	Range: 22. Use the median, 4.
3	Set A: 10, 11, 12, 13, 14. Set B: 7, 11, 12, 13, 17. Which set has the greater range? Give both ranges.	Set B. Set A range: 4; Set B range: 10.
4	Daily pages read: 9, 10, 11, 12, 13, 14, 40. Find the range. Then choose the better center and give its value.	Range: 31. Use the median, 12, because 40 is a high extreme value.

PART 2 • APPLY IT

- Range: 18 minutes. Use the median, 12 minutes.** Subtract 10 from 28 for the range. The 28-minute time is far above the cluster, so the median is more useful.
- Use the median, 10.5 minutes. The range is 37 minutes.** The middle two values are 10 and 11, so the median is 10.5. The 45-minute time is a high extreme value.

CHALLENGE

No. Use the median, 4 hours. The range is 14 hours. The 16-hour value is a high outlier, so it pulls the mean up.

Accept equivalent wording that identifies a far high value as the reason to use the median. Accept correct units omitted when the numerical answer and center choice are correct.