

NWEA Assessment Item Illustrating 7.SP.B.4

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Domain: Statistics and Probability

7.SP.B: Draw informal comparative inferences about two populations.

Calculator Availability: Yes

Use the information to answer the question.

Over the course of a year, the daily high temperatures are recorded for two cities. The data for each city is summarized in the table.

	Daily High Temperatures in Riverside (°F)	Daily High Temperatures in Springfield (°F)
Maximum	99	78
Upper Quartile	88	71
Median	80	63
Lower Quartile	52	44
Minimum	43	37

Based on the information in the table, which statement about the data for the two cities is true?

- A. All the daily high temperatures for Riverside exceed all the daily high temperatures for Springfield.
- B. At least half the daily high temperatures for Riverside exceed the maximum daily high temperature for Springfield.
- C. There is less variability in the daily high temperatures for Riverside than in the daily high temperatures for Springfield.
- D. The range of the daily high temperatures for Riverside is equal to the range of the daily high temperatures for Springfield.

Alignment: 7.SP.B.4: Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.

Interpretation of data displays is an important life skill. This application item asks students to use measures of center and variability from data in a table to draw inferences about the high temperature in two cities. Students must understand the concept of median and interquartile range and how those measures for one data set relate to the measures of another data set. This type of problem goes beyond simple identification of values for data sets and asks students to reason and make connections resulting in a conclusion about the data sets.

Coherence: In grade 6, students were asked to calculate mean, median, and interquartile range, and describe any overall pattern as well as any striking deviations from the overall pattern with reference to the context in which the data was gathered.^{6.SP.B.5c/d} In grade 7, students explore comparative inferences about two populations. This is foundational for the more advanced work in high school when students will interpret, display, and solve problems with categorical and quantitative data^{HSS-ID.A} and make inferences and justify conclusions about a population based on samples.^{HSS-IC.A/B}

Rigor: This item attends to conceptual understanding and application. Students must understand the concepts of median, variation, and range. This item requires an application of mathematics that is directly indicated in a real-world scenario.

Answer Key:

Use the information to answer the question.

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