LESSON MAKER PRO

Sample Showdown

Compare what is typical and how much data vary.

GRADE 7 · 7.SP.B

CCSS.Math.Content.7.SP.B "Draw informal comparative inferences about two populations."

NAME _____ DATE _____

CENTER AND SPREAD

Use a sample's mean to compare what is typical. Use range, greatest value minus least value, to compare spread. A sample can suggest, but not prove, a difference between populations.

WORKED EXAMPLE

Sample A: 14, 18, 22. Sample B: 11, 17, 23. Compare the samples.

1. Mean A = (14 + 18 + 22) / 3 = 18.
2. Mean B = (11 + 17 + 23) / 3 = 17.
3. Range A = 22 - 14 = 8. Range B = 23 - 11 = 12.

Answer: Sample A has a mean 1 higher. Sample B has greater spread.

PRACTICE 5 problems

1 Sample A has mean 9. Sample B has mean 10. Which sample has the greater mean, and by how much?

ANSWER _____

2 Sample A has range 11. Sample B has range 6. Which sample is more variable?

ANSWER _____

3 Sample C has mean 26 and range 5. Sample D has mean 24 and range 9. Which sample is more typical of higher values? Which is more variable?

ANSWER _____

4 Sample E has mean 30 and range 4. Sample F has mean 30 and range 10. What can you say about the samples?

ANSWER _____

5 Sample G has mean 19 and range 7. Sample H has mean 19 and range 4. Which sample has more consistent results?

ANSWER _____

APPLY IT Show your work

1 Two samples of students tracked minutes spent practicing a new video game. Sample X: 24, 26, 28, 30. Sample Y: 19, 25, 29, 35. Compare the typical practice time and the spread.

WORK SPACE

ANSWER _____

2 Two music apps sampled the number of songs students added to playlists in one week. App A: 40, 44, 46, 50. App B: 42, 44, 46, 48. What does the data suggest?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Two samples show quiz scores from two populations. Sample Q: 31, 35, 39, 43. Sample R: 33, 36, 38, 41. A student says Population R usually has higher scores because its results are closer together. Is the claim supported? Use the mean and range.

WORK SPACE AND ANSWER

ANSWER KEY

Sample Showdown

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Sample A has mean 9. Sample B has mean 10. Which sample has the greater mean, and by how much?	**Sample B, by 1.**
2	Sample A has range 11. Sample B has range 6. Which sample is more variable?	**Sample A is more variable.**
3	Sample C has mean 26 and range 5. Sample D has mean 24 and range 9. Which sample is more typical of higher values? Which is more variable?	**Sample C is typical of higher values. Sample D is more variable.**
4	Sample E has mean 30 and range 4. Sample F has mean 30 and range 10. What can you say about the samples?	**They have the same typical value, but Sample F is more variable.**
5	Sample G has mean 19 and range 7. Sample H has mean 19 and range 4. Which sample has more consistent results?	**Sample H has more consistent results.**

PART 2 · APPLY IT

1. **Both samples have a mean of 27 minutes. Sample Y has more spread, so its practice times are more variable.** Both sums are 108, so both means are 27. The ranges are 6 for X and 16 for Y.
2. **Both apps have a typical value of 45 songs. App A has more variation in the number of songs added.** Both samples have mean 45. App A has range 10, while App B has range 6.

CHALLENGE

No. Both samples have a mean of 37, so neither population appears to usually score higher. Sample R has a smaller range, 8 compared with 12, so its scores are less variable.

Accept equivalent statements about higher typical values, greater variability, or more consistent results. Students may state that the samples suggest a population comparison rather than prove it.