Statistics and Data Displays

Lesson 12 Writing a Complete Data Summary

Standards 6.SP.B.5a, 6.SP.B.5b, 6.SP.B.5c, 6.SP.B.5d

Learning target I can write a statistical summary tied to its context.

Materials Grid paper, rulers, colored pencils, data tables.

Lesson Flow 50 Minutes

0–5 Activate prior knowledge. Read the learning target. Ask students what they already know about writing a complete data summary. Use a quick model or estimate to make their starting ideas visible.

5–17 Teach and model. A useful summary names the group and attribute, units, observation count, center, variability, and shape. Explain why the chosen center and spread fit the data and mention any striking value. Work through the two examples on the attached instruction page. Have students name the first step before showing it.

17–22 Guided practice. Revisit worked Example 2 with its solution covered. Students propose the next step and explain why it is valid; uncover and compare with the worked solution.

22–45 Independent classwork. Assign the attached 10 questions in order. Check items 1–3 for entry-level understanding, 4–6 for connected procedures, 7–8 for representation and explanation, and 9–10 for application or justification. Ask students to use the instruction-page notes area or extra grids for longer work.

45–50 Check understanding. Use classwork question 10 as an exit discussion: Reading times in minutes are 4, 5, 5, 6, 7, 16. Write a summary with count, attribute, units, center, variability, shape, and a justified choice of measures. Compare the result with the answer key and ask a student to defend the method.

Support and Extension

Support Model item 1 together with the listed tools, then have students attempt item 2 independently. Watch sorting before finding medians, quartile conventions, counting every observation once, and mean versus variability.

Extension Ask students to solve a final item another way, draw a second representation, or create a related problem with a checked answer.

Next step Record which students can explain the target independently. Begin the next teaching session with a brief correction for any recurring error.

Name _____ Date _____

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Learning target I can write a statistical summary tied to its context.

Learn and Discuss

A useful summary names the group and attribute, units, observation count, center, variability, and shape. Explain why the chosen center and spread fit the data and mention any striking value.

Example 1 Reading times in minutes are 2, 3, 3, 4, 4, 5. Write a summary with count, attribute, units, center, variability, shape, and a justified choice of measures.
Solution 6 observations of reading time in minutes. Mean 7/2 min, MAD 5/6 min; roughly symmetric, so mean/MAD are reasonable.. Calculate the center and spread before interpreting them in context. Other accurate, justified summaries are acceptable.
Example 2 Reading times in minutes are 8, 9, 9, 10, 11, 20. Write a summary with count, attribute, units, center, variability, shape, and a justified choice of measures.
Solution 6 observations of reading time in minutes. Median 19/2 min, IQR 2 min; right-skewed with a high value 20 min, so median/IQR resist that value.. Calculate the center and spread before interpreting them in context. Other accurate, justified summaries are acceptable.

Classwork Show Your Work

Complete the 10 problems on the following page. Refer to the examples, draw models, and check your results.

My Notes or Second Method

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Name _____ Show calculations, models, and units.

1. Reading times in minutes are 4, 5, 5, 6, 6, 7. Write a summary with count, attribute, units, center, variability, shape, and a justified choice of measures.

2. Reading times in minutes are 8, 9, 9, 10, 10, 11. Write a summary with count, attribute, units, center, variability, shape, and a justified choice of measures.

3. Reading times in minutes are 2, 3, 3, 4, 4, 5. Write a summary with count, attribute, units, center, variability, shape, and a justified choice of measures.

4. Reading times in minutes are 4, 10, 10, 16, 16, 22. Write a summary with count, attribute, units, center, variability, shape, and a justified choice of measures.

5. Reading times in minutes are 6, 10, 10, 14, 14, 18. Write a summary with count, attribute, units, center, variability, shape, and a justified choice of measures.

6. Reading times in minutes are 8, 14, 14, 20, 20, 26. Write a summary with count, attribute, units, center, variability, shape, and a justified choice of measures.

7. Reading times in minutes are 6, 7, 7, 8, 9, 18. Write a summary with count, attribute, units, center, variability, shape, and a justified choice of measures.

8. Reading times in minutes are 5, 6, 6, 7, 8, 17. Write a summary with count, attribute, units, center, variability, shape, and a justified choice of measures.

9. Reading times in minutes are 7, 8, 8, 9, 10, 19. Write a summary with count, attribute, units, center, variability, shape, and a justified choice of measures.

10. Reading times in minutes are 4, 5, 5, 6, 7, 16. Write a summary with count, attribute, units, center, variability, shape, and a justified choice of measures.

Writing a Complete Data Summary

Statistics and Data Displays

1. 6 observations of reading time in minutes. Mean 11/2 min, MAD 5/6 min; roughly symmetric, so mean/MAD are reasonable.
Reasoning Calculate the center and spread before interpreting them in context. Other accurate, justified summaries are acceptable.

2. 6 observations of reading time in minutes. Mean 19/2 min, MAD 5/6 min; roughly symmetric, so mean/MAD are reasonable.
Reasoning Calculate the center and spread before interpreting them in context. Other accurate, justified summaries are acceptable.

3. 6 observations of reading time in minutes. Mean 7/2 min, MAD 5/6 min; roughly symmetric, so mean/MAD are reasonable.
Reasoning Calculate the center and spread before interpreting them in context. Other accurate, justified summaries are acceptable.

4. 6 observations of reading time in minutes. Mean 13 min, MAD 5 min; roughly symmetric, so mean/MAD are reasonable.
Reasoning Calculate the center and spread before interpreting them in context. Other accurate, justified summaries are acceptable.

5. 6 observations of reading time in minutes. Mean 12 min, MAD 10/3 min; roughly symmetric, so mean/MAD are reasonable.
Reasoning Calculate the center and spread before interpreting them in context. Other accurate, justified summaries are acceptable.

6. 6 observations of reading time in minutes. Mean 17 min, MAD 5 min; roughly symmetric, so mean/MAD are reasonable.
Reasoning Calculate the center and spread before interpreting them in context. Other accurate, justified summaries are acceptable.

7. 6 observations of reading time in minutes. Median 15/2 min, IQR 2 min; right-skewed with a high value 18 min, so median/IQR resist that value.
Reasoning Calculate the center and spread before interpreting them in context. Other accurate, justified summaries are acceptable.

8. 6 observations of reading time in minutes. Median 13/2 min, IQR 2 min; right-skewed with a high value 17 min, so median/IQR resist that value.
Reasoning Calculate the center and spread before interpreting them in context. Other accurate, justified summaries are acceptable.

9. 6 observations of reading time in minutes. Median 17/2 min, IQR 2 min; right-skewed with a high value 19 min, so median/IQR resist that value.
Reasoning Calculate the center and spread before interpreting them in context. Other accurate, justified summaries are acceptable.

10. 6 observations of reading time in minutes. Median 11/2 min, IQR 2 min; right-skewed with a high value 16 min, so median/IQR resist that value.
Reasoning Calculate the center and spread before interpreting them in context. Other accurate, justified summaries are acceptable.