Final Applications and Review

Lesson 3 Reporting Class Reading Data

Standards 6.SP.A.1, 6.SP.B.5a, 6.SP.B.5b, 6.SP.B.5c, 6.SP.A.3, 6.SP.B.4, 6.SP.B.5d

Learning target I can represent and summarize a collection of reading data.

Materials Coordinate grids, rulers, fractional cube models, data plotting paper.

Lesson Flow 50 Minutes

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

5–17 Teach and model. Read the requested quantity first and identify the relevant model. A statistical question anticipates different answers in a collection of data. Name the group, the measured attribute, and the expected variation. A question about one fixed fact is not statistical. Explain why the units and the final value fit the situation. 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: Critique: “A question is statistical whenever it contains numbers.” Give a counterexample and a corrected rule. 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 choosing the correct geometric measure and tying statistical statements to units and context.

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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Standards 6.SP.A.1, 6.SP.B.5a, 6.SP.B.5b, 6.SP.B.5c, 6.SP.A.3, 6.SP.B.4, 6.SP.B.5d

Learning target I can represent and summarize a collection of reading data.

Learn and Discuss

Read the requested quantity first and identify the relevant model. A statistical question anticipates different answers in a collection of data. Name the group, the measured attribute, and the expected variation. A question about one fixed fact is not statistical. Explain why the units and the final value fit the situation.

Example 1 Reading times in minutes are 5, 6, 6, 7, 7, 8. Report n, units, and mean.
Solution n = 6; minutes; mean 13/2 min. Sum = 39; mean = 39 ÷ 6 = 13/2.
Example 2 Reading times in minutes are 6, 7, 7, 8, 9, 18. Find the five-number summary and draw a labeled box plot. State the IQR.
Solution (6, 7, 15/2, 9, 18); IQR 2 min. Box runs from 7 to 9, median line at 15/2, whiskers to 6 and 18.

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

Lesson 3 Reporting Class Reading Data

Name _____ Show calculations, models, and units.

1. Is “How many pages did each student read last night?” statistical? Explain.

2. Reading times in minutes are 6, 7, 7, 8, 8, 9. Report n, units, and mean.

3. Reading times in minutes are 6, 7, 7, 8, 8, 9. Find the median. Show the middle positions.

4. Reading times in minutes are 2, 8, 8, 14, 14, 20. Find Q1, Q3, IQR, and range.

5. Reading times in minutes are 3, 8, 8, 13, 13, 18. Calculate the mean and MAD. Show all absolute deviations.

6. Reading times in minutes are 5, 10, 10, 15, 15, 20. Draw a labeled dot plot. Check the number of dots.

7. Daily reading times in minutes: 3, 8, 3, 12, 11, 3, 18, 13, 7, 13. Draw a histogram using bins 0–4, 5–9, 10–14, and 15–19. Label axes. Which interval has the greatest frequency? Include ties.

8. Reading times in minutes are 4, 5, 5, 6, 7, 16. Find the five-number summary and draw a labeled box plot. State the IQR.

9. 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.

10. Critique: “A question is statistical whenever it contains numbers.” Give a counterexample and a corrected rule.

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1. Yes; pages read vary across students.
Reasoning Look for a collection of data and anticipated variation; identify the population and variable.

2. n = 6; minutes; mean 15/2 min
Reasoning Sum = 45; mean = 45 ÷ 6 = 15/2.

3. Median 15/2 min
Reasoning 6 ordered values: average positions 3 and 4: (7 + 8) ÷ 2 = 15/2.

4. Q1 8, Q3 14; IQR 6 min; range 18 min
Reasoning Lower half [2, 8, 8] has median 8; upper half [14, 14, 20] has median 14. Subtract Q1 from Q3.

5. Mean 21/2 min; MAD 25/6 min
Reasoning Distances: 15/2, 5/2, 5/2, 5/2, 5/2, 15/2; sum 25; divide by 6 = 25/6.

6. 5: 1 dot; 10: 2 dots; 15: 2 dots; 20: 1 dot; n = 6
Reasoning Each observation contributes one dot; stack repeated values at their number-line position.

7. Frequencies 3, 2, 4, 1; greatest: 10–14
Reasoning Count every value once. Bars touch and have equal width; horizontal axis is minutes, vertical axis is frequency.

8. (4, 5, 11/2, 7, 16); IQR 2 min
Reasoning Box runs from 5 to 7, median line at 11/2, whiskers to 4 and 16.

9. 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.
Reasoning Calculate the center and spread before interpreting them in context. Other accurate, justified summaries are acceptable.

10. Counterexample: How many sides does a triangle have? It has a fixed answer. A statistical question anticipates variability in a collection of data.
Reasoning Look for a collection of data and anticipated variation; identify the population and variable.