

Grade 6 • Unit 8 Worksheet

Data Sets and Distributions

Name: _____

Date: _____

Part A • Statistical Questions

A statistical question expects *VARIABLE* answers — different respondents give different responses.

1. Decide whether each is a statistical question. Explain.

a. How tall is the Eiffel Tower? ☐ Statistical ☐ Not. Why?

b. How tall are the students in our class? ☐ Statistical ☐ Not. Why?

c. What is my pet's name? ☐ Statistical ☐ Not. Why?

d. What are typical bedtimes for sixth-graders? ☐ Statistical ☐ Not. Why?

Part B • Mean and MAD

2. Here are quiz scores for 6 students: 8, 7, 9, 6, 10, 8.

a. What is the mean? _____

b. What is the median? _____

c. What is the range? _____

d. Compute the MAD (mean absolute deviation). Show your work:

e. MAD = _____

3. Two classes had a quiz. Class A scores have mean 80 and MAD 2. Class B scores have mean 80 and MAD 9.

Which class had more consistent scores? _____

Explain what the MAD tells you about each class:

Part C • Median and IQR

4. Find the median, Q1, Q3, and IQR of: 4, 7, 8, 8, 10, 12, 13, 15, 18.

Median: _____

Q1: _____ Q3: _____

IQR: _____

5. Two data sets have the same range, but very different IQRs. What does that suggest about the distributions? Give an example.

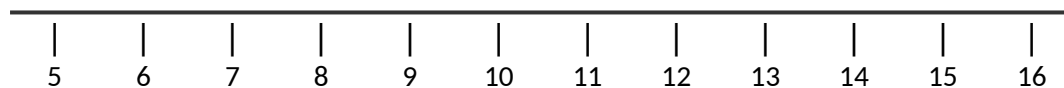
Part D • Dot Plots, Histograms, Box Plots

6. Here are 15 weights (in pounds) of cats: 7, 8, 8, 9, 9, 10, 10, 10, 11, 11, 12, 12, 13, 14, 15.

- a. What is the five-number summary?

Min: _____ Q1: _____ Median: _____ Q3: _____ Max: _____

- b. Sketch a box plot for these data on the number line below:



7. When would you choose a histogram over a dot plot? When would you choose a box plot? Give one example each.

Histogram is better when:

Box plot is better when:

Part E • Error Analysis & Reasoning

8. Han computes the mean of these 5 values: 4, 7, 12, 7, 50. He gets a mean of 16 and concludes the 'typical' value is around 16.

Is the mean a good measure of center for this data set? _____

Compute the median: _____

Which measure better describes a typical value, and why?

9. Diego says: 'If you add the same number to every data value, the mean stays the same.' Is Diego right?

☐ Yes ☐ No

Test with these data: 2, 4, 6 (compute mean), then add 5 to each. Compute the new mean. What happens?

Part F • Thinking Deeply

10. Write a statistical question you'd like to investigate about your class or family. Describe what data you'd collect and which measure (mean, median, range, IQR) would best answer your question. Justify.
