

Data or It Didn't Happen

A second round of data decisions: expected values, center, graphs, and the questions that make evidence trustworthy.

[expected vs. observed] [mean and median] [graph literacy] [QUESTIONS ONLY] [PRINT-FRIENDLY]

NAME	PERIOD	DATE
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QUESTIONS ONLY - Practice independently or with a group. Use the class sheet as a model, but solve these numbers yourself.

PART A

Expected and observed

A fair coin is flipped 24 times. The expected number of heads is 12, but the result is 15 heads.

1

What is the difference between the observed and expected number of heads?

2

Write the observed result as a fraction of the total flips and as a decimal. What does each number tell you?

PART B

Which center tells the story?

Five wind speeds are 4, 5, 6, 7, and 23 m/s.

1

Find the mean and median. Which one better describes a typical gust here, and why?

2

If the 23 m/s gust is replaced by 9 m/s, how does the mean change? Do the calculations.

PART C

Graph detective

Two beetles were timed for four trials. Beetle A traveled 8, 10, 9, and 11 cm. Beetle B traveled 6, 12, 8, and 12 cm.

- 1** Find each beetle's mean distance. Which beetle would look higher on a bar graph of averages?

- 2** Which beetle has the larger spread from lowest to highest result? What might that say about consistency?

PART D

Demand the numbers

A classmate says, "Plant A grew faster because it looked taller on Friday."

- 1** Name two measurements you would request before accepting the claim.

- 2** Write one testable question and one variable that should be kept the same.
