

Patterns in Pill Bugs

Organize repeated observations to identify a possible relationship.

6.1.c.i "interpreting, analyzing, and evaluating data organize data sets to reveal patterns that suggest relationships"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Circle the larger count in each table row, then number the trials 1 through 4. These marks help you see whether one condition has a higher count repeatedly.

A Choice Chamber Investigation

- ① Scientists investigated where pill bugs gathered in a choice chamber. One side held damp paper, and the other held dry paper. They released 20 pill bugs and counted the bugs on each side after five minutes. The results are organized in the table. Matching columns show the same two conditions in every trial, so the counts can be compared.

PILL BUGS COUNTED AFTER FIVE MINUTES

Trial	Damp paper	Dry paper
1	15	5
2	14	6
3	16	4
4	15	5

- ② To look for a pattern, compare one column with another across all trials, not just one row. A repeated difference may suggest a relationship between a condition and an outcome. However, a small data set cannot prove that the condition caused the outcome. Scientists repeat trials and control other factors before making a stronger claim.
- ③ Data can be organized in several useful ways. In an investigation of bean plants, a class could place plant height measurements from the same number of days in separate rows for bright light and low light. A reader could then compare measurements across the rows. Consistent differences would suggest a relationship worth investigating further.

2

ANSWER WITH EVIDENCE

Use the passage

1

What pattern do you see when you compare the damp-paper and dry-paper counts across all four trials?

2

In Trial 2, how many more pill bugs were on damp paper than on dry paper?

3

Which trial has the largest difference between the two conditions? Use the counts as evidence.

4

Evaluate this claim: "The investigation proves that damp paper caused pill bugs to gather there." Is the claim too strong? Explain.

3

YOUR TURN

Your own words

Choose a nonliving material and two test conditions that differ by one factor. Fill in three plausible measurements for each condition, then state the repeated pattern your organized data suggests.

CONDITION	TRIAL 1 MEASUREMENT	TRIAL 2 MEASUREMENT	TRIAL 3 MEASUREMENT	REPEATED PATTERN

PART 1 • READ AND MARK

Circle the larger count in each table row, then number the trials 1 through 4. These marks help you see whether one condition has a higher count repeatedly. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	What pattern do you see when you compare the damp-paper and dry-paper counts across all four trials?	More pill bugs were counted on damp paper than on dry paper in every trial.
2	In Trial 2, how many more pill bugs were on damp paper than on dry paper?	8 more pill bugs.
3	Which trial has the largest difference between the two conditions? Use the counts as evidence.	Trial 3. It had 16 pill bugs on damp paper and 4 on dry paper, a difference of 12.
4	Evaluate this claim: "The investigation proves that damp paper caused pill bugs to gather there." Is the claim too strong? Explain.	Yes. The data suggests a relationship, but four trials do not prove that damp paper caused the result. More repeated and controlled trials are needed.

PART 3 • YOUR TURN (SAMPLE ANSWER)

CONDITION	TRIAL 1 MEASUREMENT	TRIAL 2 MEASUREMENT	TRIAL 3 MEASUREMENT	REPEATED PATTERN
Sunlight, ice melted after 10 minutes	18 g	19 g	18 g	More ice melted in sunlight.
Shade, ice melted after 10 minutes	6 g	5 g	6 g	Less ice melted in shade.

Accept descriptions of the repeated damp-paper pattern and correct differences supported by the table. For the open task, accept reasonable invented measurements if the conditions differ by one factor and the stated pattern matches all three measurements.