

Seed Data Detectives

Use evidence and limits to interpret a germination pattern.

LS.1.c.i "interpreting, analyzing, and evaluating data identify, interpret, and evaluate patterns in data"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline the sentence that interprets the data pattern, and circle each phrase that limits how far the conclusion can go.

What Helps Lettuce Seeds Germinate?

- ① Students investigated how temperature affects lettuce seed germination. They placed 20 seeds in each of five containers on damp paper towels. Every container received the same amount of water and light. The containers stayed at different temperatures for five days. The table shows the average number of seeds that germinated in three trials.

AVERAGE LETTUCE SEEDS GERMINATED AFTER FIVE DAYS

Temperature	Average seeds germinated, out of 20
10°C	6
15°C	14
20°C	18
25°C	16
30°C	9

- ② The averages rise from 10°C to 20°C, then drop at 25°C and 30°C. This pattern suggests that, among the temperatures tested, 20°C was best for germination during the five-day period. It does not prove that 20°C is the best temperature in every situation. The study tested one seed type, one moisture level, and only five days.
- ③ Data patterns can support a claim when the measurements match the claim. They can also raise new questions. For example, a scientist could repeat this investigation with more seed types or test temperatures between 15°C and 25°C. Repeated trials reduce the chance that an unusual container changes the overall pattern too much.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 Describe the overall pattern in the number of seeds that germinated as temperature increased.

2 Which tested temperature had the highest average germination? Use two data values as evidence for your answer.

3 Why did the students give every container the same amount of water and light? Explain how this helps them interpret the pattern.

4 Give one limit of this investigation, and name one useful next step for studying the pattern.

3 YOUR TURN _____ Your own words

Create a four-row data table for a new seed-germination investigation. Choose four temperatures and possible germination counts out of 20 that show a pattern, then write a brief pattern note for each result.

TEMPERATURE	SEEDS GERMINATED, OUT OF 20	PATTERN NOTE

PART 1 • READ AND MARK

Underline the sentence that interprets the data pattern, and circle each phrase that limits how far the conclusion can go. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Describe the overall pattern in the number of seeds that germinated as temperature increased.	Germination increased from 10°C to 20°C, then decreased at 25°C and 30°C.
2	Which tested temperature had the highest average germination? Use two data values as evidence for your answer.	20°C had the highest average, with 18 seeds germinated. For comparison, 15°C had 14 and 30°C had 9.
3	Why did the students give every container the same amount of water and light? Explain how this helps them interpret the pattern.	Keeping water and light the same makes temperature the planned difference, so the students can more fairly connect the germination pattern to temperature.
4	Give one limit of this investigation, and name one useful next step for studying the pattern.	One limit is that the study used only one seed type, one moisture level, and five days. A useful next step is to test more seed types or temperatures between 15°C and 25°C.

PART 3 • YOUR TURN (SAMPLE ANSWER)

TEMPERATURE	SEEDS GERMINATED, OUT OF 20	PATTERN NOTE
12°C	5	Low count at the coolest temperature
18°C	13	Count increased as temperature rose
24°C	17	Highest count tested
30°C	9	Count dropped, so more trials could check this result

Accept accurate descriptions of the increase to 20°C and decrease afterward, supported by table values. For the open task, accept any internally consistent set of possible data with notes that identify a pattern or appropriately question a result.