TEACHER GUIDE / ADULT ONLY

Laramie Plains Drought Lab

Grade 10 | HS-LS2-6 | PILOT 1.2

Use this tomorrow

Students use survey graphs and group tables to judge recovery and continuing change. The shared exit uses a new case.

Target: 15-20 minutes of teaching and practice, plus 5-8 minutes for the exit. Student timing is untested.

Open the game | Student packet | Shared exit question

https://polemountainlearning.com/laramie-plains-drought-lab

Teaching and practice: student pages 1-5. Exit: pages 6-7 or both separate exit pages.

1. Teach and practice

Read student page 1 together. Practice on screen or student pages 2-5. Keep first answers. Give the matching hint from Teacher Guide page 2, then allow one retry. Keep first tries and results after feedback separate.

2. Give the shared exit question

Use student pages 6-7, both separate exit pages or the screen exit. Keep practice and keys out of sight. Do not coach the exit. Collect answers before showing keys.

3. Record and choose a teaching step

Practice has 7 parts; the independent exit has 3. Score with Teacher Guide page 2. Use the teaching suggestions on Teacher Guide page 3; these scores are not proficiency labels.

Codes and receipts

Screen receipts show answers, not an exit score. Record the code, both practice counts and all exit responses before closing. For paper-only practice, assign P01, P02 or your own class codes. A code identifies work; it does not retrieve a saved record.

Teacher Guide page 2: keys and practice hints. Teacher Guide page 3: full routines, scoring details and science limits. Keep this guide with the teacher.

Built and reviewed with AI tools; no human classroom trial of this revision yet.

Keys, hints and feedback

Student packet pages 2-5 | Exit pages 6-7 | Routines on Teacher Guide page 3

Worked keys and explanations

1a. Cards B -> C -> A: water, grasses, jackrabbits.

Available soil water -> grasses -> jackrabbits. These arrows show the stated support and feeding pathway, not every interaction or the path of every water molecule.

1b: Menu 1: B (fluctuated); Menu 2: C (40-60)

The lowest baseline count is 40 and the highest is 60. Counts fluctuate within that span, without a steady increase. This population record alone does not establish stability of the whole ecosystem.

2a: choice A / 2b: A, D only

Plot A counts return to the 40-60 baseline span in Years 8-10, with the same monitored groups recorded in each survey. Together, these patterns support recovery of what was monitored. They do not prove every organism or function recovered.

3a: Counts stayed below the baseline span in all six years after drought. = Supported; The monitored community returned to its baseline pattern by Year 14. = Not supported; The groups recorded after drought differed from those recorded at baseline. = Supported / 3b: choice B / 3c: Menu 1: B (a persistent change during the monitored period); Menu 2: C (do not isolate drought as the only cause)

Counts remain below 40 for all six years after drought. Annual grass is recorded, while flowering plants are not recorded in those years. These records support a persistent shift in the monitored community. They do not prove permanent absence, a permanent new ecosystem or drought as the only cause.

Exit key - collect work first

Part A: Menu 1 = A (recovery at R); Menu 2 = B (a persistent shift at S). Part B: choice B. Part C: choices B and D only. R counts return to the 80-100 baseline span in Years 7-10, with baseline groups recorded. S counts stay below 80 and recorded groups differ. Part C choice A is false because R does not stay below baseline in those years. The Year 5 dip is real but cannot establish the later outcomes.
Non-detection does not prove permanent absence, and these surveys do not isolate fire as the sole cause.

Matching hints - practice only

1a pathway

Start with the physical condition that supports plant growth.

1b

Compare all eight counts. Find the lowest and highest; then check whether the counts move in one direction.

2a

Check the later counts and the groups recorded, not only the lowest year.

2b

Use one observation about the later counts and one about the recorded groups.

3a

Check both the six later counts and the groups table. Returning counts and matching groups would support recovery.

3b

Compare all six later counts with 40-60, then check which groups were recorded.

3c

Separate evidence of a continuing pattern from evidence testing the only cause.

Teacher tally

Correct first tries: ____ / 7

Hints given: ____

Correct after feedback: ____ / 7

Independent exit: ____ / 3

Run a first classroom pilot

Grade 10 | HS-LS2-6 | Laramie Plains Drought Lab | PILOT 1.2

Teaching and practice

Target: 15-20 minutes of teaching and practice, plus 5-8 minutes for the exit. Student timing is untested. Read student page 1 together. Practice uses pages 2-5. The pathway (1a) is a scaffold; evaluating claims and evidence is the main reasoning work.

Keep first tries and retries separate

Keep original letters in First try. Offer the numbered hint on Teacher Guide page 2, then one retry in Try again. Students may reopen the worked example, matching the game. Whole-class option: collect first tries, give each missed-part hint aloud, allow one silent retry, then discuss. Tally first tries separately from results after feedback.

Independent exit

Use student packet pages 6-7 or both standalone exit pages after either practice format. Keep practice and keys out of sight. Do not coach the exit. Practice has 7 scored parts: 1a, 1b, 2a, 2b, 3a, 3b and 3c. Each part earns 1 point only when every required response is correct: all dropdowns, both select-two choices with no extras, or every grid row. No partial credit. Score exit A, B and C the same way, 1 point each (0-3). Retain raw subresponses and mark incomplete work separately.

Use scores to plan teaching

0-1: revisit graph/table comparisons and reasoning limits. 2: discuss the missed part and check a fresh case. 3: ask the student to explain both patterns and one limitation. These are next teaching steps, not proficiency labels. A and C use the same records: score them separately, but read them together; a mistaken claim can lead to mistaken evidence.

Codes and receipts

For paper-only practice, assign P01, P02 or other class codes. For screen practice followed by paper, copy the game code onto the exit. A code identifies work; it does not retrieve saved work. The paper-exit button also supplies a code. Go back changes exit format while preserving entered answers. Score the screen receipt against Teacher Guide page 2; the receipt itself has answers and no score.

Access and sessions

Share the hosted game link on phones and managed Chromebooks; raw HTML shared through Drive or Classroom may not run. No account or retrievable saved work. Record the receipt before closing; leaving or reloading after starting asks first. Read-aloud is off. Practice graphs print counts and offer a numbers table. Exit Figure 6 has a labeled grid and no printed point counts or numbers table. Keep this guide with the teacher.

Science and review limits

Counts are invented observations in a fixed model area with the same season and effort each year. They are not estimates of all organisms across the Laramie Plains. Groups are broad categories, not a complete species inventory. A baseline span is descriptive, not a statistical confidence interval or a universal stability threshold. Matching counts and monitored groups support a qualified recovery claim. Continued differences support a shift during the observed period, not permanence. Surveys do not establish a single cause. This edition changes response formats; equal totals do not make scores interchangeable with earlier editions. Built and reviewed with AI tools; no human classroom trial yet. Timing and print accessibility are untested. This is not an official WY-TOPP item set or a calibrated proficiency test.

Sources

Wyoming 2026+ science blueprint
https://resources.edu.wyoming.gov/wp-content/uploads/2025/05/2026-Science-Summative-Assessment-Blueprint.pdf

NGSS HS-LS2-6: arguments about ecosystem stability and change
https://www.nextgenscience.org/pe/hs-ls2-6-ecosystems-interactions-energy-and-dynamics