Element evidence rubric

Four criteria, each scored 1-4. Total: 16 points. Use with the lesson template and assignments.

Accuracy

4: All element identities, particle counts, quantities and units are correct; distinguishes atomic mass from mass number.

3: Main claims are correct; one minor label or unit error does not change the conclusion.

2: Several correct facts, but a significant identity, particle-count or quantity error affects the explanation.

1: Major factual errors or missing data prevent a valid explanation.

Evidence

4: Uses at least two relevant values or observations, names the source, and states an applicable limitation.

3: Uses relevant evidence and identifies its source; limitation is general or incomplete.

2: Includes some data, but relevance, source or context is unclear.

1: Gives unsupported claims or no usable evidence.

Reasoning

4: Connects evidence to the claim with an appropriate scientific explanation and addresses an exception or alternative.

3: Gives a sensible connection between evidence and claim, with limited discussion of alternatives.

2: Restates the data or gives a partially supported connection.

1: Provides no connection, or reasoning contradicts the evidence.

Communication

4: Organizes the response clearly with readable labels, units and appropriate vocabulary; another learner can follow it.

3: Mostly clear and organized, with minor ambiguity.

2: Meaning can be recovered, but missing labels or unclear structure interrupt understanding.

1: Response is incomplete or difficult to interpret.

Feedback record

Accuracy ___ /4 Evidence ___ /4 Reasoning ___ /4 Communication ___ /4

Total ___ /16. Strength: _____

Next step: _____

An omitted criterion can be recorded as 0; explain this expectation before assigning the task. Adapt response formats without lowering the scientific goal.

Suggested levels are starting points, not formal curriculum alignment. Use the site or printed data; no physical element samples are needed. Source data and limitations: elementexplore.com/sources.html. These original Element Explore materials may be copied and adapted for classroom use.