

Periodicity Evidence Challenge

Student Worksheet | g09_u04_w16

I can: use periodic evidence to make predictions, identify an overclaim, and propose data that tests a pattern.

Vocabulary: periodicity, trend, evidence, prediction, outlier, correlation, model limit, uncertainty.

1. Define periodicity.

2. What makes a prediction testable?

3. What is an overclaim?

4. State one family pattern and one limit.

5. State one across-period trend and one limit.

6. Data show radii 180,160,140 pm. Describe only what data support.

7. Data show ionization 500,740,900 kJ/mol. Make a cautious prediction for next comparable point.

8. Why should prediction be labeled extrapolation?

9. Identify IV/DV in element order versus atomic radius graph.

10. Explain why an outlier should be investigated, not deleted.

11. A table shows Groups 1,2,17 common charges +1, +2, -1. Predict Group 13 pattern with caveat.

12. A graph has unlabeled y-axis. What is missing?

13. Compare two elements in same group using a provided trend without calling result identical.

14. Give a claim-evidence-reasoning sentence from a three-point dataset.

15. Name two other factors that could affect measured reactivity score.

16. Design a data-only test of a periodic claim.

17. Explain why periodic-table position alone cannot establish safety.

18. Dataset A supports decreasing radius across period; Dataset B has one larger value. Write a defensible conclusion.

19. A student says “F is most electronegative, so every F compound reacts fastest.” Critique.

20. Create an evidence request that would distinguish a family pattern from a coincidental three-point pattern.
