

Periodic Families and Reactivity Patterns

Student Worksheet | g09_u04_w14

I can: locate families/periods, connect valence patterns to common ion patterns, and make cautious reactivity predictions from evidence.

Vocabulary: group, period, alkali metal, alkaline earth metal, halogen, noble gas, metalloid, reactivity pattern.

1. Define group and period.

2. Locate alkali metals by group number.

3. Locate alkaline earth metals by group number.

4. Locate halogens by group number.

5. Locate noble gases by group number.

6. How many valence electrons do Group 1 atoms commonly have?

7. Predict common ion charge for Group 2.

8. Predict common ion charge for Group 17.

9. Explain why noble-gas patterns are often less reactive in simple models.

10. Is hydrogen an alkali metal in every chemical sense? State caution.

11. Compare period 2 and period 3: what does period number indicate in shell model?

12. Classify Si broadly: metal, nonmetal, or metalloid.

13. Why are family labels useful but not complete descriptions?

14. Use valence count to predict likely ion from Group 13.

15. Explain why reactions are not safe to predict/test by mixing household products.

16. Read supplied table: Li, Na, K reaction-rate scores rise 2,5,9. Describe pattern without claiming cause.

17. Propose a graph/data analysis activity for family reactivity that needs no chemicals.

18. Compare Mg and Ca using group membership; state a cautious prediction.

19. A Group 17 element has an unusual compound. Does that disprove family pattern? Explain.

20. Critique: "Every element in a column behaves identically."
