

Periodic Trends: Radius, Ionization, Electronegativity

Student Worksheet | g09_u04_w15

I can: describe periodic trends, use attraction/shielding as a grade-appropriate explanatory model, and state exceptions/limits.

Vocabulary: atomic radius, ionization energy, electronegativity, shielding, effective attraction, period, group.

1. Define atomic radius in this course's comparative model.

2. Define first ionization energy.

3. Define electronegativity.

4. State general radius trend across a period.

5. State general radius trend down a group.

6. State general first-ionization trend across a period.

7. State general electronegativity trend across a period.

8. Which is larger: Na or Cl? Explain trend.

9. Which is larger: Li or K? Explain trend.

10. Which has higher first ionization energy: Mg or Na?

11. Which is more electronegative: F or O?

12. What does shielding mean in a simple model?

13. Why can more occupied shells increase radius down a group?

14. Why can increasing nuclear charge pull electrons closer across a period?

15. Why is “effective attraction” a model, not a directly visible force arrow?

16. Read supplied data: radii 160, 140, 120 pm across a period. Describe pattern.

17. Use the data table below, then identify one possible outlier to investigate.

Element order	A	B	C	D
First ionization energy (kJ/mol)	500	740	900	860

18. Predict which likely loses an electron more easily, K or Br; state evidence and limit.

19. Explain why electronegativity is not an atom’s measured charge.

20. Critique: “Every trend has no exceptions, so one number proves all behavior.”
