

Why the Trends Happen

10th Grade

Two competing forces explain every periodic trend.

Two factors compete: more protons pull harder, more shells push the outer electrons further away.

Trend	Across →	Down ↓
Atomic radius	decreases	increases
Ionisation energy	increases	decreases
Electronegativity	increases	decreases
Metallic character	decreases	increases

Across a period: same shells, more protons, so a tighter pull. Down a group: more shells, so more shielding.