

Periodic Trends

9th Grade

Atomic radius, ionisation energy and electronegativity, with arrows for each trend.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
H																	He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba		Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra		Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn	Nh	Fl	Mc	Lv	Ts	Og
La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu			
Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr			

across a period →



THE FOUR TRENDS

Atomic radius

DECREASES →

INCREASES ↓

more protons pull the same shell in tighter

Ionisation energy

INCREASES →

DECREASES ↓

harder to remove an electron held more tightly

Electronegativity

INCREASES →

DECREASES ↓

F is the highest; noble gases are excluded

Metallic character

DECREASES →

INCREASES ↓

metals give electrons away easily

SHORTCUT Radius grows down and left. Everything reactive-with-electrons grows up and right.