

CH 221 "q&d" Guide to Periodic Trends

"q&d" = "Quick 'n' Dirty"

- Each column represents a family or group of elements whose properties are similar
- Periodic Trends are **generalizations**; subtle deviations in trend exist for almost all periodic properties
- **Metallic Properties** increase going down a column and moving left across a period
- **Atomic Size** increases going down a column and moving left across a period
- **Cationic Size** increases going down a column and moving left across a period
- **Anionic Size** increases going down a column and moving left across a period
- **First Ionization Energy** increases going up a column and moving right across a period ($M \rightarrow M^+ + e^-$)
- **Electron Affinity** increases going up a column and moving right across a period *if* the noble gases are omitted ($X + e^- \rightarrow X^-$)
- **Electronegativity** increases going up a column and moving right across a period *if* the noble gases are omitted ($X + e^- \rightarrow X^-$)

Increasing ionization energy
Decreasing atomic radius
Increasing nonmetallic character and electronegativity
Decreasing metallic character

