#### Trends in the Periodic Table

Interpreting the Periodic Table

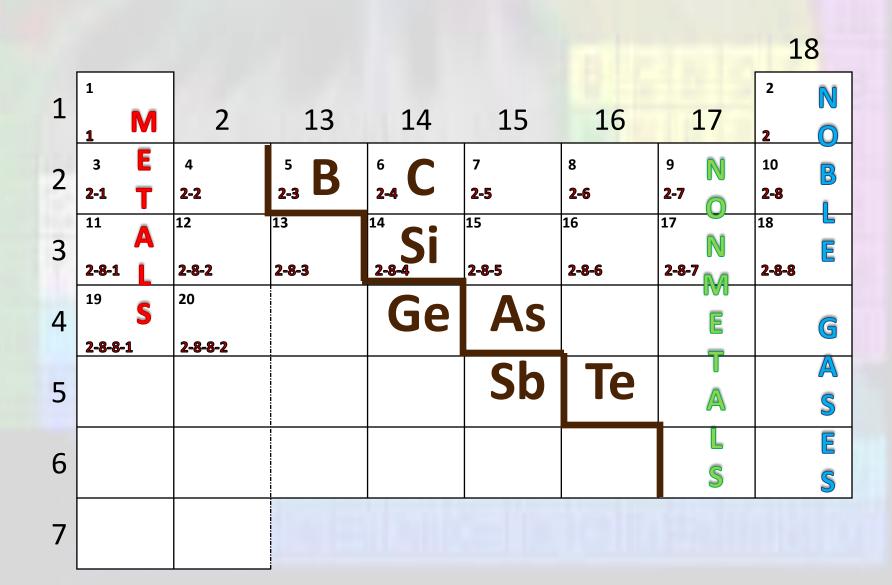
# Going across the table from left to right within a row or period

- The number of protons increases.
- The pull on the electrons increases.
- The covalent atomic radius decreases.
- Metallic properties decrease (except in the transition elements)
  - Ionization energy increases.
    - Ionization energy energy needed to remove the most loosely held electron from an element in the gaseous phase
    - Found in Table S
    - second ionization energy it requires more energy to remove each successive electron.
  - Electronegativity increases (also Table S).
  - There is a gradual change from positive oxidation states to negative oxidation states.
- The number of valence electrons increases.
- The number of shells remains the same.

## Going down the table within a group or family

- The number of protons increases.
- The number of shells increases.
- The atomic radius increases.
- The pull on the electrons decreases.
- Metallic properties increase.
- The number of valence electrons remains the same.

### Resulting Arrangement



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