

The Periodic Table

Periodic Trends

- **Groups:** Vertical columns, elements with similar chemical properties, same number of valence electrons, and usually the same valency.
- **Periods:** Horizontal rows, elements change from metallic to non-metallic across a period.
- **Metals vs. Non-metals:**

Property	Metals	Non-metals
Appearance	Shiny, malleable, ductile	Dull, brittle
Conductivity	Good conductors of heat and electricity	Poor conductors
Reactivity	Generally reactive, form cations	Generally less reactive, form anions

Export to Sheets

Group Properties

- **Group 1 (Alkali Metals):**
 - Highly reactive metals.
 - Soft, low melting/boiling points.
 - React with cold water to form hydroxides and hydrogen.
- **Group 7 (Halogens):**
 - Diatomic non-metals.
 - Become darker in color down the group.
 - Increase in melting/boiling points down the group.
 - Decrease in reactivity down the group.
- **Transition Elements:**

- Metallic elements in the middle of the periodic table.
- Higher densities and melting points than group 1 and 2 elements.
- Less reactive than group 1 and 2 elements.
- Form colored compounds.
- Have multiple valencies.
- **Group 0 (Noble Gases):**
 - Unreactive due to full outer electron shells.
 - Used in various applications (e.g., helium in balloons, argon in light bulbs).

Remember:

- The periodic table is organized based on the number of protons in the nucleus (atomic number).
- Trends in properties can be observed across periods and down groups.
- Understand the characteristics of different groups and the elements within them.