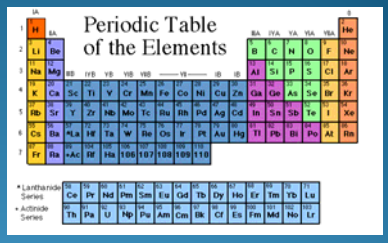
# The Families of the Periodic Table



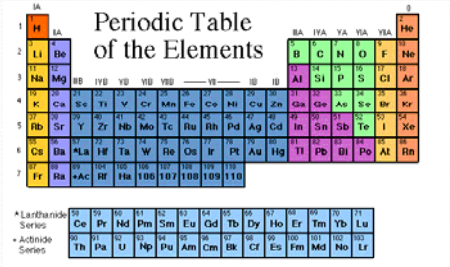

Adapted from:

Some images are from www.chem4kids.com

www.middleschoolscience.com 2008

## Families on the Periodic Table

- Elements families are group based on their **chemical** properties.
- Each family has a **specific name.**
- The valance electrons are responsible for the properties of each family.



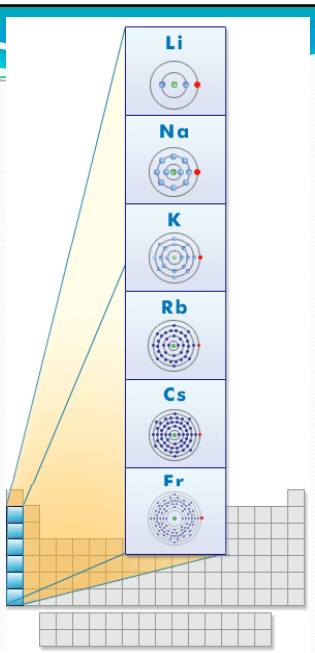
# What We Already Know…

- Elements classified as Metals, Non-metals, or Metalliods
- ROWS = PERIODS (horizontal)
- COLUMNS = GROUPS or FAMILIES (vertical)

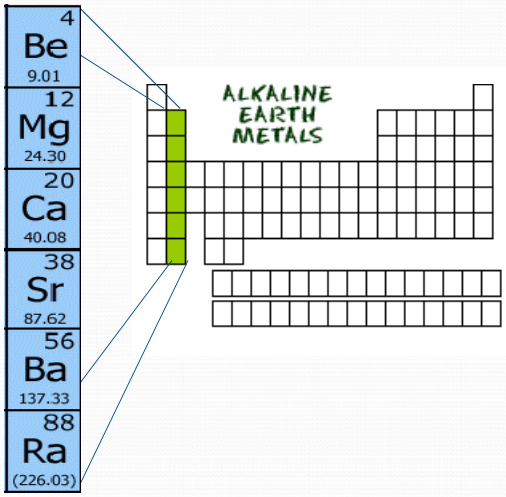
# ALKALI METALS

**Group 1A / 1**

- Hydrogen is ***not*** a member, it is a **non-metal**
- 1 valance electron
- +1 charge
- Soft and silvery metals
- ***Very*** reactive, esp. with water
- Do not occur freely in nature
  - Usually found in compounds



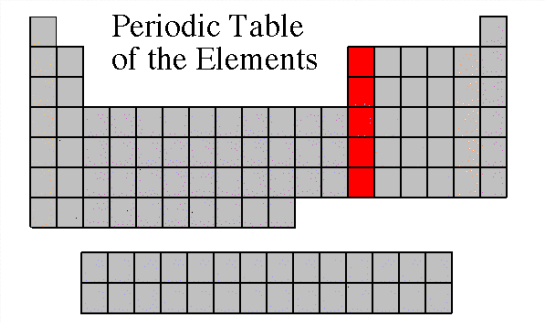
# ALKALINE EARTH METALS




Group 2A / 2

- 2 valance electrons
- +2 charge
- Reactive, but less than Alkali metals

# BORON FAMILY

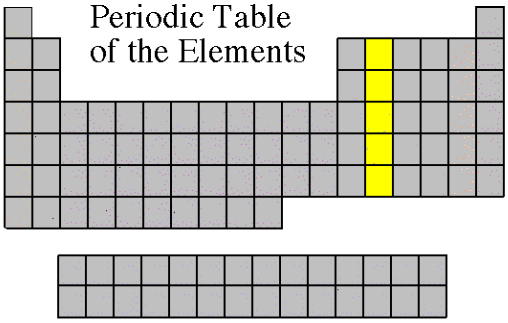



Group 3A / 13

- 3 valance electrons
- +3 charge

# CARBON FAMILY

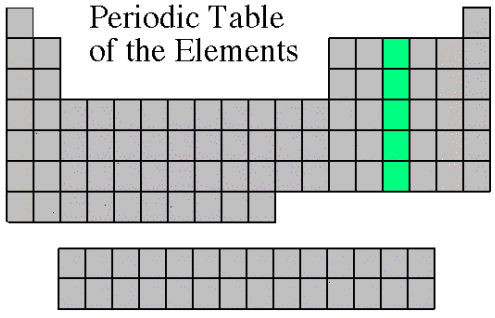
Group 4A / 14




- 4 valance electrons
- +/- 4 charge

# NITROGEN FAMILY

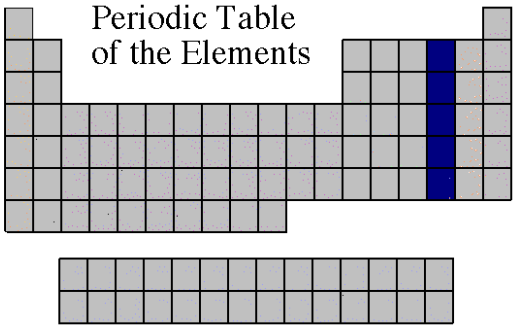
Group 5A / 15




- 5 valance electrons
- -3 charge

# OXYGEN FAMILY

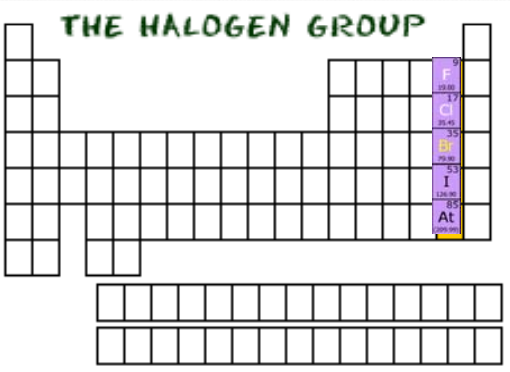
**Group 6A / 16**




- 6 valance electrons
- -2 charge

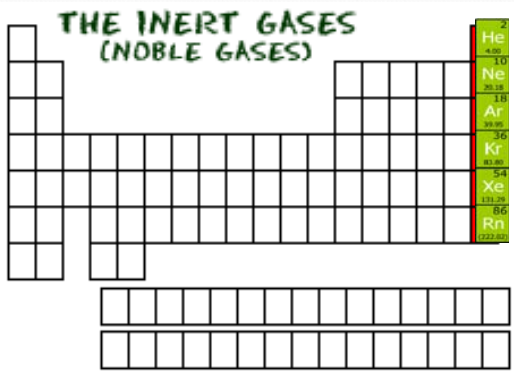
# Halogens

**Group 7A / 17**




- 7 valance electrons
- -1 charge
- **Very reactive**
- Varying states of matter at room temp.
  - $F_2$ and $Cl_2$ are gases, $Br_2$ is liquid, $I_2$ is solid

# Noble Gases

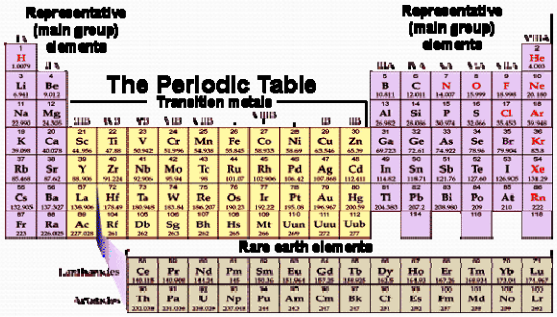



**Group 8A / 18**

- Also called Inert Gases
- 8 valance electrons= Full
- Helium (He) has only 2 valance electrons = Full
- Not reactive with other elements (no charge)

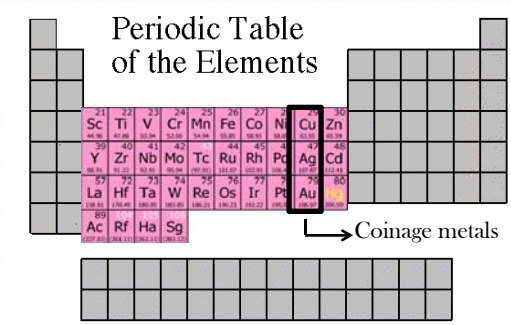
# Representative Elements

- All elements that are found in the s and p blocks
- Columns 1-2 and 13-18
- Columns 1A-8A (no B cloumns!)



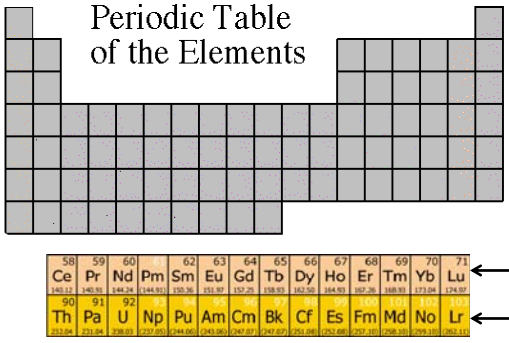
# TRANSITION METALS

**The d-block or "B"columns**




- All have 2 valance electrons
- Can have multiple charges

# Rare Earth Metals




- Also called Inner - Transition Metals
- f-block
- 2 valance electrons
- All actinides are radioactive