

# Basics of the Periodic Table

Period →

1A	2A	transition metals					3A	4A	5A	6A	7A	8A
Li	Be	B Groups					B	C	N	O	F	Ne
Alkali Metals	Earth Metals										Halogens	

## A Group - vs - B Group

- ⊗ A Group - "tall columns", also called main group elements  
↳ the number of the group = number of valence electrons!
- ⊗ B Group - transition metals

Groups = Columns

- A group # = # of valence electrons
- groups have similar chemical properties

### Group 1A: Alkali Metals

- very reactive with water
- when react with oxygen, it is a 2:1 ratio (example  $H_2O$ )
- reactivity increases down a group

### Group 2A: Alkaline earth metals

- usually called earth metals
- very soft metals (like butter)
- silvery in color
- will react with oxygen in a 1:1 ratio (example  $CaO$ )
- reactivity increases down a group

### Group 7A: Halogens (Nonmetals)

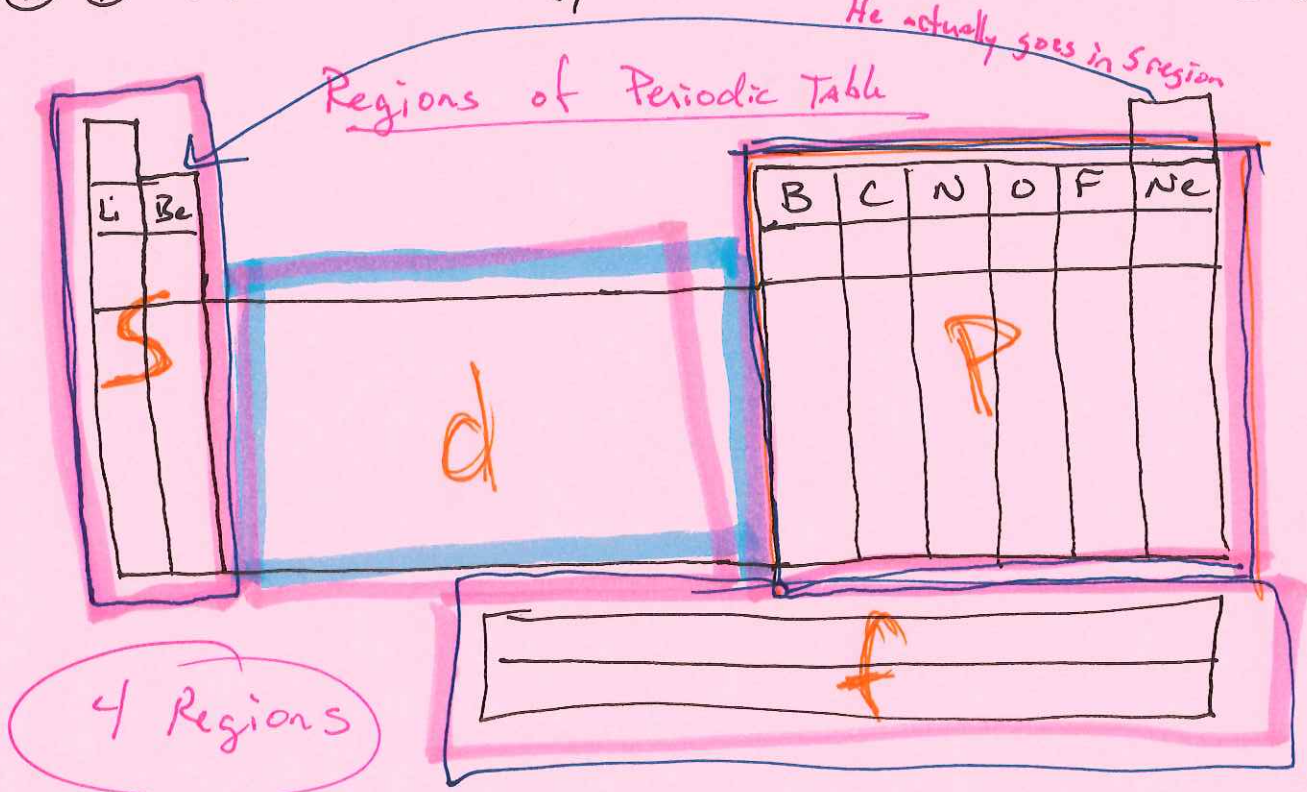
- reactivity increases up a group

### Group 8A: Noble Gases

- non reactive (inert)

Periods → side to side (Horizontal rows)

⊛ ⊛ ⊛ Period # = energy level of valence electrons ⊛ ⊛ ⊛



S Region (groups 1A, 2A) → 2 elements across

P Region (groups 3A, 4A, 5A, 6A, 7A, 8A) → 6 elements across

d Region (transition metals) → 10 elements across

f Region (actinides, lanthanides) → 14 elements across

⊛ We will start using above information to describe electron locations!

Example:

Ca:  $n=4$  ← highest energy level

S region

2 valence electrons

N:  $n=2$

p region

5 valence electrons

Al:  $n=3$   
p region  
3 valence electrons