

I	II	← Roman numeral denotes Group →	III	IV	V	VI	VII	VIII			
1	2	← Newer Arabic numbering convention →	13	14	15	16	17	18			
ACTIVE METALS			NONMETALS (See Note 2)				Noble Gases				
1 H							2 He				
3 Li	4 Be	TRANSITION METALS			5 B	6 C	7 N	8 O	9 F	10 Ne	
11 Na	12 Mg				13 Al	14 Si	15 P	16 S	17 Cl	18 Ar	
19 K	20 Ca	21 Sc	first row, Sc – Zn		30 Zn	32 Ge	33 As	34 Se	35 Br	36 Kr	
37 Rb	38 Sr	39 Y	second row, Y – Cd		48 Cd	OTHER METALS		51 Sb	52 Te	53 I	54 Xe
55 Cs	56 † Ba	71 Lu	third row, Lu – Hg		80 Hg			84 Po	85 At	86 Rn	
87 Fr	88 ‡ Ra	103 Lr	fourth row, Lr – 112		112						

INNER TRANSITION METALS

† lanthanide series, La – Yb, atomic numbers 57 – 70
‡ actinide series, Ac – No, atomic numbers 89 – 102

- Note the unique characteristics of the simplest element, **hydrogen** (H), which has 1 electron. Hydrogen is definitely a **nonmetal**, but it can lose its single electron to form the cation H^+ , called the proton, so it is put in Group IA (Group 1) by analogy to the alkali metals, each of which forms the characteristic cation M^+ . Hydrogen can also gain one electron to form H^- , the hydride ion, though this is much less common, and so in some periodic tables H is also given a place at the top of Group VIIA (Group 17), by analogy to the halogens, each of which forms the characteristic anion X^- . H also forms covalent bonds in its many compounds with other nonmetals, as do the halogens, which is chemical behavior characteristic of nonmetals.
- The elements B, Si, Ge, As, Sb, Te, and Po, located immediately on either side of the dark stepped diagonal line separating the **metals** from the **nonmetals**, have many intermediate properties, and are termed **semimetals** or **metalloids**. (Note: Al is definitely a metal.)
- You should *memorize* at this time the following family (group) names and locations:
The two groups that together constitute the **active metals**:
 - The **alkali metals** (Group IA or 1): Li, Na, K, Rb, Cs
 - The **alkaline earth metals** (Group IIA or 2): Be, Mg, Ca, Sr, Ba, Ra
 The following families of nonmetals:
 - The oxygen family or **chalcogens** (Group VIA or 16): O, S, Se, Te
 - The **halogens** (Group VIIA or 17): F, Cl, Br, I
 - The **noble gases** (rare or inert gases) (Group VIIIA or 18): He, Ne, Ar, Kr, Xe, Rn