

D. Features of the Modern Day Periodic Table

a.) Elements are arranged according to \_\_\_\_\_  
 (a number that represents the number of protons in each atom of that element)

b.) Elements are arranged in vertical columns called \_\_\_\_\_  
 or \_\_\_\_\_. The elements in these columns contain similar chemical properties.

eg.) \_\_\_\_\_ - (group 1) - are soft, silver-colored metals that react violently with water to form basic solutions.

\_\_\_\_\_ - (group 2) - are light, reactive metals that form oxide coatings when exposed to air.

\_\_\_\_\_ - (group 17) - are extremely reactive

\_\_\_\_\_ - (group 18) - non-reactive/inert gases.

\_\_\_\_\_ - (groups 3-12) - this group exhibits a wide range of chemical and physical properties.

c.) Elements are also arranged in horizontal rows called \_\_\_\_\_.  
 (early studies of chemistry often deal with Period 3 - Na -----> Ar)

d.) \_\_\_\_\_ are located on the left of the "staircase line" and the \_\_\_\_\_ are on the right. Along the line are a group called \_\_\_\_\_ which exhibit metallic and non-metallic properties.

e.) Some periodic tables contain more than the basic information (symbol, atomic number, and name) as shown below:

BASIC

DETAILED

atomic number	19	39.10	atomic molar mass (g/mol) shown in brackets when there is no fixed isotope ratio
element symbol	K	1+	common ion charge
element name	potassium	(s)	other ion charge
			usually found as: (s) solid, (l) liquid, (g) gas or (syn) synthetic

(theoretical)  
 atomic number  
 electronegativity  
 common ion charge  
 other ion charge

Key	26	55.85
	1.8	1535
	3+	2750
	2+	7.87
	<b>Fe</b>	
	iron	

element symbol

(empirical)

atomic molar mass (g/mol)  
 melting point (°C)  
 boiling point (°C)  
 density (g/cm<sup>3</sup>)  
 density of gases (g/L)  
 gases in red  
 liquids in green  
 synthetic in blue