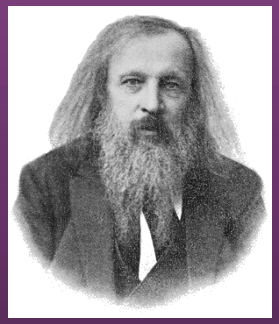
History of the Periodic Table

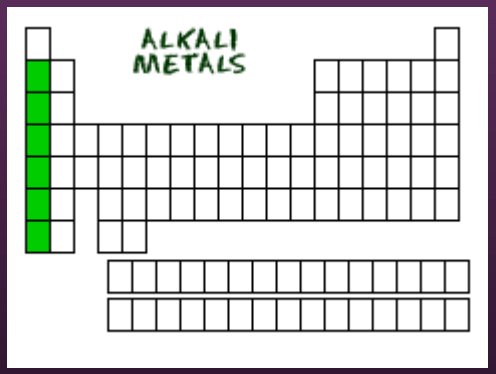


In **1869**, **Dmitri Mendeleev** created the first periodic table and ordered the elements by their **atomic masses**. He noticed that elements in the same groups had **similar chemical and physical properties**. However, there were some **gaps** in his table.

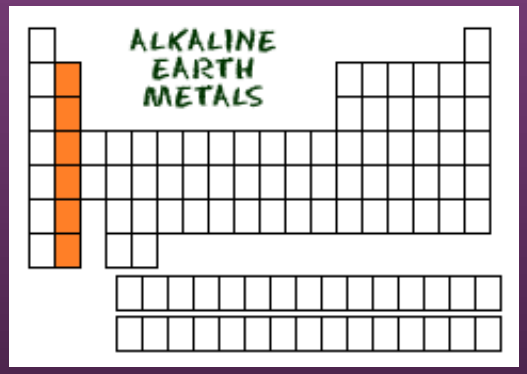
In **1913,** when **Henry Moseley** arranged the elements in the periodic table by their **number of protons** rather than their atomic weights, the flaws in the periodic table that had been making scientists uncomfortable for decades simply disappeared.

Periodic Table Columns

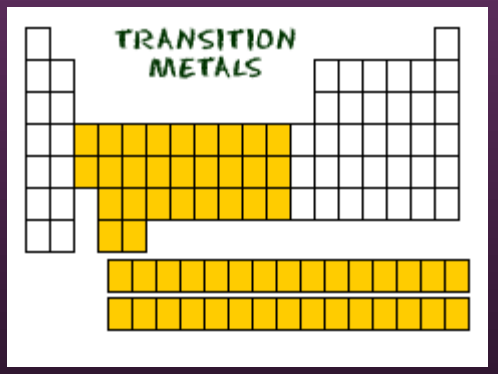
Left side of the table = metal elements



Group 1
Alkali Metals
(except for hydrogen)
Most reactive metals

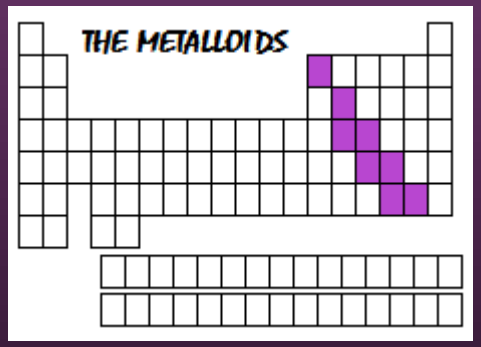


Group 2
Alkaline Earth Metals
Slightly less reactive

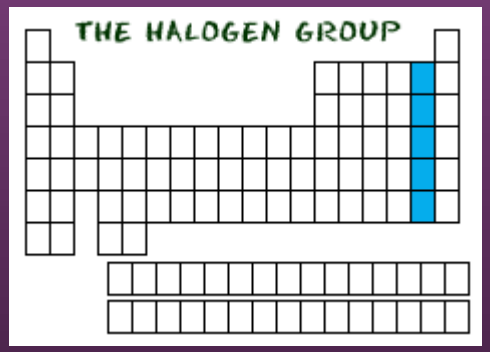


Groups 3 – 12
Transition Metals
Can combine in many ways with nonmetals

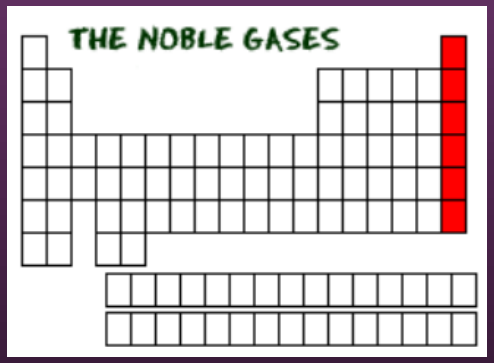
Right side of the table = nonmetal elements



Zig Zag Line
Metalloids
Semi-metals have properties of both metals and nonmetals



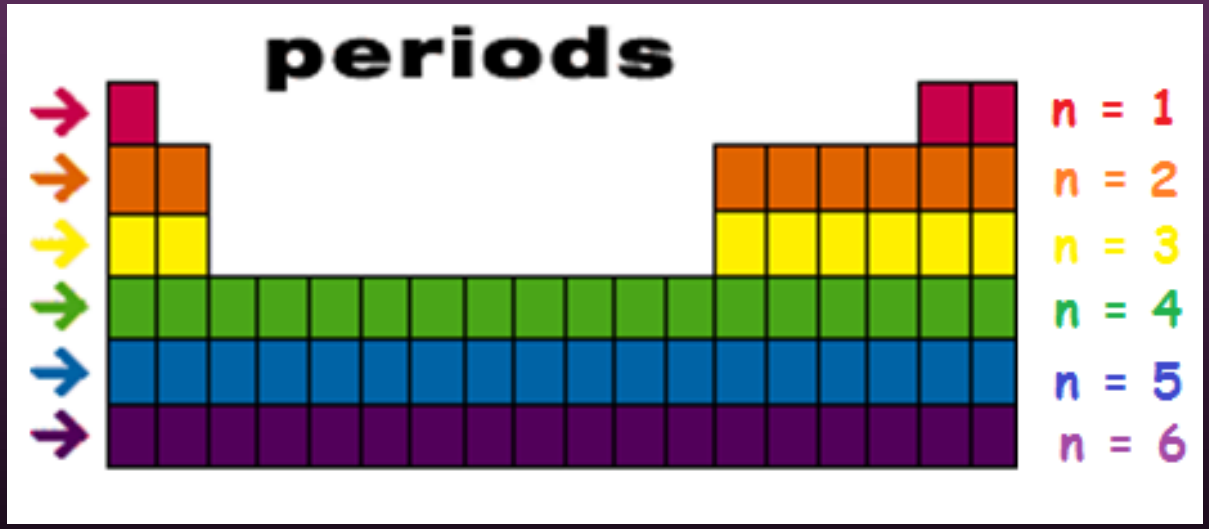
Group 17
Halogens
Most reactive nonmetals

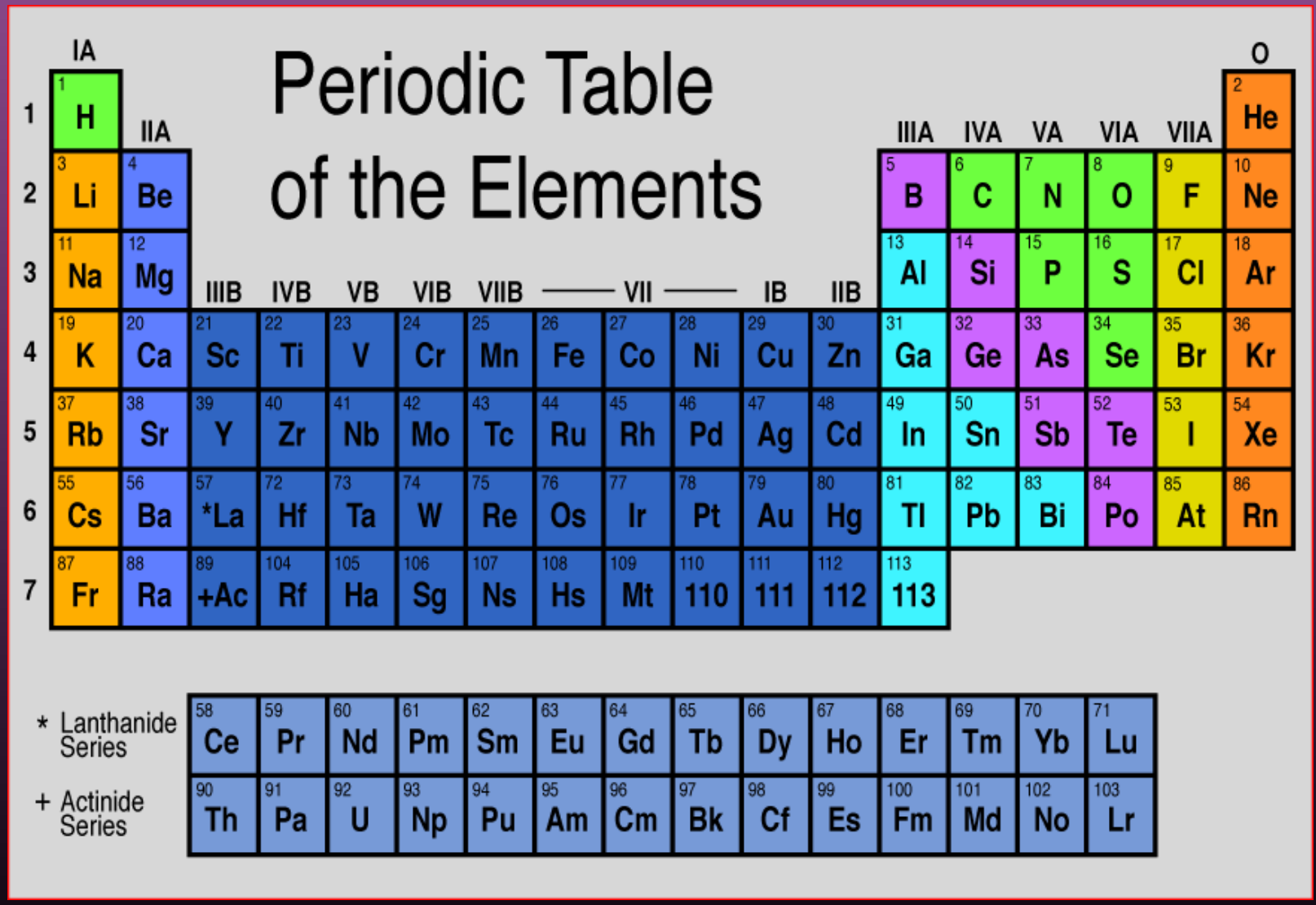


Group 18
Noble Gases
Un-reactive gases.
Full octet.

Periodic Table Rows

Horizontal rows on the periodic table are called **periods**. Each row represents a new electron **orbital** cloud at a higher **energy level**.




Periodic Table of the Elements
IA
IIA
IIIB
IVB
VB
VIB
VIIB
VII
IB
IIB
IIIA
IVA
VA
VIA
VIIA
O
1 H
2 He
3 Li
4 Be
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
22 Ti
23 V
24 Cr
25 Mn
26 Fe
27 Co
28 Ni
29 Cu
30 Zn
31 Ga
32 Ge
33 As
34 Se
35 Br
36 Kr
37 Rb
38 Sr
39 Y
40 Zr
41 Nb
42 Mo
43 Tc
44 Ru
45 Rh
46 Pd
47 Ag
48 Cd
49 In
50 Sn
51 Sb
52 Te
53 I
54 Xe
55 Cs
56 Ba
57 *La
72 Hf
73 Ta
74 W
75 Re
76 Os
77 Ir
78 Pt
79 Au
80 Hg
81 Tl
82 Pb
83 Bi
84 Po
85 At
86 Rn
87 Fr
88 Ra
89 +Ac
104 Rf
105 Ha
106 Sg
107 Ns
108 Hs
109 Mt
110 110
111 111
112 112
113 113
* Lanthanide Series
58 Ce
59 Pr
60 Nd
61 Pm
62 Sm
63 Eu
64 Gd
65 Tb
66 Dy
67 Ho
68 Er
69 Tm
70 Yb
71 Lu
+ Actinide Series
90 Th
91 Pa
92 U
93 Np
94 Pu
95 Am
96 Cm
97 Bk
98 Cf
99 Es
100 Fm
101 Md
102 No
103 Lr