

Periodic Table

Elements

- Every capital letter represents an element:
 - Example: Na, H, Mg, not MG

JUST WRITE THE
UNDERLINED PARTS
USE CORNELL NOTE FORMAT



Antimony	Sb
Arsenic	As
Boron	B
Germanium	Ge

back

Periodic Table Summary

- Divided into 4 areas:
- metals
- Nonmetals
- semi-metals
- noble gases (Inert Gases)

- vertical columns
- There are 18 groups
- Also called FAMILY
(families)
- Elements in the same groups
have:
 - Similar properties
 - Same number of valence electrons

PERIODIC TABLE OF THE ELEMENTS

1—New Notation La — CAS' Version																		LEGEND		1 Series					
		Name																							
		Atomic Number																							
		Atomic weight ^a																							
		Oxidation States ^b (Valence)																							
		Melting Point (°C)																							
		Boiling Point(°C)																							
		Density ^c (g/cm ³)																							
		Electronegativity ^d (Pauling)																							
		Atomic Radius (1 x 10 ⁻¹⁰ m)																							
	H	He																	12	14	15	16	17	18	He
2	Li	Be																	B	C	N	O	F	Ne	
3	Na	Mg																	Al	Si	P	S	Cl	Ar	
4	K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn		Ga	Ge	As	Se	Br	Kr						
5	Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe							
6	Cs	Ba		Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn							
7	Fr	Ra		Rf	Ds	Sg	Bh	Hs	Mt	Ds	Uuu	Uuh	Uut	Uuq	Uup	Uus	Uuo								
Transuranium Elements																									
	La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lr										
	Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr										

GROUP OF ELEMENTS:

- Inert Gases
- Alkali Metals
- Alkaline Earth Metals
- Early Transition Metals
- Iron Group
- Late Transition Metals
- Carbon Group
- Nitrogen Group
- Halogens
- Lanthanide Metals
- Actinide Metals

SUPERSERIES

- ^a Based on the assigned relative atomic mass of ¹²C = 12, 0 exact
- ^b Most usual
- ^c At 20 °C
- ^d Density for solid at 20°C values otherwise specified are at 0°C

- What
are
Periods?

PERIODS

- Also called rows
- Are horizontal
- There are 7 rows
- Elements in the same
row have the same
number of electron
shells



- What are metals?



- Are located on the left side of dark diagonal line
- Conduct heat and electricity
- Are ductile (wires)
- Are malleable (smash into thin sheets)

Shiny

- What are Non- metals?

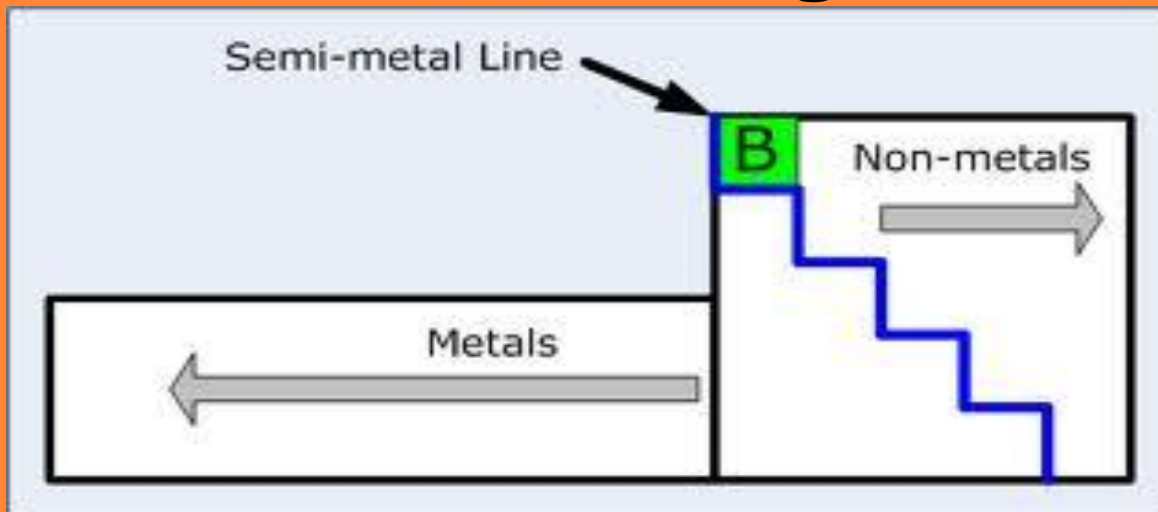


- Are located on the right side of the dark diagonal line
- Are brittle (break)
- Are dull (not shiny)

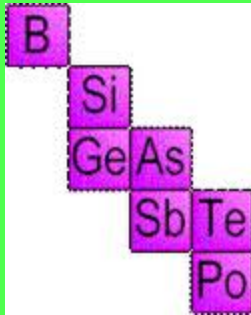


- Dark diagonal line

- Separates
metals (left)
from non-metals
(right)

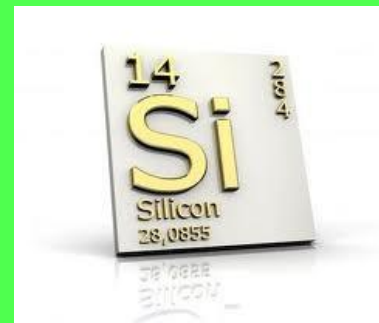


- Semi-metals
(metalloids)

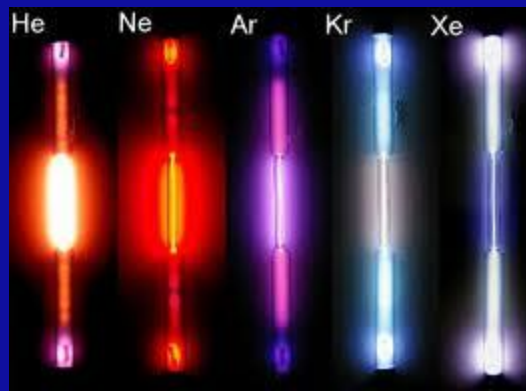
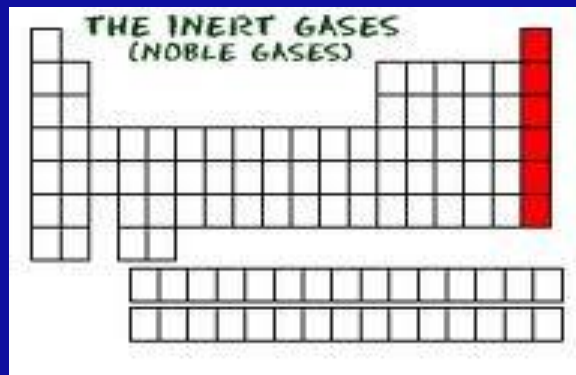



- Are elements that
are touching the
dark diagonal line
EXCEPT
ALUMINUM!

- such as: B, Si, Ge, As, Sb, Te, Po, At



- "Noble gases"
or "Inert gases"



- Group 18
- These gases are inert 
- They do not react
- All electron shells are full

Names of the groups/families

<u>#1</u>	<u>1 Val e- Alkali Metals</u> ** _{most reactive METAL}
<u>#2</u>	<u>2 Val e- Alkaline Earth Metals</u>
<u>#3 - #12</u>	<u>(skip Val e-) Transition Metals</u>
<u>#13</u>	<u>3 Val e- Boron</u>
<u>#14</u>	<u>4 Val e - Carbon</u>
<u>#15</u>	<u>5 Val e- Nitrogen</u>
<u>#16</u>	<u>6 Val e- Oxygen</u>
<u>#17</u>	<u>7 Val e- Halogen</u> ** _{most reactive NON METAL}
<u>#18</u>	<u>8 Val e- All Shells Full Inert Gas (Noble Gas)</u>