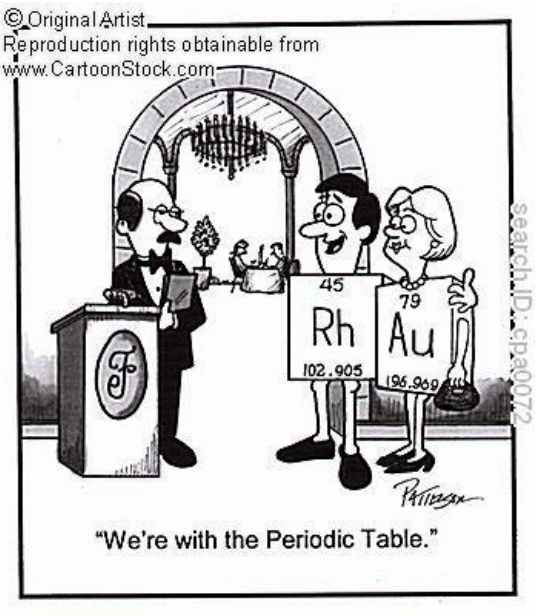
Periodic Table



Name_____

Test Date_____

The Periodic Table

History

Newlands: law of _____

*

Mendeleev

Arranged the periodic table by _____ _____.

*

Modern Periodic Table

Moseley: discovered the _____ _____

*

*******The Periodic Table as we know it today is arranged by _____ _____ _____.*******

Arrangement of the Periodic Table

Metals:

*

*

*malleable-

*ductile-

*

*

*

Examples:

Nonmetals:

*

*

*

*

*

*

Examples:

Metalloids:

*
*
*

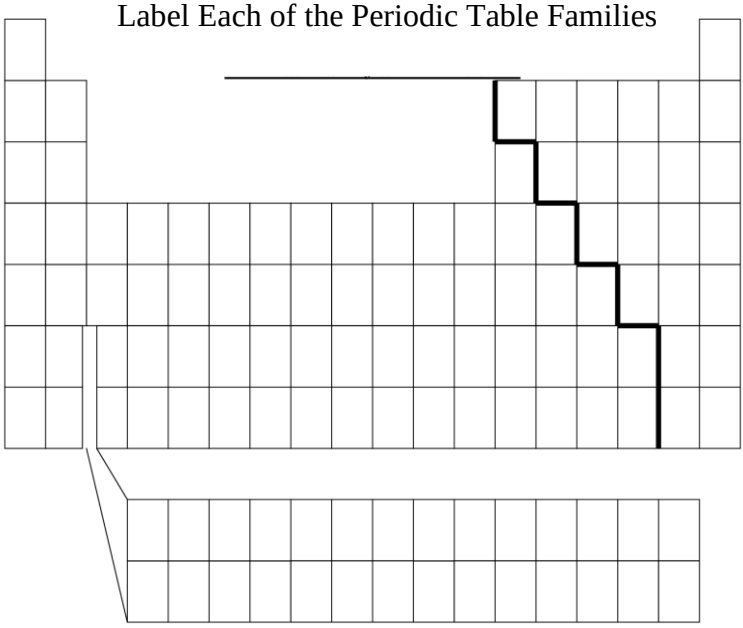
Examples:

Periodic Table Organization:

Groups:

Periods:

Label Each of the Periodic Table Families



Family Name	*Characteristics*	*Example elements*	*Representative or transition*

Valence Electrons and Charges (Oxidation Numbers)

Group #	*1*	*2*	*3-12*	*14*	*15*	*16*	*17*	*18*
Valence Electrons								
Oxidation Number (charges)								

When an element **loses** electrons it becomes a _____ _____ ( ).

When an element **gains** electrons it becomes a _____ _____ ( ).

Helium **ONLY** has 2 valence e^- even though it's a noble gas

Valence dot diagrams

Calcium:

Nitrogen:

Helium:

Xenon:

Selenium:

Periodic Trends

List the different trends:

1)
2)
3)
4)
5)

Atomic Radius

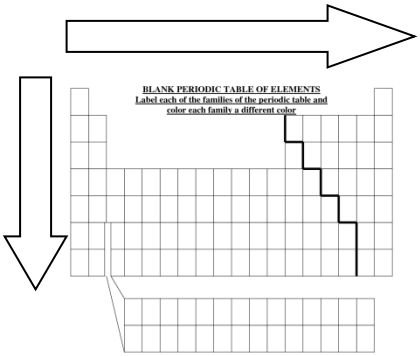
Definition:

Trend:

Across a Row:

Down a Group:

Largest Element: Why?



Apply It!

1) Bigger: Li or K?

2) Larger: C or F?

Ionic Radius

Definition:

Trend:

Apply It!

1) Larger: Ca or Ca^{2+}?

2) Larger: Br or Br^{--}?

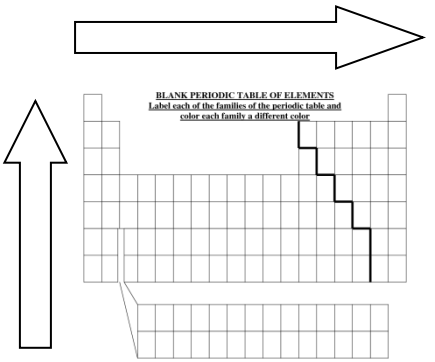
Reactivity:
Metals:
Trend:

Nonmetals:
Trend:

Ionization Energy
Definition:

Trend:
Across a Row:
Down a Group:

Highest F.I.E? Why?

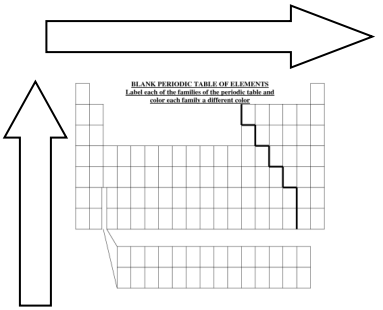


Apply It!
1) Higher: Cl or I?

2) Higher: Na or S?

Electronegativity:
Definition:

Trend:
Element with Highest EN: Why?



Apply It!
1) Higher: C or N?

2) Higher: Cu or Fe?

Factors Affecting Periodic Properties:

1. Nuclear charge:

2. Atomic size:

3. Shielding:

4. Sublevel stability: