WNHS Chemistry Name Key Per ____

Periodic Trends

1. Discuss the importance of Mendeleev's work. What did he do?

Put together the first Periodic table organized elements By properties and Increasing atomic mass

2. Identify each element as a metal, metalloid, or nonmetal.

a) NM fluorine

b) metalloid germanium

c) M zinc

d) NM phosphorous

e) M lithium

e) NM carbon

3. Give two examples of elements for each category.

a) noble gases Group 8 He Ne

b) halogens Group 7 F Cl

c) alkali metals Group 1 Li Na

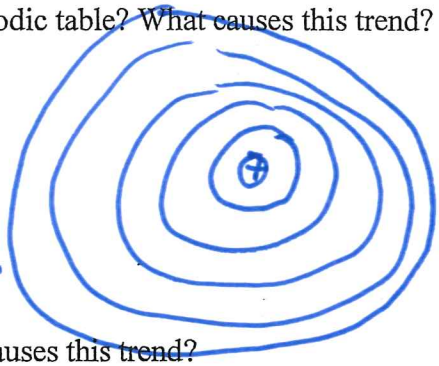
d) rare earth metals Below P.T. Ce Pr

3) alkaline earth metals Group 2 Mg Be

3) transition metals B Block Sc Ti

4. What trend in atomic radius do you see as you go down a group on the periodic table? What causes this trend?

Size Increases! B/C you add Energy levels!



5. What trend in atomic radius do you see as you go across a period? What causes this trend?

Size decreases across! Nucleus pulls harder on e's with more protons.

6. Circle the atom in each pair that has the largest atomic radius.

a) **Al** or **B** b) **Na** or **Al** c) **Br** or **Cl** d) **S** or **O** e) **C** or **F** f) **Mg** or **Ca**

7. Which elements (metals, nonmetals or metalloids) tend to become Cations? How?

(+) = cations Metals give Away e⁻s so more protons (+) than electrons (−).

8. Which elements (metals, nonmetals or metalloids) tend to become Anions? How?

(−) = anions Nonmetals take e⁻s! so more e⁻ than protons (+).

9. Circle the atom in each pair that that is more reactive than the other.

a) **O** or **Se** b) **Na** or **K** c) **Li** or **Be** d) **Ca** or **Ba** e) **P** or **Ar** (Noble gas) f) **Li** or **K**

g) **He** or **Rn** h) **S** or **Cl** i) **Cl** or **I** j) **Ca** or **K** k) **Ba** or **CS** l) **Se** or **Br**

Neither (Noble gases)

10. What are valance electrons? What is there use in an atom?

e⁻s in outermost or highest energy level

USED In Bonding !!

11. How many valence electrons do the following atoms have?

a) Ca 2e⁻ b) Li 1e⁻ c) Cl 7e⁻ d) S 6e⁻ e) Ba 2e⁻

f) Br 7e⁻ g) As 5e⁻ h) O 6e⁻ i) Sr 2e⁻ j) Ga 3e⁻