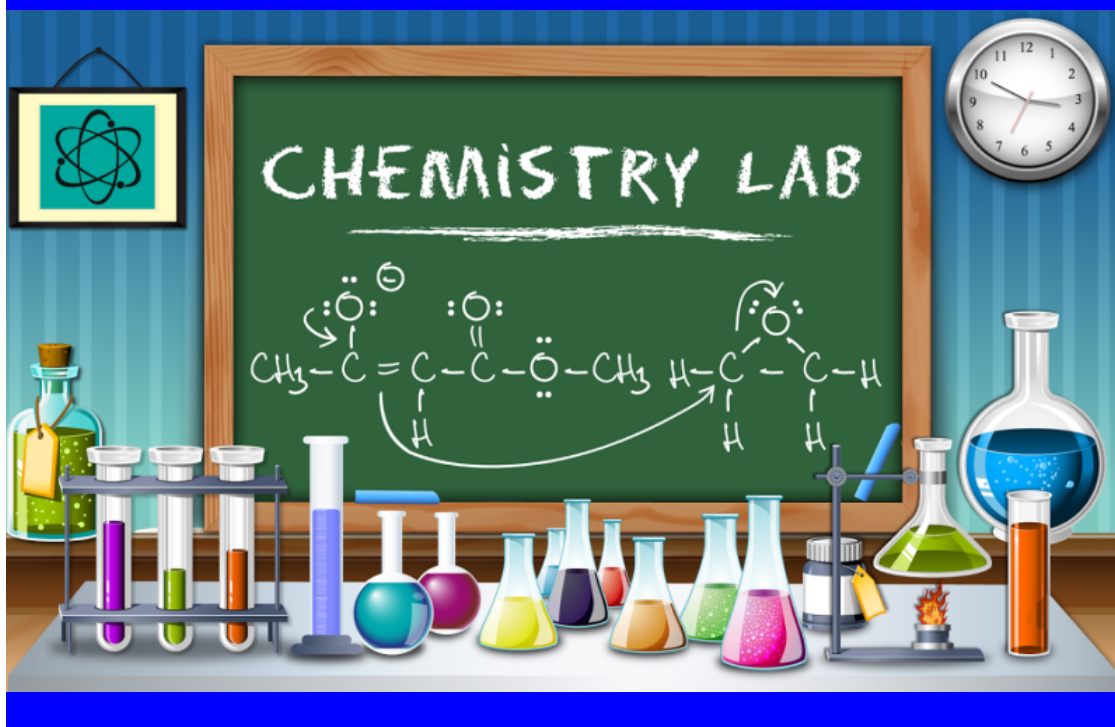


Welcome!! Please grab your ISN and have a seat!
Please watch the EDpuzzle on periodic trends!



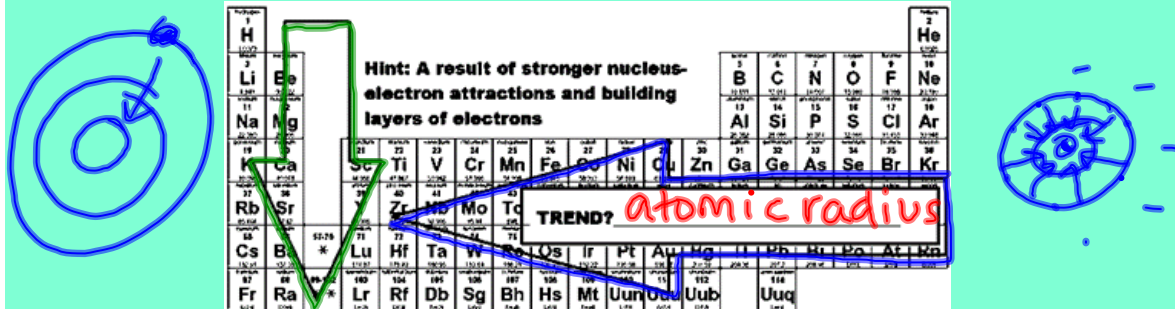
Oct 18-10:17 AM

WWK:

17. nuclear charge- total number of protons in the nucleus (same as the atomic #)

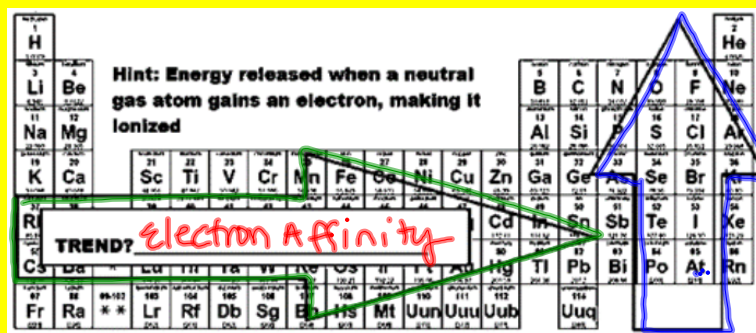
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- Half the distance between **2 nuclei of atoms whose outer shells touch.**
 - Increases going DOWN a group because **more electron shells makes the atom bigger.**
 - Increase RIGHT to LEFT across a period because **more valence electrons = more nuclear pull.**
- 2 identical*

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- Ability of an atom to **accept an electron**
- Increases LEFT to RIGHT across a period because **more valence electrons makes an atom more ready to accept an electron.**
- Increases going UP a group because **less electron shells means the nuclear charge is stronger.**

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Hint: Defined as the ability of an atom to lose an electron, forming a positive ion

TREND? **Metallic character**

- Metallic character is how ready an atom is to lose an electron.
- Increases RIGHT to LEFT across a period because less valence electrons = more willing to lose one.
- Increases going DOWN a group because bigger atoms have less nuclear pull on outer electrons.

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Hint: Energy required to remove an electron from outermost shell

TREND? **Ionization energy**

- Ionization energy is energy needed to remove an electron.
- Increases LEFT to RIGHT across a period because more valence electrons = more work to remove one.
- Increases going UP a group because smaller atoms have a stronger nuclear pull.

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Hint: Tendency of an atom to attract electrons

TREND? **Electronegativity**

- Electronegativity is ability of an atom to attract an electron.
- Increases LEFT to RIGHT across a period because more valence electrons = more attraction to another.
- Increases going UP a group because Smaller atom = stronger nuclear pull

Oct 18-10:31 AM

Periodic Trends

ATOMIC RADIUS

1. What trend in atomic radius do you see as you go down a group/family on the periodic table?
2. What causes this trend?
3. What trend in atomic radius do you see as you go across a period/row on the periodic table?
4. What causes this trend?
5. Circle the atom in each pair that has the largest atomic radius.
 - a) Al B b) S O c) Br Cl
 - d) Na Al e) O F f) Mg Ca
6. Put the following elements in order from smallest to largest atomic radius **and** explain why:
C, O, Sn, Sr.

Oct 18-10:32 AM

ELECTRONEGATIVITY

- 7. Define electronegativity
- 8. When is an ion formed? When is a polar bond formed?
- 9. What trend in electronegativity do you see as you go down a group/family on the periodic table?
- 10. What causes this trend?
- 11. What trend in electronegativity do you see as you go across a period/row on the periodic table?
- 12. What causes this trend?
- 13. Circle the atom in each pair that has the greater electronegativity.
a) Ca Ga b) Li O c) Cl S d) Br As e) Ba Sr f) O S

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GENERAL QUESTIONS

- 14. Which group tends to form +1 ions? _____
- 15. Which group tends to form +2 ions? _____
- 16. Which group tends to form -1 ions? _____
- 17. Which group tends not to form ions or react? _____
- 18. Based on the concept of periodic trends, answer the following questions for these atoms: **Li, Be, Mg, Na**. Be able to defend your answers.
 - a. Which element has the lowest electronegativity? _____
 - b. Which element has the least metallic character? _____
 - c. Which element is the largest atom? _____

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19. Based on the concept of periodic trends, answer the following questions for these atoms: **P, S, Cl, F**. Be prepared to defend your answers.

d. Which element has the highest electronegativity? _____

e. Which element has the least metallic character? _____

f. Which element has the largest ion? _____

20. Based on the concept of periodic trends, answer the following questions for these atoms: **Au, Zn, S, Si**. Be able to defend your answers.

a. Which element has the highest electronegativity? _____

b. Which element has the most metallic character? _____

c. Which element has the largest atom? _____

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