Chemistry Activity: Graphing Periodic Trends

Name: _____ Date: _____ Period: _____

Objective:

- to relate the periodic trends atomic radius, ionization energy, and electronegativity
- identify the trends moving across a period or down a group
- relate changes in the trends ionization energy and electronegativity to atomic radius

Procedure:

1. Use the information of your reference page to complete this activity.
2. Define each of these terms: atomic radius, first ionization energy, and electronegativity
3. Using colored pencils or pens, list under each element symbol the three periodic trends in this order: atomic radius, first ionization energy, and electronegativity. Use a different color for each property.
4. Observe the trends for each property as you go down the alkali metal group, and moving across period 3.
5. Complete each statement with the observed trend. (***increase or decrease***)
6. Write your conclusion. What is your reasoning for the observed trends. Can you relate the first ionization trends and the electronegativity trends to atomic radius? How can atomic radius affect these trends?

Definitions:

1. atomic radius

2. first ionization energy

3. electronegativity

H							
Li							
Na 166 496 0.9	**Mg**	**Al**	**Si**	**P**	**S**	**Cl**	**Ar**
K							
Rb							
Cs							

Across a period (→) atomic radius tends to _____.

Across a period (→) first ionization energy tends to _____.

Across a period (→) electronegativity tends to _____.

Down a Group (↓) atomic radius tends to _____.

Down a Group (↓) first ionization energy tends to _____.

Down a Group (↓) electronegativity tends to _____.

Conclusion: Use the back of this page to write your conclusion. Refer to the questions in number 6 above – under procedures.