**Trends on the Periodic Table**

**Part 1:** Use your periodic table you created in the class activity

1. As you move horizontally across a row (period) from left to right
   a. What happens to the size of the atoms?
   b. What happens to the reactivity of the atoms?

2. As you move vertically down a column (group) from top to bottom:
   a. What happens to the size of the atoms?
   b. What happens to the reactivity of the atoms?

3. In what 2 areas of the periodic table do you find the most highly reactive elements? Which elements are they?

4. Which atom is the largest in size and smallest in size on your periodic table?

5. For the following elements: rubidium (Rb), neon (Ne), silicon (Si), calcium (Ca)
   Identify: Most reactive________ Largest in size:________
   Least reactive________ Smallest in size:________

**Part 2:** Use your textbook to complete the following:

**Atomic Radii Size:**

1. Explain atomic radius:

2. Using the information in figure 5-13 (pg 141) in your book, write the atomic radii size for alkali metals & period #2 on the periodic table to your right.

3. What happens to atomic radii as you move down a column and across a row? On the arrows on the diagram, indicate the trend. (Options: Increases or Decreases?)

4. Of all the elements on the periodic table, identify & circle the largest & smallest in size.

5. Identify the element with the largest & smallest atomic radii:
   a) Be, Ba, Mg
   Largest= Smallest=
   b) Li, F, B
   Largest= Smallest=

6. How can you explain the trend:
   a. Across a period?
   b. Down a group?
Ionization Energy:
1. In simple terms, explain **ionization energy**.

2. Using the information in figure 5-15 (Pg 143) in your book, write the ionization energy for **alkali metals & period #2** on the periodic table to your right.

3. On the arrows on the diagram, indicate the trend for ionization energy as you move down a column and across a row. *(Options: Increases or Decreases?)*

4. Of all the elements on the periodic table, identify & circle the element with the highest & lowest ionization energy.

5. Identify the atom with the highest & lowest ionization energy:
   a) Be, Ba, Mg  
   b) Li, F, B
   
   Highest=  Lowest=  Highest=  Lowest=

6. Explain how the size of the atom affects ionization energy.

Electronegativity:
1. Explain **Electronegativity**.

2. Using the information in figure 5-20 (pg 151) in your book, write the electronegativity for the **Halogens** and **period #2** on the periodic table to your right.

3. On the arrows on the diagram, indicate the trend for electronegativity as you move down a column and across a row. *(Options: Increases or Decreases?)*

4. Of all the elements on the periodic table, identify & circle the element with the highest & lowest electronegativity.

5. Identify the most and the least electronegative element:
   a) Be, Ba, Mg  
   b) Li, F, B
   
   Most=  Least=  Most=  Least=

6. Explain how the size of the atom affects electronegativity.