

**DATA TABLE**

<b>Second Row Elements</b>	<b>Na</b>	<b>Mg</b>	<b>Al</b>	<b>Si</b>	<b>P</b>	<b>S</b>	<b>Cl</b>	<b>Ar</b>
Atomic Radius (in pm)								
Electron Configuration								
First Ionization Energy (kJ/mol)								
Electronegativity Value								
<b>First Column Elements</b>	<b>H</b>	<b>Li</b>	<b>Na</b>	<b>K</b>	<b>Rb</b>	<b>Cs</b>	<b>Fr</b>	
Atomic Radius							unknown	
Electron Configuration								
First Ionization Energy								
Electronegativity Value								

**Questions based on research:**

1. What trends are apparent in the second row elements? Explain any exceptions to the trend you observe.
  - a. In Atomic Radius
  - b. In Electron Configuration
  - c. In First Ionization Energy
  - d. In Electronegativity
  
2. What trends are apparent in the second row elements? Explain any exceptions to the trend you observe.
  - a. In Atomic Radius
  - b. In Electron Configuration
  - c. In First Ionization Energy
  - d. In Electronegativity

Additional questions on back.

3. Explain which element(s) of the fifteen examined is most likely to form a  $-1$  ion.
  4. Explain which element(s) of the fifteen examined is most likely to form a  $+1$  ion.
  5. Based on electronegativity values, which two elements would form the most ionic bond?
  6. Based on electronegativity values, which two elements would form the most covalent bond?
  7. What general statement can be made about the configurations of the first column of elements?
  8. What general statement can be made about the configurations of the second row of elements?
  9. Which element has the largest atomic radius? Which element one has the smallest atomic radius?
  10. Which element has the highest first ionization energy? Why is this true?
- What is your group's conclusion about the properties of an element and its placement on the periodic table?