

1. As you move from the left side of the table to the right the number of protons increases, as does the number of electrons. However, only the additional protons seem to have an effect on the periodic properties. Why don't the electrons seem to matter?
2. As you move from the top of the chart to the bottom in a single column the size of the orbitals plays a major part in the changes in the periodic properties, but the addition of protons and electrons does not seem to play a part. Why not?
3. Ionization potential increases to the right of the chart, as do electronegativity and electron affinity. However, the noble gases don't fit the trend for either electronegativity or for electron affinity. Why not? Why do they fit the trend for ionization potential?
4. Rank the elements of the second row (the one that starts with Li) in order of INCREASING 2nd ionization potential. Explain your order. Specifically, explain the general trend and any exceptions to that general scheme.
5. What happens to the electron affinity as you move from the top of the chart to the bottom and why?
6. Two of your friends are fighting. One claims that electron affinity decreases as you move across the chart from left to right, the other says that it gets larger. How could you, using your superior chemistry knowledge settle this dispute (making both of them feel good about their position) before it turns to bloodshed?
7. Rank the elements in the second row (the one that starts with Li) in order of INCREASING ionic radius. Explain the order being sure to discuss the general trend and any exceptions or other "unexpected" features.