**Warmup: Periodic Trends**

1. What is electron affinity?
2. What are the trends for EA? Explain
3. What does a high ionization energy mean?
4. What does a high electron affinity mean?
5. What are the trends for reactivity and explain?
6. Rank Si, Cl, Br by increasing EA and explain.

**Warmup: Periodic Trends**

1. What is electron affinity?

***EA is the energy released when an electron is added***

1. What are the trends for EA?

***EA decreases down a group because the atomic radius is increasing (more energy levels) and the valence shell is further from the nucleus 🡪 harder to attract in an electron (less energy released)***

***EA increases LtoR across a period because there are more protons in the nucleus (increasing nuclear charge) and the valence shell is closer to the nucleus 🡪 easier to attract in an electron (more energy released)***

1. What does a high ionization energy mean?

***Requires a lot of energy to remove an electron  
- Hard to do  
- Small AR***

1. What does a high electron affinity mean?

***A lot of energy is released when gaining an electron***

* ***Easy to do***
* ***Small AR***

1. What are the trends for reactivity and explain?

***Metals react more the larger they are – metals want to lose electrons and it is easier to lose electrons the further away they are from the nucleus (large AR)***

***Nonmetals react more the smaller they are – nonmetals want to gain electrons and it is easier to attract in an electron the closer the outer shell is to the nucleus (small AR)***

1. Rank Si, Cl, Br by increasing EA and explain.

***Cl, Si, Br (smallest to biggest AR)***

***Br, Si, Cl (smallest to biggest EA)***

***Br is the largest because it has an extra energy level so it will have the smallest EA because its valence shell is further from the nucleus 🡪 harder to attract in an electron (low EA)***

***Si is larger than Cl because it has less protons in the nucleus (smaller nuclear charge) and can’t attract in is electrons as well, therefore it is larger than Cl, it will release less energy when an electron is added since the valence shell is further away 🡪 harder to attract***