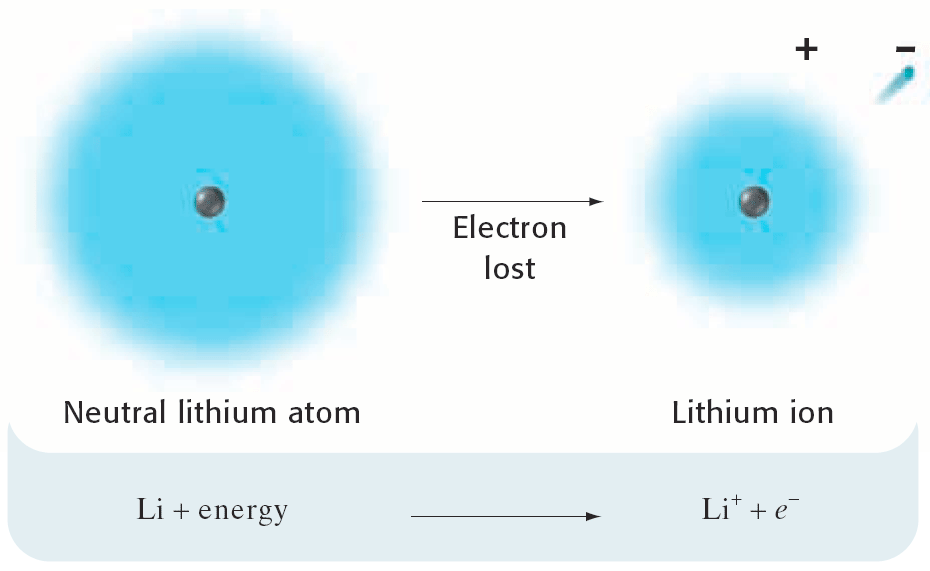
**4.3 Informational Text: Ionization Energy**

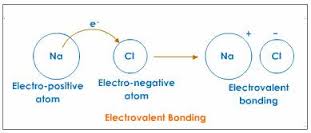
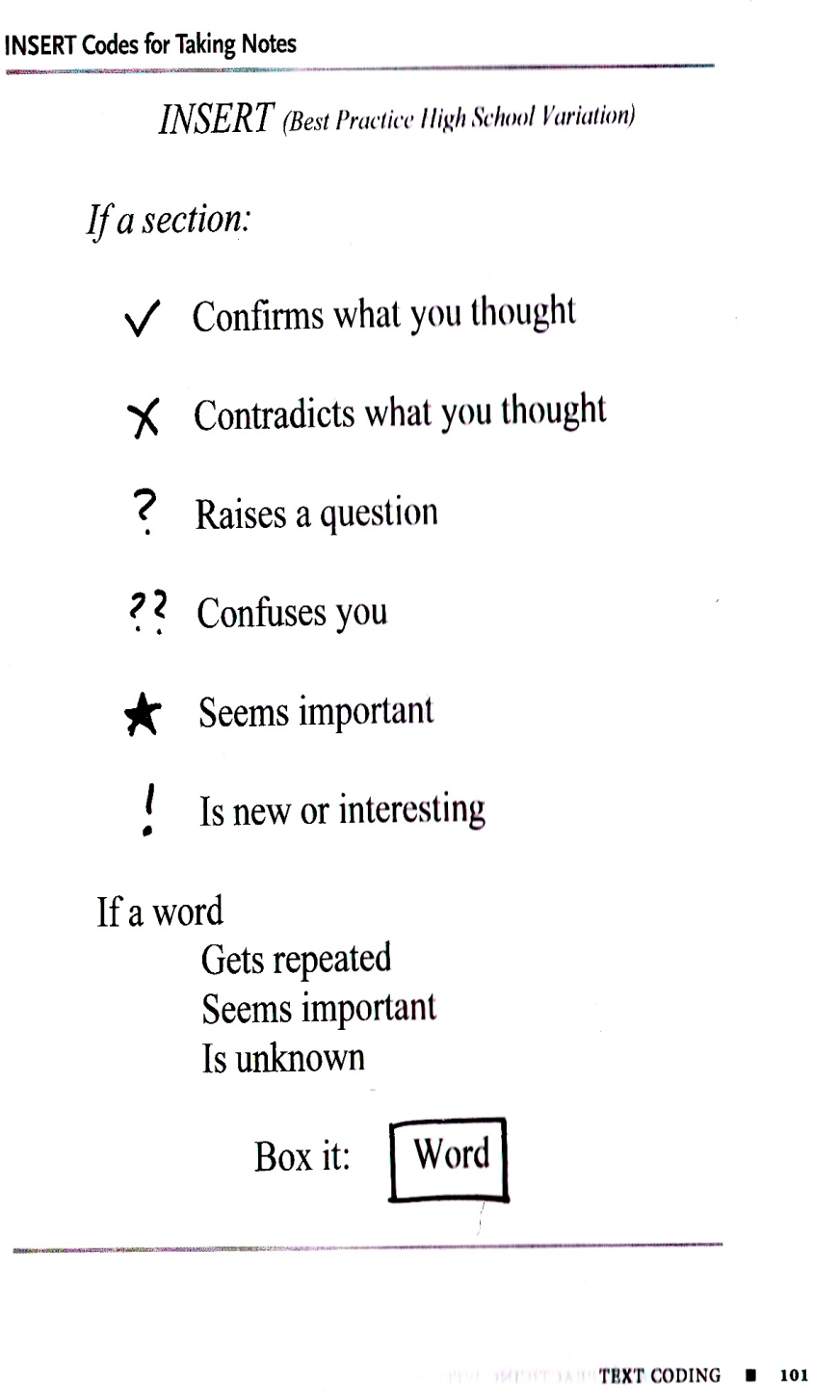
The [ionization energy](http://chemistry.about.com/od/chemistryglossary/a/ionizationenerg.htm) , or ionization potential, is the energy required to completely remove an electron from a gaseous atom or ion. The closer and more tightly bound an electron is to the nucleus, the more difficult it will be to remove, and the higher its ionization energy will be.

**Units for Ionization Energy**

Ionization energy is measured in electronvolts (eV) or kJ/mol.

**First vs Subsequent Ionization Energies**

The first ionization energy is the energy required to remove one electron from the parent atom. The second [ionization energy](http://chemistry.about.com/od/imagesclipartstructures/ig/Science-Clipart/Ionization-Energy-Graph.htm) is the energy required to remove a second valence electron from the univalent ion to form the divalent ion, and so on. Successive ionization energies increase. The second ionization energy is always greater than the first ionization energy.

**4.4 Informational Text: Electronegativity**

**Definition:** A property of an [atom](http://chemistry.about.com/od/chemistryglossary/a/atomdefinition.htm) which increases with its tendency to attract the [electrons](http://chemistry.about.com/od/chemistryglossary/a/electrondef.htm) of a [bond](http://chemistry.about.com/od/chemistryglossary/a/bondsdef.htm) .

[Electronegativity](http://chemistry.about.com/od/chemistryglossary/a/Electronegdef.htm) is a measure of an atom's ability to attract electrons to form [a chemical bond](http://chemistry.about.com/od/generalchemistry/ss/11th-Grade-Chemistry-Notes-And-Review_5.htm). [High electronegativity](http://chemistry.about.com/od/chemicalbonding/a/Electronegativity-And-Ionic-Bond-Example-Problem.htm) reflects a high capacity to [bond electrons](http://chemistry.about.com/od/chemicalbonding/a/chemicalbonds.htm), while low electronegativity indicates low ability to attract electrons. Electronegativity increases moving from the bottom lefthand corner [of the periodic table](http://chemistry.about.com/od/periodictables/ig/Periodic-Tables/Periodic-Table-of-the-Elements.-0EQ.htm) toward the upper righthand corner.

The [Pauling scale](http://chemwiki.ucdavis.edu/Physical_Chemistry/Physical_Properties_of_Matter/Atomic_and_Molecular_Properties/Electronegativity/Pauling_Electronegativity) is the most commonly used. Fluorine (the most electronegative element) is assigned a value of 4.0, and values range down to cesium and francium, which are the least electronegative at 0.7.

**Examples:**

The [chlorine](http://chemistry.about.com/od/elementfacts/a/chlorine.htm) [atom](http://chemistry.about.com/od/chemistryglossary/a/atomdefinition.htm) has a higher electronegativity than the [hydrogen](http://chemistry.about.com/od/elementfacts/a/hydrogen.htm) [atom](http://chemistry.about.com/od/chemistryglossary/a/atomdefinition.htm) , so the [bonding](http://chemistry.about.com/od/chemistryglossary/a/bondsdef.htm) [electrons](http://chemistry.about.com/od/chemistryglossary/a/electrondef.htm) will be closer to the Cl than to the H in the HCl [molecule](http://chemistry.about.com/od/chemistryglossary/g/moleculedef.htm) .