CONCEPT: ELECTRONEGATIVITY

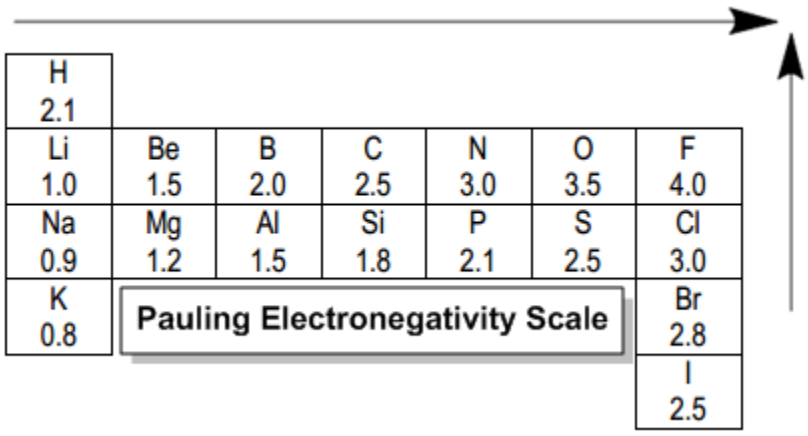
Chemical bonds are formed when the sharing of valance electrons between two or more atoms takes place.

- The _____ of sharing will determine the identity and strength of the chemical bond.
- An unequal sharing of electrons in one direction along a bond is called a _____ _____ (_____)

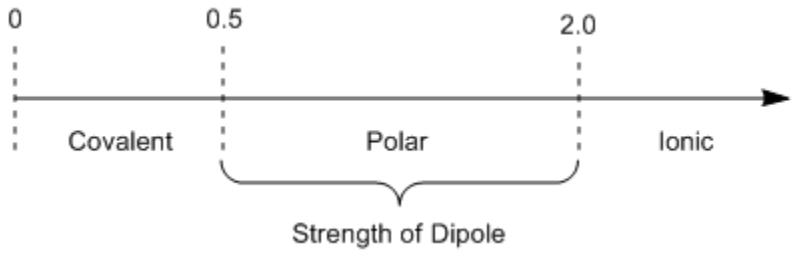
$$\mu = e \times d$$

(dipole moment = charge x distance)

- The charge between any two bonded atoms is related to their difference in electronegativity



Atomic Difference in Electronegativity

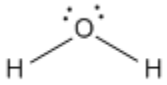


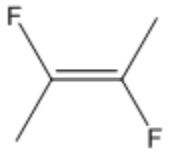
Generalizations:

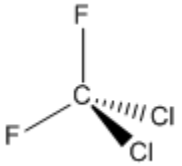
- Bonds to carbon and hydrogen are always _____
- Bonds between two identical atoms are always _____
  - □ Adjacent atoms on the periodic table are _____
  - □ Lone pairs are _____
- _____ _____ exist when atoms have asymmetrical dipoles

PRACTICE: Which of the following molecules contain dipoles? Which contain net dipoles?

a. 

b. 

c. 

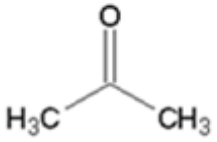
d. 

e. PBr_3

f. CO_2

PRACTICE: Which of the solvents below is apolar? Which is polar?

a. 

b. 

c. 

d. 

e.