Predicting Bond Type

Electronegativity (EN): An atom's ability to attract electrons in a chemical bond.

1. Increases across a period (more protons, more attraction)

2. Decreases down a group (more orbitals, less attraction)

The difference in electronegativities (ΔEN) can be used to determine the type of bond between 2 elements.

Ex. What type of bond would you get between?

1) S and O
2) Na and I
3) Br and Br
4) C and H

Polar bonds: unequal sharing of electrons between 2 atoms.

Ex HCl

$\Delta EN = Cl - H$
$= 3.16 - 2.20$
$= 0.96$

Polar compound: a molecule that has a partial positive and partial negative end (Dipole)

*Just because a molecule has polar bonds, doesn't mean it is a polar compound.
The 3-D shape of the molecule affects its polarity.

Ex 1. H_2O (Bent)

Ex 2. CO_2 (Linear)

Ex 3. CH_4 (Tetrahedron)

Ex 4. CH_3OH