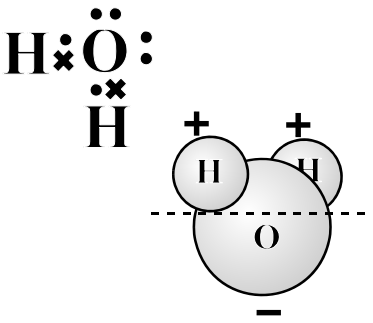
Chemistry: Form WS4.1.6A Name _____

BONDING Date _____ Period _____

Recognizing Polar Molecules

To determine if a compound is polar, you must consider the electronegativity difference within each bond and the three dimensional shape of the compound. If the electronegativity difference is greater than 1.7 or close to zero, the compound is not polar. Electronegativity differences above 1.7 are found in ionic compounds. Electronegativity differences around zero are found in molecules with nonpolar bonds. Electronegativity differences between 0.4 and 1.7 are found in molecules with polar bonds. These molecules can be polar or nonpolar depending on their shapes. Molecules with polar bonds distributed symmetrically are nonpolar. Asymmetrical molecules with polar bonds are polar. Water is polar. An imaginary line can be drawn through a water molecule separating the positive pole from the negative pole. This is because the charges are distributed asymmetrically. Carbon dioxide is nonpolar because the electronegative oxygens are distributed symmetrically around the carbon. (O=C=O)



Water is polar, because the charges are distributed asymmetrically. The electropositive hydrogens are attached to oxygen's two unpaired electrons..

Determine if each of the compounds listed below, IONIC, POLAR, or NONPOLAR as follows: [1] determine the types of bonds. [2] draw electron dot diagrams to determine the shape.

Compound	Type of Bond: IONIC, POLAR, or NONPOLAR	Electron Dot Diagram	Type of Compound: IONIC, POLAR, or NONPOLAR	Compound	Type of Bond: IONIC, POLAR, or NONPOLAR	Electron Dot Diagram	Type of Compound: IONIC, POLAR, or NONPOLAR
HCl				CCl_4			
CH_4				CH_3Cl			
Cl_2				N_2			
KBr				H_2S			
NH_3				NaBr			