

## VSEPR

- Valence Shell Electron Pair Repulsion
- Used to predict the shapes and polarities of molecules
- Molecular shapes are predicted based on the fact that electron pairs (bonding and nonbonding) arrange themselves to be as far apart as possible in order to minimize repulsions

## Polarity of Molecules

- Nonpolar bonds always produce a nonpolar molecule
- Polar bonds arranged symmetrically around the central atom, produce a nonpolar molecule
- Polar bonds arranged asymmetrically around the central atom, produce a polar molecule

## Summary of Shapes

- 1 bond = linear
- 2 bonds = linear (or linear triatomic)
- 2 bonds + 2 pair e- = bent (or angular)
- 3 bonds = trigonal planar
- 3 bonds + 1 pair e- = pyramidal (or trigonal pyramidal)
- 4 bonds = tetrahedral