



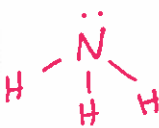
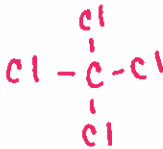
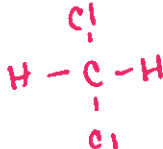
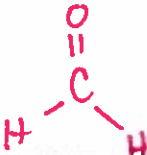
# Covalent Bonding

## Bond and Molecule Types

### Learning Target

Describe how electronegativity values determine the charge distribution in a polar molecule.

Evaluate the strengths of intermolecular attractions compared with the strengths of ionic and covalent bonds.

	Dot or Line Structure	Shape	E.N.D.	Polar or Nonpolar bonds?	Polar or Nonpolar molecule?	Intermolecular forces?
Br <sub>2</sub>	Br-Br	Linear	2.8-2.8 0	nonpolar bond	nonpolar	London Forces
ClF	Cl-F	Linear	3.0-4.0 1	Polar bonds	Polar	Dipole Forces
H <sub>2</sub> O (O is central atom)		Bent	3.5-2.1 1.4	Polar bonds	Polar	Hydrogen bonding
H <sub>2</sub> S (S is central atom)		Bent	2.5-2.1 0.4	nonpolar bonds	Polar	Dipole
NH <sub>3</sub> (N is central atom)		Trigonal Pyramid	3.0-2.1 0.9	polar bonds	Polar	Hydrogen
CCl <sub>4</sub> (C is central atom)		Tetrahedral	2.5-3.0 0.5	polar bonds	nonpolar	London Forces
CH <sub>2</sub> Cl <sub>2</sub> (C is central atom)		Tetrahedral	3.0-2.5 0.5 2.5-2.1 0.4	polar bonds non polar bonds	nonpolar	London Forces
CH <sub>2</sub> O (C is central atom)		Trigonal Planar	2.5-2.1 0.4 3.5-2.5 1	non polar polar	polar	Dipole Force.