1a. Describe each type of bonding: What type(s) of elements are involved, and what is happening with the electrons?
Ionic Bonding:

Covalent bonding:

b. All of the molecules and ions on this worksheet contain at least one _____ bond.

2a. Indicate how many valence electrons are in each (**unbonded**) atom

H_____ C_____ N_____ O_____ F_____ S_____ Si_____

b. Indicate the number of valence electrons each atom will have **once it is bonded:**

H_____ C_____ N_____ O_____ F_____ S_____ Si_____

(Note: Beryllium and Boron will typically bond to get 4 and 6 valence electrons, respectively…..)

3. Draw the Lewis Dot Structure for each molecule or ion. Write the total number of valence electrons next to each picture.

Cl_2 H_2O PO_4^{-3}

OF_2 SO_2 CO_2

SO_3^{-2} NO_3^{-1} CH_4 (methane)

F_2 O_2 N_2 H_2

SeO_2 CS_2 BrO_2^{-1}

PF_3 SeO_3 SO_4^{-2}

H_2S
(hydrosulfuric acid… or
the "rotten egg smell" compound.)

CF_3H
Carbon is the central atom;
attach the 3 Fluorines and the H to the carbon)

OCl^{-1}
(The OCl^{-1}/ClO^{-1} ion is called "hypochlorite ion,"
and is the active ingredient in bleach.
It is also sometimes an ingredient in drain cleaner.)

HOCl
(hypchlorous acid.
The O is the central atom.)

NO_2^{-1} NBr_3 TeO_3 NH_3

Br_2 NH_4^{+1} HCN (C is the central atom)

CH_2Br_2
(put C in the center and
attach everything else to the C)

SiO_3^{-2} HF

COH_2
(put C in the center and
attach the other 3 atoms to the C)

CO NO_2^{+1}