NAME: _____ **Lewis Dot Structures Activity 1**

Lewis Dot Structures (Electron Dot Structures)

Lewis Dot Structures are a tool for representing the arrangement of valence electrons around atoms in chemical substances. We are going to use Lewis dot structures to understand the difference between covalent bonds and ionic bonds. First let us make Lewis Dot Structures for common atoms and ions:

a. H	b. Li
c. H^{1+}	d. Li^{1+}
e. Cl	f. Cl^{1-}
g. O^{2-}	h. Ne

NAME: _____ **Lewis Dot Structures Activity 2**

Lewis Dot Structures for Substances Containing Ionic Bonds: For each of the hypothetical chemical reactions below please draw Lewis Dot Structure for each of the participants.

Li	+	F	→	Li^{1+}	+	F^{1-}	
Na	+	Cl	→	Na^{1+}	+	Cl^{1-}	
Ca	+	S	→	Ca^{2+}	+	S^{2-}	
2 K	+	O	→	2 K^{1+}	+	O^{2-}	
Al	+	P	→	Al^{3+}	+	P^{3-}	

NAME: _____ **Lewis Dot Structures Activity 3**

Guidelines for Drawing Lewis Dot Structures for Molecules:

1. The octet rule[1] says that atoms "try" to have 8 valence electrons by sharing or transferring electrons to form compounds. Hydrogen only has 2 electrons in its "octet".
2. Put the atom which can share the most electrons in the middle.
3. Some atoms can share two or three pairs of electrons (usually it is either C, N, or O)
4. put the hydrogen atoms on last
5. hydrogen NEVER shares two pairs of electrons.
6. fluorine NEVER shares two pairs of electrons.
7. fluorine ALWAYS obeys the octet rule.
8. Any structure which obeys the octet rule (and makes chemical sense) is more 'correct' than any structure that violates the octet rule.

i. HF	j. H_2O
k. CH_4	l. PH_3
m. BeF_2	n. N_2

1 There are a couple exceptions to the octet rule: Atoms from groups 1, 2, and 3 usually can not form enough bonds to have an octet. Atoms from groups 15, 15, and 17 can have more than on octet when attached to a large number of atoms.

NAME: _____ **Lewis Dot Structures Activity 4**

o. OH^{1-}	p. H_3O^{1+}
q. C_2H_6	r. NH_4^{1+}
s. C_2F_2	t. NH_3
u. NO_3^{1-}	v. O_2