Name:
Earth Sci L2

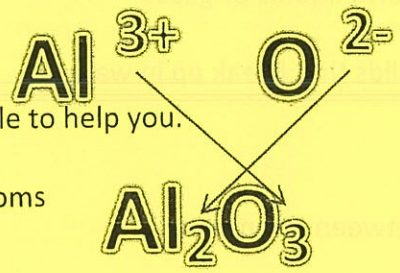
Date:
Mrs. Nork

I. Making Compounds (criss cross method).

Al^{3+} O^{2-}

1. Fill in the blanks to complete the paragraph on **oxidation number**:

Oxidation number is the number of _____ an atom loses or _____ when forming bonds. A positive "+" number means the atoms _____ electrons, while a negative "-" number means the atoms _____ electrons. Metals tend to have _____ oxidation numbers because they _____ electrons. Nonmetals tend to have _____ oxidation numbers because they usually _____ electrons.



2. Use the "criss cross" method to form compounds. Use the example to help you.

Remember the charges must cancel each other out! 2 Aluminum atoms bond with 3 Oxygen atoms to form neutral Aluminum Oxide.

y these! Remember to treat polyatomic ions (like SO_4, CO_3, etc.) as one unit separated by ( )s.

Na and Cl		Al and Br		Li and S		B and O		Mg and P	
Ion Na^{1+}	Ion O^{2-}	Ion Al^{3+}	Ion Br^{1-}	Ion Li^{1+}	Ion S^{2-}	Ion B^{3+}	Ion O^{2-}	Ion Mg^{2+}	Ion P^{3-}
Compound		Compound		Compound		Compound		Compound	

K and CO_3		Al and SO_4		Fe and NO_3		Zn and OH		NH_4 and PO_4	
Ion K^{1+}	Ion CO_3^{2-}	Ion Al^{3+}	Ion SO_4^{2-}	Ion Fe^{3+}	Ion NO_3^{1-}	Ion Zn^{2+}	Ion OH^{1-}	Ion NH_4^{1+}	Ion PO_4^{3-}
Compound		Compound		Compound		Compound		Compound	

II. Ionic and Covalent Bonds.

1. Fill in the blanks to complete the paragraph on ionic and covalent bonding.

onic bonds form between _____ and nonmetals. The metal transfers its extra _____ o the nonmetal. An example would be _____. Covalent bonds are formed between _____ which share pairs of _____. An example of this would be _____.

Name:
Earth Sci L2

Date:
Mrs. Nork

2. State whether the following compounds are ionic or covalent:

NaF _____ CO_2 _____

$CaCO_3$ _____ H_2O _____

NH_3 _____ C_3H_8 _____

$MgSO_4$_____ HCl (careful!) _____

3. Match the properties of ionic and covalent compounds.

_____1. usually form liquids or gases

_____2. forms solids that break up in water

_____3. CO2

_____4. forms between nonmetals

_____5. involves a sharing of electron pairs between atoms

_____6. usually form liquids or gases

_____7. Form when metals transfer electrons to nonmetals

a. ionic

b. covalent

4. Identify the following as either **ionic or covalent** and show the dot diagrams for each.

Cl_2 Ionic or Covalent?	MgI_2 Ionic or Covalent?
$CaCl_2$ Ionic or Covalent?	CO Ionic or Covalent?
CO_2 Ionic or Covalent?	Na_2O Ionic or Covalent?