

Name: _____
 Period: _____

Naming and Covalent Compounds

Ion Notation

Find from number of protons \rightarrow **Na** ¹⁺ \leftarrow Find from p-e=charge OR
 Number of electrons: (+) lost or (-) gained.
 Tells you: sodium (11 protons) and
 1 electron lost (+), so only 10 electrons.

How many protons and electrons does S ²⁻ have?	How many electrons does K ¹⁺ have?	Give the ion notation for Calcium that lost 2 electrons.
Give the ion notation for an atom with 8 protons and 10 electrons.	Fe ³⁺ : did it gain or lose electrons and how many?	Give the ion notation for an atom with 34 protons and 36 electrons.

Making Ionic Compounds

Way 1

1 Li¹⁺ O²⁻ Write the chemical symbols with the oxidation numbers.

2 Li₂¹⁺ O₁²⁻ Cross the numbers not the signs.

3 Li₂O Reduce numbers or drop ones and put the symbols together.

You know it is a balanced compound because 2(1) + 1(-2) = 0. Balanced ionic compounds have a neutral charge.

Way 2

1. Mg²⁺ Cl¹⁻ Write the chemical symbols with the oxidation numbers.

2. Mg²⁺ Cl¹⁻ Cl¹⁻ Add enough ions together so that the charges equal zero.

3. MgCl₂ Add up the ions and write the compound as a formula.

Again, you know it is a balanced compound because 1(2) + 2(-1) = 0. Balanced ionic compounds have a neutral charge.

Make the ionic compound of magnesium oxide.	Make lithium chloride.	Combine Fe(II) and O.
Combine Iron(III) and Fluorine.	Combine sodium and carbonate (CO ₃) ²⁻ .	Make potassium sulfate (SO ₄) ²⁻ .

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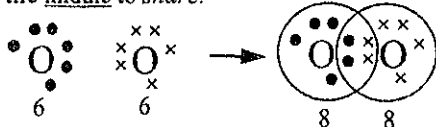
Period: _____

Covalent Bonding

You must fulfill two criteria when making covalent bonds:

- 1) the individual atoms must have the proper number of valence electrons;
- 2) when bonded each atom must have 8 electrons through sharing.

Put the number you need in the middle to share.



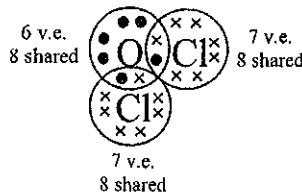
Each has 6 valence electrons by itself and 8 by sharing.

Read each oxygen as 6 v.e. plus 2 for the 2 bonds = 8!

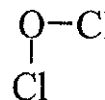


A double covalent bond.

Oxygen dichloride: OCl_2



Short hand



Make F_2 .	Make S_2 .	Make N_2 .
Make oxygen difluoride: OF_2	Make carbon dioxide: CO_2	Make methane: CH_4 .

Naming Compounds

Ionic compounds
(metals and non-metals):

Name the metal and non-metal and change the ending to "-ide".

BeO : Beryllium oxide

MgCl_2 : Magnesium chloride.

Covalent compounds
(2 non-metals):

Use the prefixes to show how many atoms are there.

CO : Carbon monoxide

CO_2 : Carbon dioxide.

Polyatomic compounds
(3 or more elements):

Use the names on the polyatomic ion chart.

$\text{Al}(\text{PO}_4)$: Aluminum phosphate

$\text{Be}(\text{CrO}_4)$: Beryllium chromate.

1. NF_3 _____

6. CS_2 _____

2. FeO _____

7. Ca_3P_2 _____

3. Na_2SO_3 _____

8. NaCl _____

4. LiBr_2 _____

9. LiOH _____

5. O_2Cl_4 _____

10. N_2F_3 _____