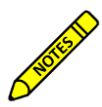


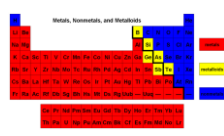
# Ionic vs Covalent Bonds, Formulas, and Names

Name \_\_\_\_\_

**Instructions:** Use the Ionic and Covalent Bonds Video at [www.crscl.org](http://www.crscl.org) to help complete the guide below!



0:59-1:04  
 -The BULK of the elements on the periodic table are \_\_\_\_\_  
 -Metals are found on the \_\_\_\_\_ of the \_\_\_\_\_ line

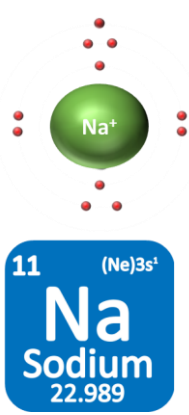


1) Which one is a **METAL**? A **gold jewelry ring** or an **ordinary rock** outside of your home?  
 Explain WHY you chose your answer.



\_\_\_\_\_

\_\_\_\_\_



1:29 – 1:41 **List the properties of METALS**

- \_\_\_\_\_ (\_\_\_\_\_ and reflect light)
- \_\_\_\_\_ (bendy)
- \_\_\_\_\_ at room temperature
- \_\_\_\_\_ & \_\_\_\_\_ points
- \_\_\_\_\_ (can be bent into sheets & wires)

2) Most **NONMETALS** are found either ON the stairstep line or to the \_\_\_\_\_ of the stairstep line (Except \_\_\_\_\_).



1:49 – 1:55 **List the properties of NONMETALS**

- \_\_\_\_\_ & brittle
- Solids \_\_\_\_\_ & \_\_\_\_\_ at room temp
- \_\_\_\_\_ melting and boiling points



3) Why is table salt **NOT** a metal or a nonmetal?

\_\_\_\_\_

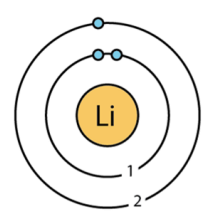
\_\_\_\_\_



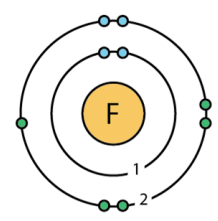
2:40 – 2:55 **Atoms desire**  
 \_\_\_\_\_!

-Atoms prefer to have their \_\_\_\_\_ (outermost) shell \_\_\_\_\_

-Usually with \_\_\_\_\_ electrons (not all atoms)



4) How many VALENCE electrons does LITHIUM have? \_\_\_\_\_



6) How many VALENCE electrons does FLUORINE have? \_\_\_\_\_

5) Would it be easier to lose 1 or gain 7 electrons to become stable?

7) Would it be easier for FLUORINE to GAIN 1 electrons or lose 7?



3:41 – 4:16

**METALS** tend to \_\_\_\_\_ electrons to become \_\_\_\_\_ (+) charged \_\_\_\_\_

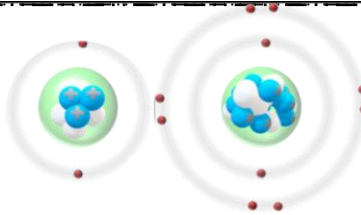
**NONMETALS** tend to \_\_\_\_\_ electrons to become \_\_\_\_\_ (-) charged \_\_\_\_\_

## IONIC BONDS (METAL + NONMETAL)

The \_\_\_\_\_ created between **OPPOSITELY** charged \_\_\_\_\_ when atoms \_\_\_\_\_ or \_\_\_\_\_ electrons

8) Using the # of Protons & electrons to the right, is **LITHIUM** **POSITIVELY CHARGED** or **NEGATIVELY CHARGED**? Why?

**LITHIUM**  
**P: 3**  
**E: 2**



**FLUORINE**  
**P: 9**  
**E: 10**

9) Using the # of Protons & electrons to the left, is **FLUORINE** **POSITIVELY CHARGED** or **NEGATIVELY CHARGED**? Why?

10) Using the **TOTAL** number of Protons & electrons, is the **COMPOUND LITHIUM FLUORIDE** **POSITIVELY CHARGED** or **NEGATIVELY CHARGED**? Why?

11) Carbon and Oxygen would form an Ionic Bond.

**TRUE FALSE**

EXPLAIN your answer

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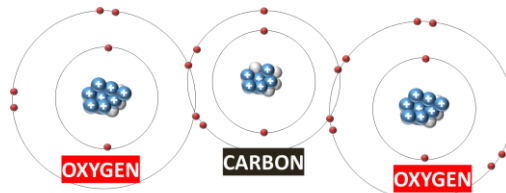
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5:20-5:35

## COVALENT BONDS (NONMETAL + NONMETAL)

When \_\_\_\_\_ or more **NONMETALS** \_\_\_\_\_ electrons



12) Which of the following element pairs would most likely form covalent bonds?

- A. Magnesium & Oxygen
- B. Beryllium & Fluorine
- C. Carbon & Hydrogen
- D. Lithium & Chlorine

EXPLAIN why you chose your answer

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6:20-6:35

# IUPAC NOMENCLATURE

IUPAC stands for the INTERNATIONAL UNION of \_\_\_\_\_ and APPLIED \_\_\_\_\_

-This governing body developed the SYSTEM the world abides by to name chemical compounds & molecules!

## Naming COVALENT MOLECULES from FORMULAS

- 1) Write both names given in the formula
- 2) Count the number of \_\_\_\_\_
- 3) Assign \_\_\_\_\_
- 4) Change the ending of the \_\_\_\_\_ atom to -ide

•The second atom will \_\_\_\_\_  
have a prefix

•The first atom will only have a prefix if its  
number is \_\_\_\_\_ than one

| prefix        | number of atoms |
|---------------|-----------------|
| <i>mono-</i>  | 1               |
| <i>di-</i>    | 2               |
| <i>tri-</i>   | 3               |
| <i>tetra-</i> | 4               |
| <i>penta-</i> | 5               |
| <i>hexa-</i>  | 6               |
| <i>hepta-</i> | 7               |
| <i>octa-</i>  | 8               |
| <i>nona-</i>  | 9               |
| <i>deca-</i>  | 10              |

CHEMICAL FORMULA

H 2 O

SUBSCRIPT

What is the CHEMICAL NAME of this molecule?

13) NAME the following COVALENT formulas...

CO<sub>2</sub> \_\_\_\_\_

N<sub>3</sub>S<sub>4</sub> \_\_\_\_\_

CO \_\_\_\_\_

P<sub>5</sub>N<sub>6</sub> \_\_\_\_\_

## Naming IONIC COMPOUNDS from FORMULAS

14) Why is Sodium Monochloride the INCORRECT to name NaCl?

15) Which rule from naming covalent molecules ALSO applies to naming IONIC compounds?

- a. Count the number of atoms
- b. Assign prefixes
- c. The second atom will ALWAYS have a prefix
- d. Change the ending of the 2<sup>nd</sup> atom to -ide

16) NAME the following IONIC formulas...

MgO \_\_\_\_\_

LiF \_\_\_\_\_

Be<sub>3</sub>P \_\_\_\_\_

Ca<sub>3</sub>S<sub>2</sub> \_\_\_\_\_

