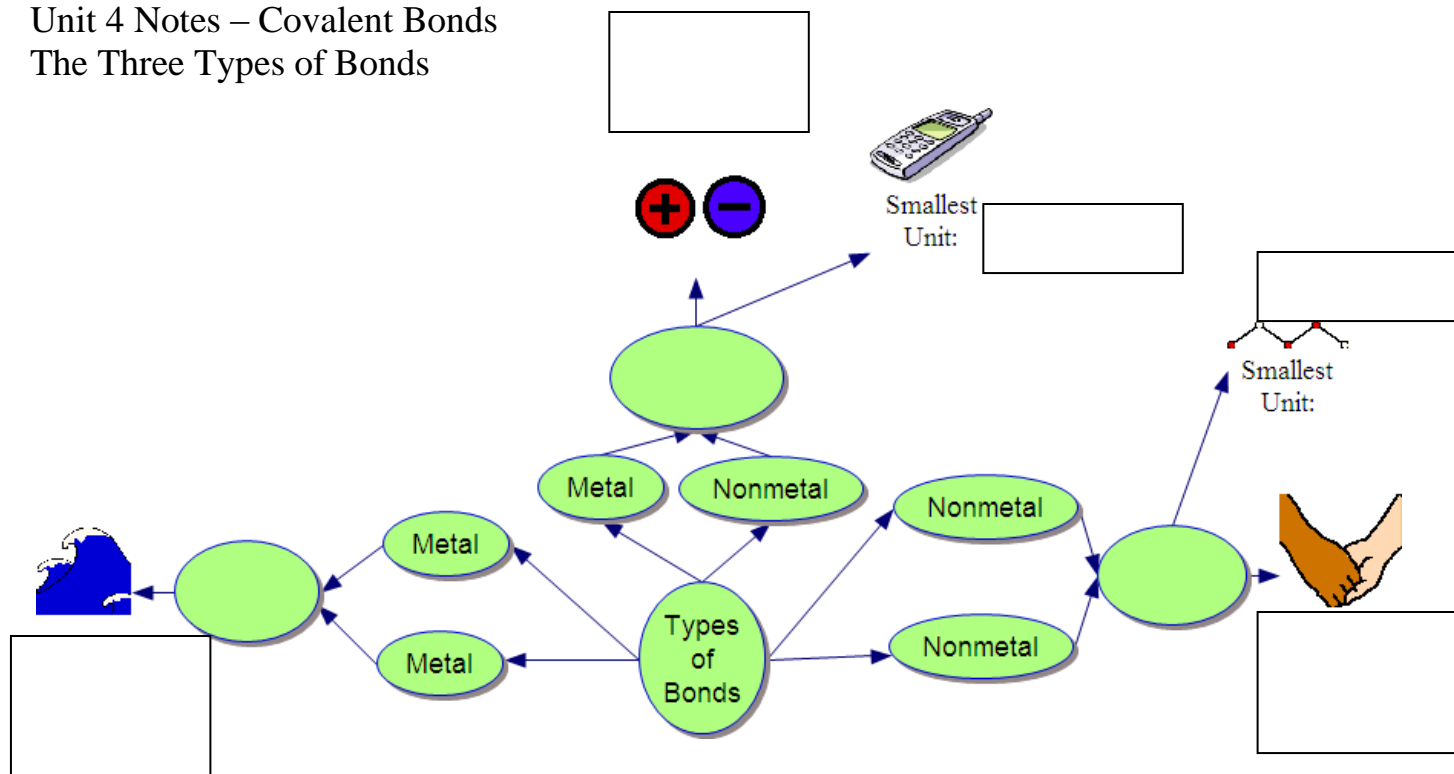


Unit 4 Notes – Covalent Bonds  
The Three Types of Bonds



Electronegativities and bond types

- Another way to usually tell whether a bond is ionic or covalent is with \_\_\_\_\_.
- \_\_\_\_\_ (Page 194) – the tendency of an atom to gain electrons in a chemical bond.
- If the difference between the \_\_\_\_\_ is large, the bond tends to be \_\_\_\_\_. If it is small, it tends to be \_\_\_\_\_.
- Compounds can have \_\_\_\_\_, but usually show one type more than the other chemically (usually \_\_\_\_\_).

**Types of Covalent Compounds**

1. **Diatomic molecules** (twins): \_\_\_\_\_

There are \_\_\_\_\_ diatomic molecules

NEVER FOUND AS SINGLE ATOMS IF “ALONE”

Their names are just the name of the \_\_\_\_\_

2. **Binary Molecular Compounds** - \_\_\_\_\_ (no metals or ions)

i.e. Does not start with an \_\_\_\_\_

Steps to name compounds

- a. \_\_\_\_\_ - use entire name
- b. \_\_\_\_\_ - change ending to -ide
- c. Prefixes used to indicate \_\_\_\_\_ of atoms of each p. 832

Only time that no prefix is used is if the first is a \_\_\_\_\_

Examples:

3. **Acids** – always begin with \_\_\_\_\_  
Two Types: \_\_\_\_\_ and \_\_\_\_\_

Remember: The number of hydrogen atoms in the acid equals the charge of the anion

**Binary Acids** - \_\_\_\_\_ but no \_\_\_\_\_

Steps to name compounds

- a. Use prefix - \_\_\_\_\_
  - b. Root of second element plus suffix - \_\_\_\_\_ followed by the word acid
- Example:

**Oxyacids** – has a \_\_\_\_\_ so most have \_\_\_\_\_

Steps to name compounds

- a. Identify anion p. 178
- b. Use root of anion, change suffix ending and word acid
  - a. Suffix rules: ends in ate → change to \_\_\_\_\_
  - ends in ite → change to \_\_\_\_\_

Example:

4. **Hydrocarbons** – a compound containing \_\_\_\_\_ and \_\_\_\_\_  
 \* Named using prefixes that correspond to the number of \_\_\_\_\_ in the compound.

1 - \_\_\_\_\_ 3 - \_\_\_\_\_  
 2 - \_\_\_\_\_ 4 - \_\_\_\_\_

\* After this it used the “normal” prefixes

\* Ending refers to the type of \_\_\_\_\_ found in the compound.

- ☆ • \_\_\_\_\_ - \_\_\_\_\_ - simplest hydrocarbon - only has \_\_\_\_\_ bonded carbons with hydrogens (\_\_\_\_\_).
- \_\_\_\_\_ - \_\_\_\_\_ - has a \_\_\_\_\_ bonded carbon in the formula
- \_\_\_\_\_ - \_\_\_\_\_ - has a \_\_\_\_\_ bonded carbon in the formula



Class	Functional Group	Effect on Name
		Changes end to _____
		Changes end to _____
		Changes end to _____ (or starts with _____)
		Changes end to _____
		Divides compound in two parts, side without O is named as functional group, side with O will end with _____
		Divides compound in two parts, name both halves as a functional group and add _____ to the end
		Changes end to _____

Practice:

Formula	Type of Covalent Bond	Name
PCl <sub>5</sub>		
HI		
N <sub>2</sub>		
C <sub>2</sub> H <sub>6</sub>		
H <sub>3</sub> PO <sub>4</sub>		
HClO <sub>2</sub>		
N <sub>2</sub> H <sub>4</sub>		