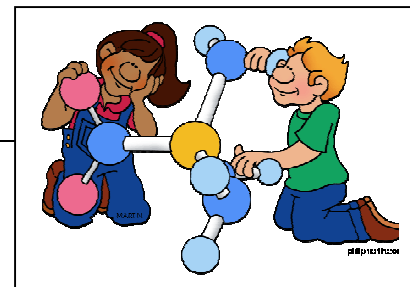


Week 8 – SCIENCE NOTE PAGE

Molecules and Compounds



REVIEW:

- **Atoms** – fundamental building block of matter
- **Elements** – made up of only ONE type of atom

Molecules

- **Molecule:** A molecule forms when two or more atoms join together to form a **chemical _____**.
 - **Chemical bonds** form when atoms share or exchange _____ to complete each other's outer shell of electrons.
- You can have **molecules of an element** (for example: H₂ or O₂) and *compounds are always molecules*.

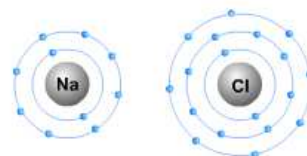
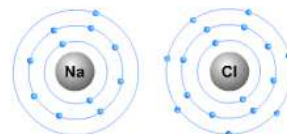
Compounds

- **Compound:** a substance containing atoms of _____ or more different **elements**
- Compounds have **different properties** (behave differently) than the elements that make them up.
 - **Example:** Brown **RUST** (Fe₂O₃) is a _____ resulting from the **chemical bonding** of the iron nail (Fe, a black metal) and oxygen (O₂, a clear gas).
- Compounds are always molecules because a compound has to have at least two atoms.
- **Chemical formulas** are how compounds are represented using element symbols (Fe₂O₃).



Electrons Can Be Shared or Exchanged

- **Chemical bonds** form when atoms **share** or **exchange** electrons to complete outer shells.
- Most elements **WANT** to have a _____ **outer shell**; usually 8 electrons in the outer shell.
- **Example:** Reaction between Sodium and Chlorine
 1. Sodium has 1 electron in its outer shell, while Chlorine has 7
 2. Sodium **gives up its one outer electron** and becomes “stable” with a “new” outer shell of 8 electrons
 3. Chlorine **GAINS the electron** given up by Sodium, and it too becomes “stable” with 8 electrons in its outer shell
 4. This exchange creates charged atoms or _____:
 - Sodium now has a **positive** charge = Na⁺
 - Chlorine now has a **negative** charge = Cl⁻
 5. This creates a bond of the **compound NaCl** –also known as salt.



PRACTICE: Put a check mark in the correct column(s) for each example.

	Atom	Element	Molecule	Compound	Ion
Fe					
H ₂					
Na ⁺					
Cl ⁻					
NaCl					
Fe ₂ O ₃					