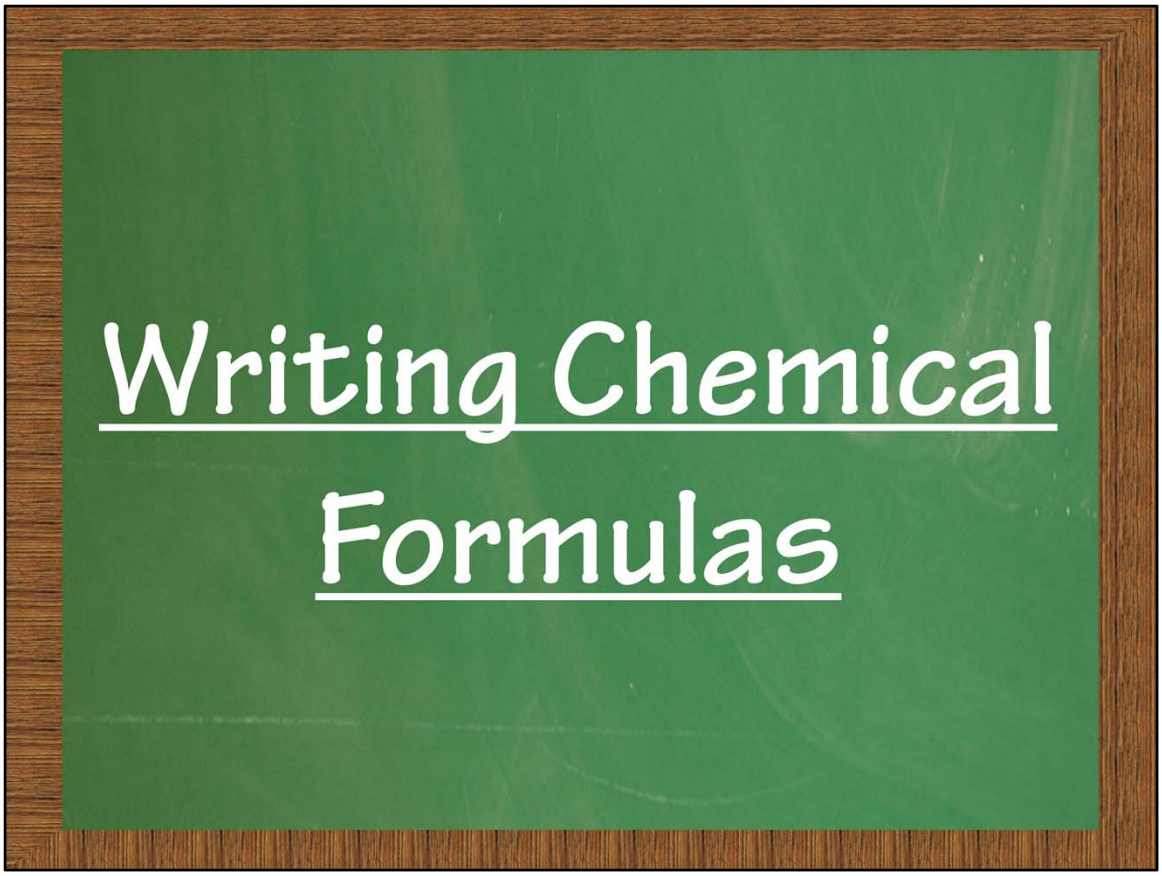
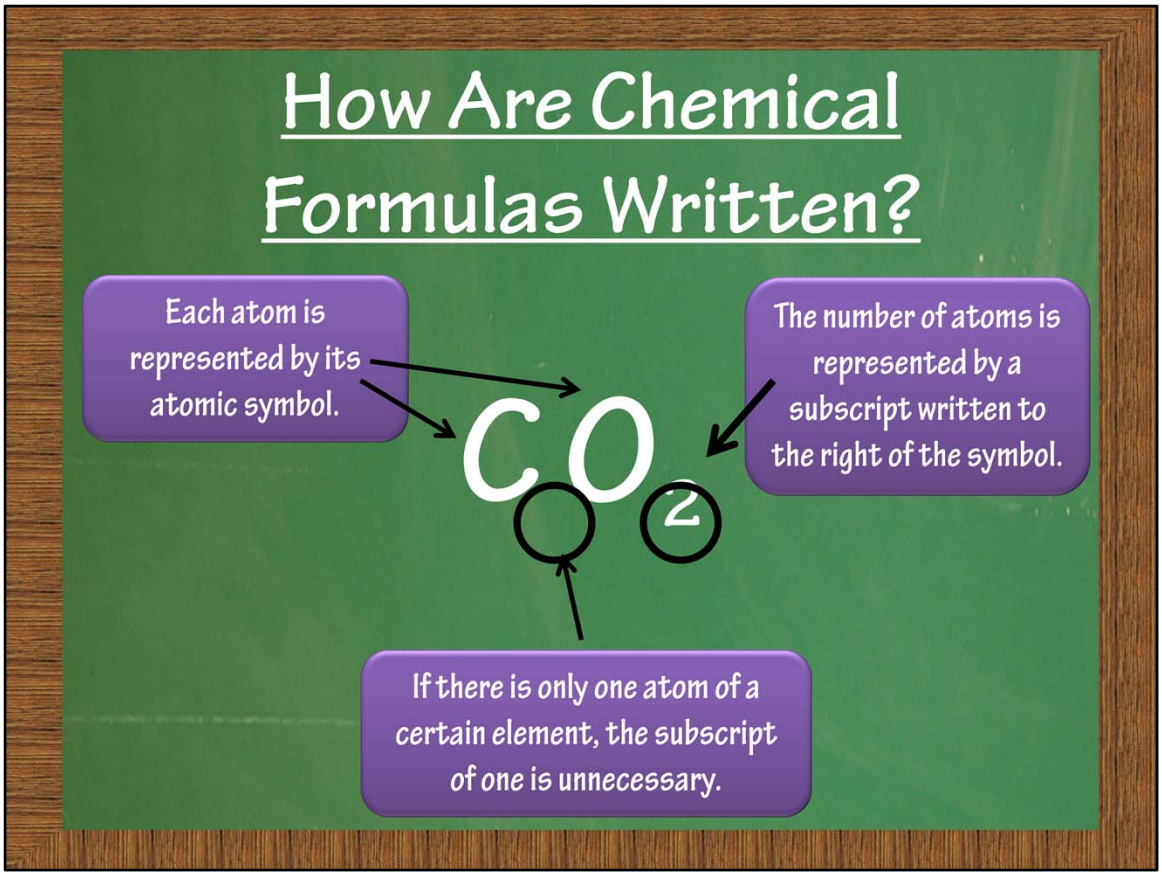
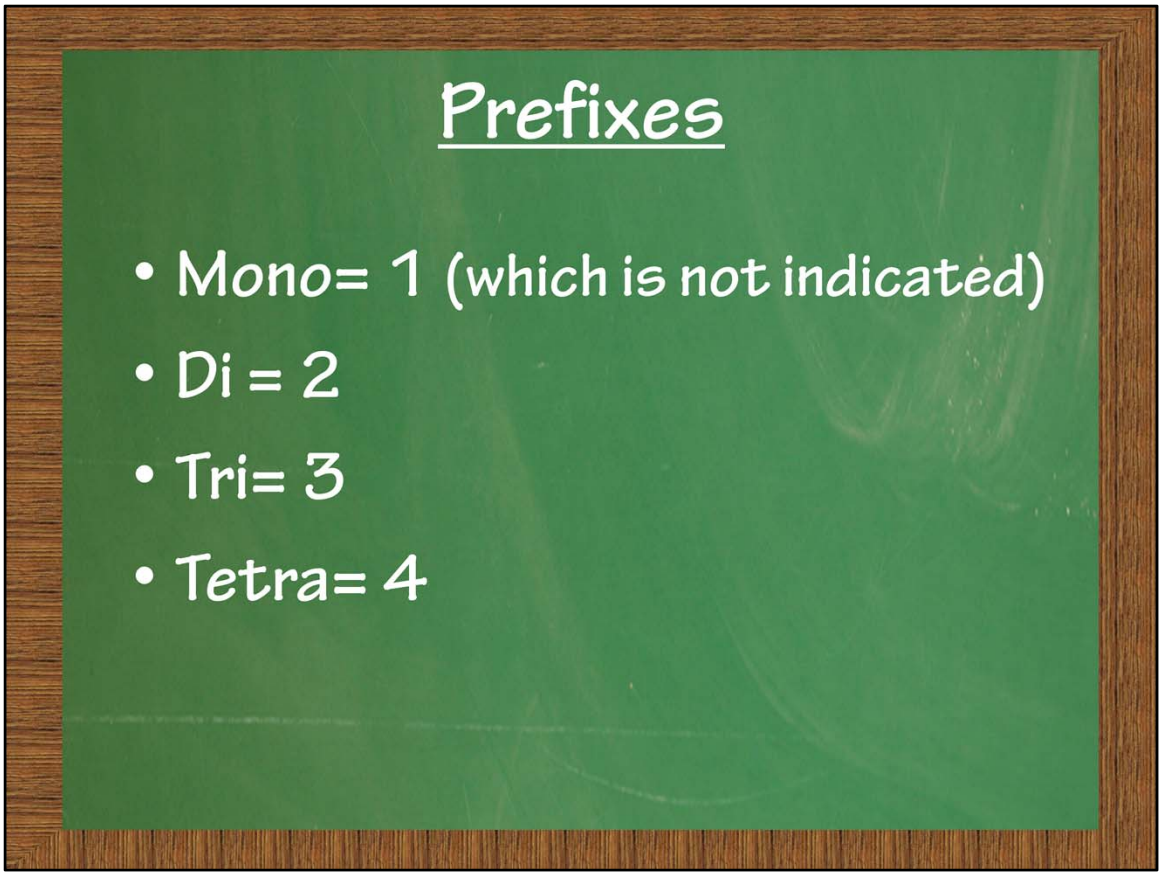
Module 2: Atomic Structure and the History of Atomic Theory
Topic 1 Content: Writing Chemical Formulas



Chemical formulas are written to represent compounds created by two or more elements. The International Union of Pure and Applied Chemistry, or "I" "U" "P" "A" "C" system, is used for naming compounds. Writing equations is very easy once you learn a few simple rules.

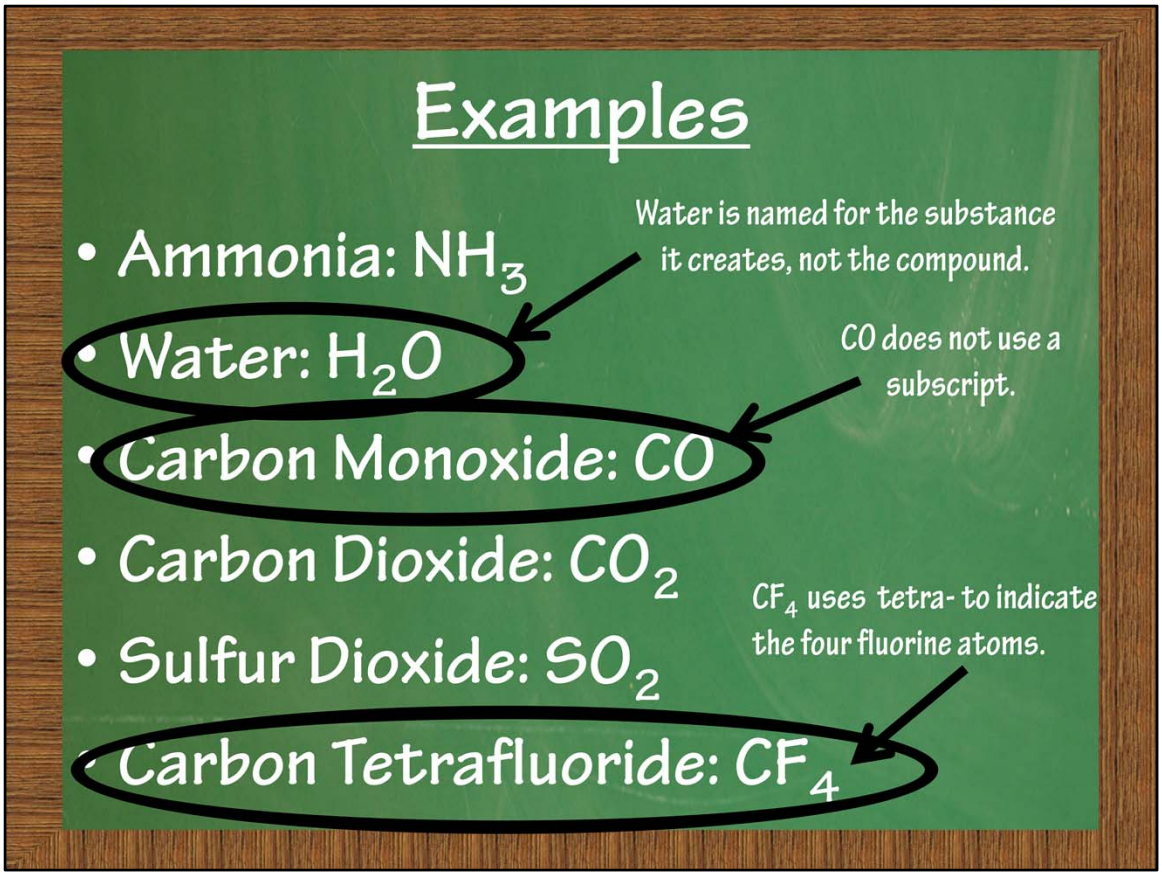


When writing chemical formulas, there are three important things to remember. First, each atom is represented by its atomic symbol. In the example formula shown here for carbon dioxide, the "C" represents carbon and the "O" represents oxygen. Next, the number of atoms for each element in the compound is represented by a subscript written to the right of the symbol. In this example, the number two is shown to represent the two oxygen atoms. Finally, if there is only one atom of a certain element, the subscript of one is unnecessary. In this compound, there is only one carbon atom for every two oxygen atoms, so there is no number written in the subscript next to the atomic symbol for carbon.



When compounds are named, they can be named according to the substance that they create, or based on the composition of the compound. Here are some common prefixes that might help you figure out the composition of a compound.

- Mono means one, which is not indicated with a subscript number.
- Di means two.
- Tri means three.
- Tetra means four.



Shown here are the chemical formulas and some interesting facts for some common substances, like ammonia, water, carbon monoxide, carbon dioxide, sulfur dioxide, and carbon tetrafluoride.