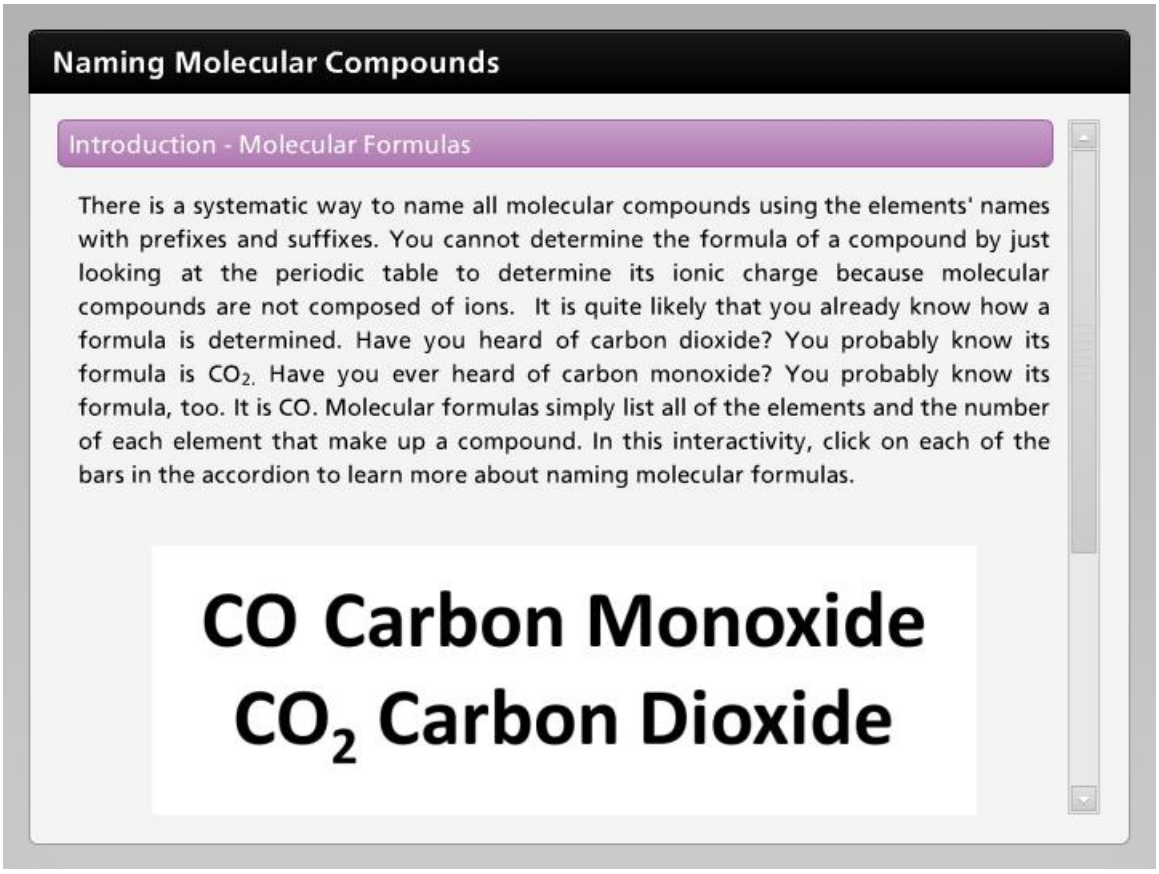
Module 4: Bonding, Formula Writing, and Nomenclature
Topic 5 Content: Naming Molecular Compounds Notes

Introduction - Molecular Formulas



There is a systematic way to name all molecular compounds using the elements' names with prefixes and suffixes. You cannot determine the formula of a compound by just looking at the periodic table to determine its ionic charge because molecular compounds are not composed of ions. It is quite likely that you already know how a formula is determined. Have you heard of carbon dioxide? You probably know its formula is CO_2. Have you ever heard of carbon monoxide? You probably know its formula, too. It is CO. Molecular formulas simply list all of the elements and the number of each element that make up a compound. In this interactivity, click on each of the bars in the accordion to learn more about naming molecular formulas.

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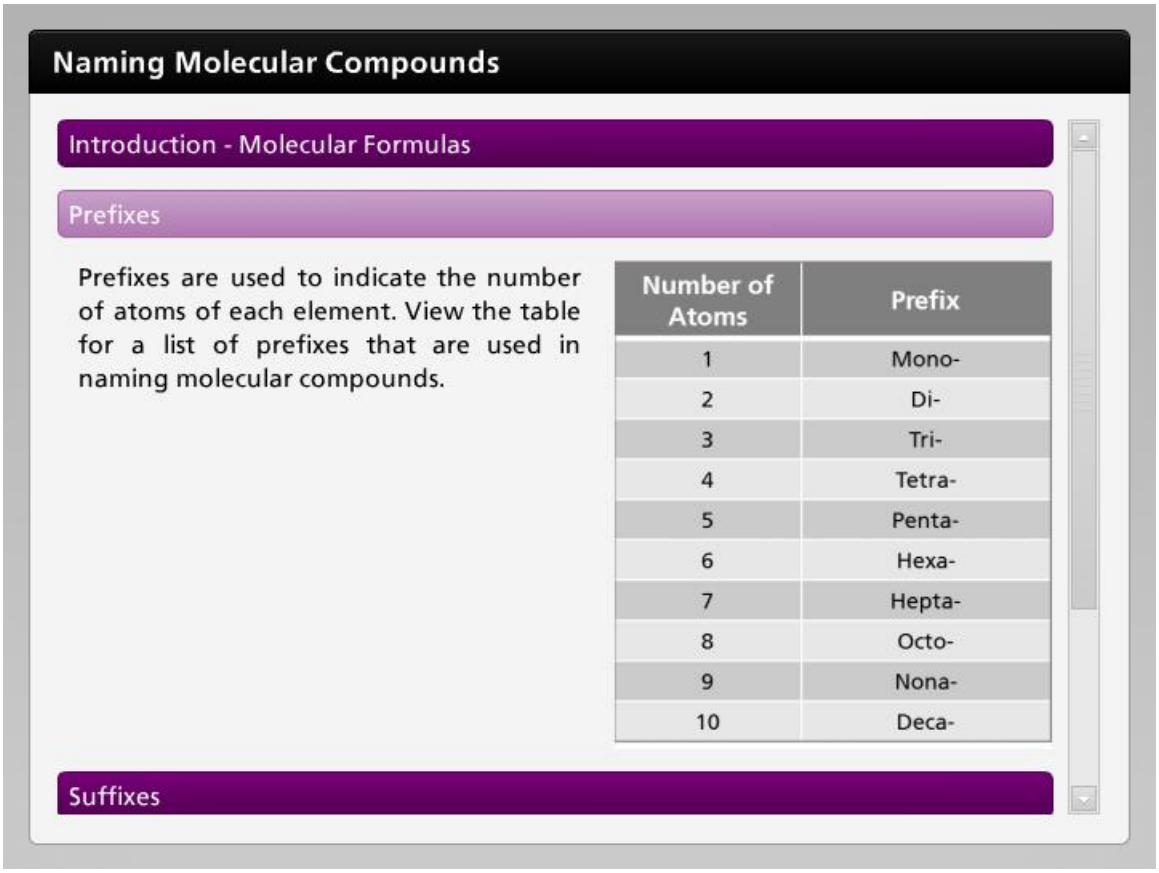
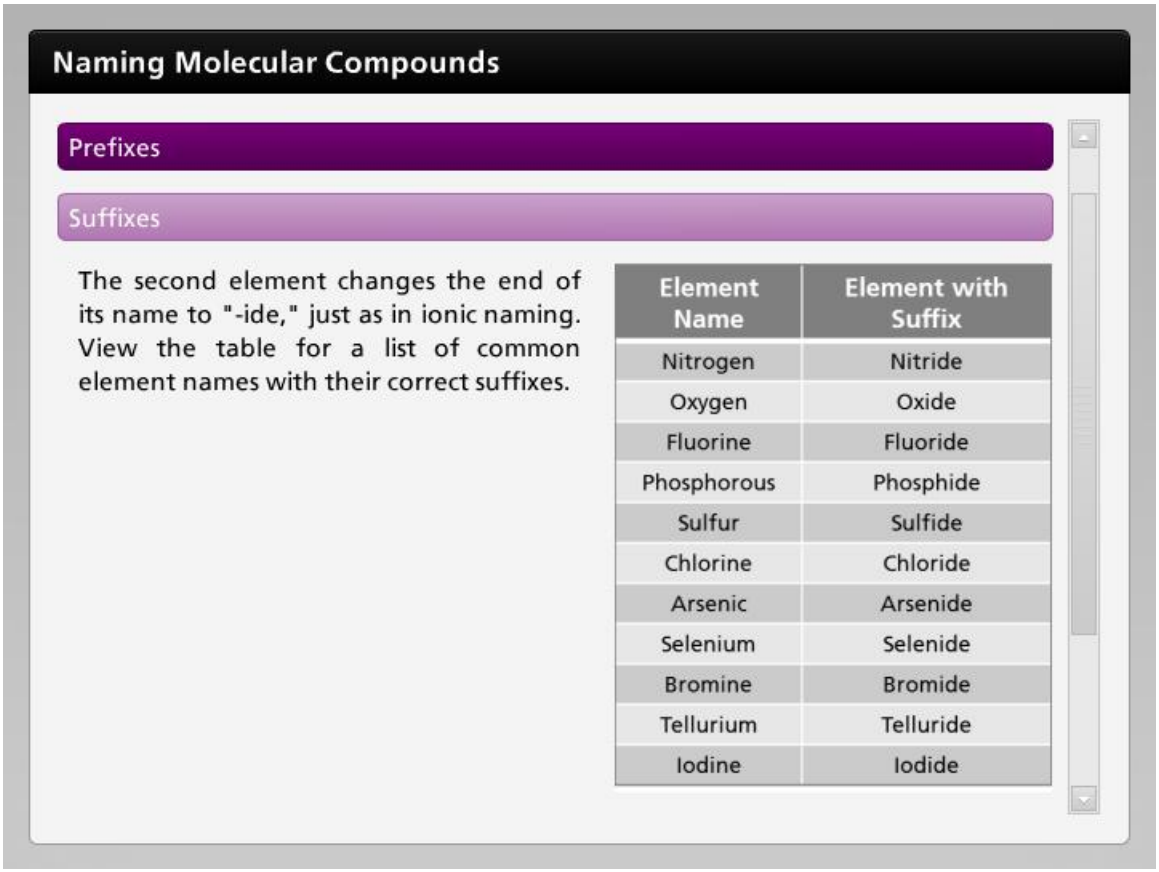
Prefixes



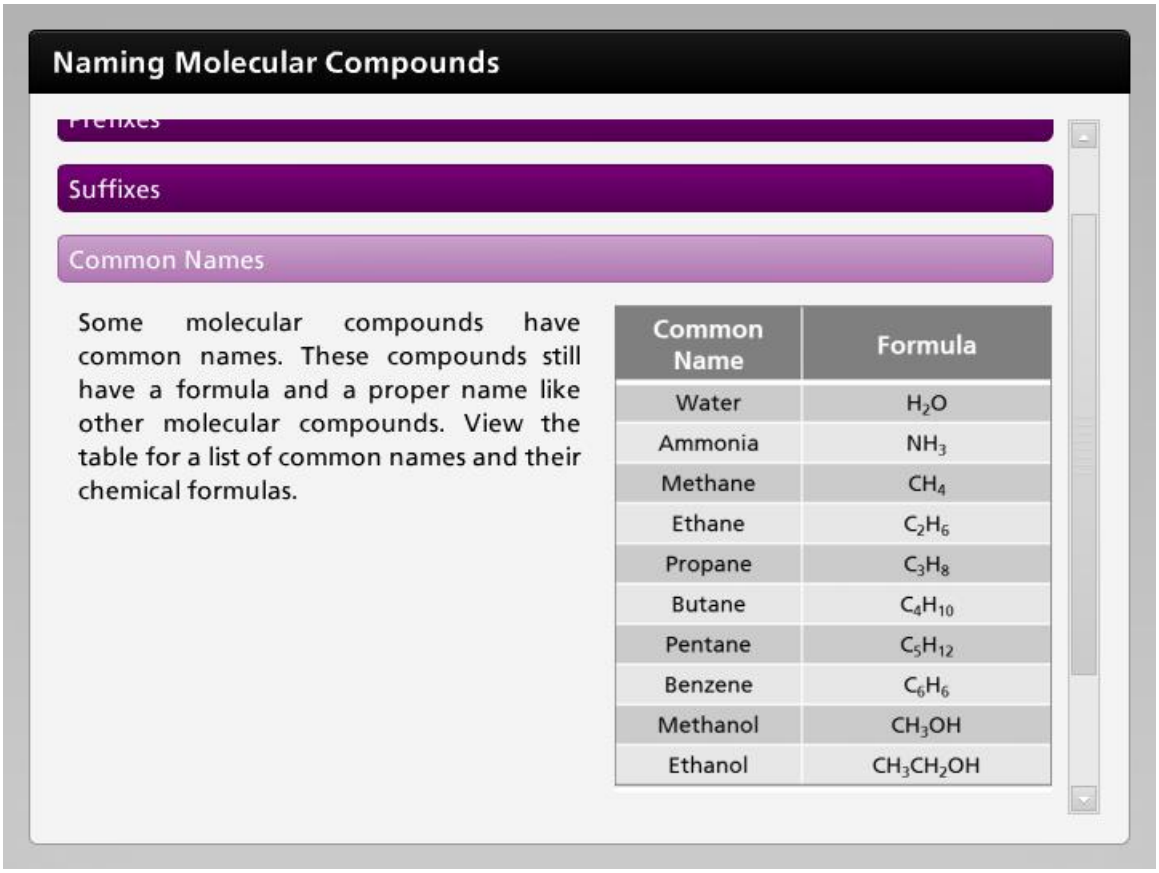
Prefixes are used to indicate the number of atoms of each element. View the table for a list of prefixes that are used in naming molecular compounds.

Suffixes



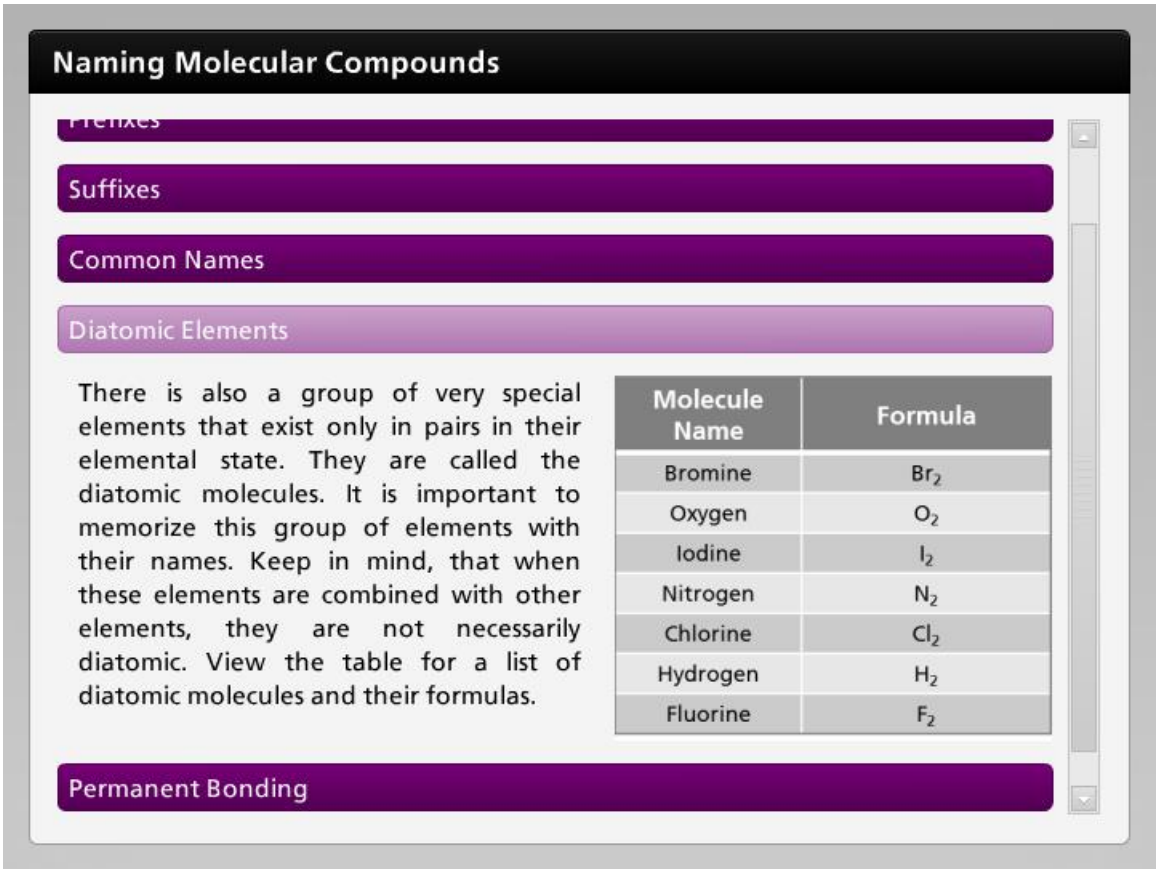
The second element changes the end of its name to "-ide," just as in ionic naming. View the table for a list of common element names with their correct suffixes.

Common Names



Some molecular compounds have common names. These compounds still have a formula and a proper name like other molecular compounds. View the table for a list of common names and their chemical formulas.

Diatomic Elements



There is also a group of very special elements that exist only in pairs in their elemental state. They are called the diatomic molecules. It is important to memorize this group of elements with their names. Keep in mind that when these elements are combined with other elements, they are not necessarily diatomic. View the table for a list of diatomic molecules and their formulas.

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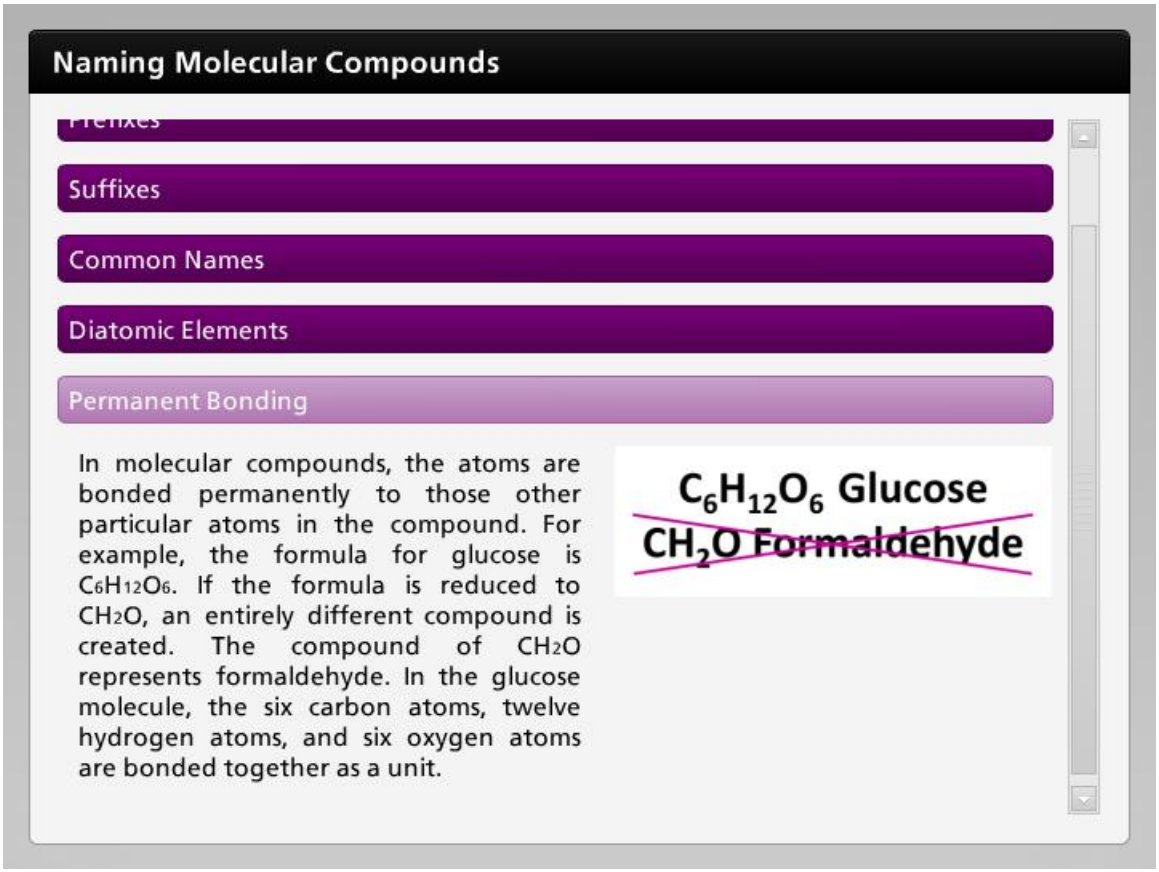
Permanent Bonding



In molecular compounds, the atoms are bonded permanently to those other particular atoms in the compound. For example, the formula for glucose is $C_6H_{12}O_6$. If the formula is reduced to CH_2O, an entirely different compound is created. The compound of CH_2O represents formaldehyde. In the glucose molecule, the six carbon atoms, twelve hydrogen atoms, and six oxygen atoms are bonded together as a unit.