

# Matter

## Section I: Composition of Matter

Matter is anything that has mass and takes up space. Matter can be divided into mixtures and pure substances. A **substance** is a type of matter with a fixed composition that cannot be separated by physical means. These pure substances are either elements or compounds. An **element** is a substance made up of atoms with the same identity such as gold, helium, and aluminum. A **compound** has atoms of two or more elements combined such as water ( $H_2O$ ) and carbon dioxide ( $CO_2$ ).

A **mixture** is a material that is made up of two or more substances that can be separated by physical means. Mixtures are characterized in two ways. A **heterogeneous mixture** is a mixture in which different materials are easily identifiable and can be separated from each other. A fruit salad is comprised of several different types of fruit. A **homogeneous mixture** is one in which two or more substances are uniformly spread out so that you cannot see one separate from another such as vinegar and saltwater.

