

**Lesson Outline**

**LESSON 1**

**Classifying Matter**

**A. Understanding Matter**

1. \_\_\_\_\_ is anything that has mass and takes up \_\_\_\_\_.
2. A(n) \_\_\_\_\_ is a small particle that is a building block of matter.

**B. Atoms**

1. A(n) \_\_\_\_\_ is at the center of the atom.
  - a. The nucleus is made up of \_\_\_\_\_, which have a(n) \_\_\_\_\_ charge, and \_\_\_\_\_, which have no charge.
  - b. \_\_\_\_\_ have a(n) \_\_\_\_\_ charge and move quickly around the nucleus.
2. Not all atoms have the same numbers of protons, \_\_\_\_\_, and electrons.

**C. Substances**

1. A(n) \_\_\_\_\_ is matter with a composition that is always the same.
2. One type of substance is a(n) \_\_\_\_\_, which contains only one type of atom.
  - a. Each type of atom contains a different number of \_\_\_\_\_ in its nucleus.
  - b. The number of protons in an atom is called the \_\_\_\_\_ of the atom.
  - c. Most elements consist of \_\_\_\_\_ atoms, but the atoms of some elements exist in \_\_\_\_\_.
3. A(n) \_\_\_\_\_ is a type of substance containing atoms of two or more different elements chemically bonded together.
  - a. A chemical \_\_\_\_\_ is the combination of symbols and \_\_\_\_\_ that represents a compound.
  - b. The symbols in a chemical formula show the different \_\_\_\_\_ in the compound.
  - c. The number of each type of atom in a chemical formula is given by a(n) \_\_\_\_\_.

## Lesson Outline continued

d. If no subscript is written, only \_\_\_\_\_ atom of the element is in the chemical formula.

4. The properties of a(n) \_\_\_\_\_ are different from the properties of the elements it contains.

### D. Mixtures

1. A(n) \_\_\_\_\_ is matter that can vary in composition.

a. The components of a mixture are \_\_\_\_\_ blended together, so they can be separated by \_\_\_\_\_ means.

b. The amounts of different components of a mixture can \_\_\_\_\_ from one sample to another.

2. In a(n) \_\_\_\_\_ mixture, the individual substances are not evenly mixed.

3. In a(n) \_\_\_\_\_ mixture, the individual substances are evenly mixed.

a. Another name for a homogeneous mixture is a(n) \_\_\_\_\_.

b. In a solution, one or more \_\_\_\_\_ are dissolved in the \_\_\_\_\_, which is the substance that is present in the largest amount.

c. When something \_\_\_\_\_, it forms a solution by mixing evenly.

### E. Compounds v. Solutions

1. Chemical formulas can be used to describe \_\_\_\_\_ but not \_\_\_\_\_.

2. The components of a compound are \_\_\_\_\_ combined, but the components of a solution are \_\_\_\_\_ combined.

3. The composition of a(n) \_\_\_\_\_ can vary, but the composition of a(n) \_\_\_\_\_ does not vary.