



## Section 1 Structure of Matter

- A. **Matter**—anything that has \_\_\_\_\_ and takes up space.
- B. The **atom**—a small particle that makes up most types of \_\_\_\_\_
- Lavoisier introduced the **law of conservation of matter**—matter is neither \_\_\_\_\_ nor \_\_\_\_\_, but only changes form.
  - People used to think \_\_\_\_\_ could appear and disappear.
  - Dalton introduced an early \_\_\_\_\_.
    - \_\_\_\_\_ are too small to be seen by human eye.
    - Each type of matter is made of \_\_\_\_\_ of atom.
  - Thomson discovered that atoms are made of even smaller \_\_\_\_\_.
    - \_\_\_\_\_—tiny, negatively charged particles with mass
    - Proposed that an atom was a ball of \_\_\_\_\_ with electrons embedded in it
  - \_\_\_\_\_ suggested a new model of the atom.
    - \_\_\_\_\_—the positively charged central part of the atom
    - Protons**—the \_\_\_\_\_ charged particles in the nucleus
    - Electrons are scattered in the mostly empty space around the \_\_\_\_\_.
  - Chadwick introduced \_\_\_\_\_—particles that come from the nucleus and have no charge
  - \_\_\_\_\_ Model—Electrons are so small and fast that they move in a cloud.

## Section 2 The Simplest Matter

- A. **Elements**—materials that cannot be \_\_\_\_\_ into simpler materials
- There are \_\_\_\_\_ known elements.
  - 90 \_\_\_\_\_ occurring elements, 22 \_\_\_\_\_ elements—made in laboratories

**Note-taking Worksheet** (continued)

B. Periodic Table—Chart that organizes and displays information about the \_\_\_\_\_

1. **Atomic \_\_\_\_\_**—the top number in the element's periodic table block
  - a. Tells the number of \_\_\_\_\_ in the nucleus of each atom of that element
  - b. The number of \_\_\_\_\_ remains constant in every atom of an element.
2. \_\_\_\_\_—atoms of the same element that have different numbers of \_\_\_\_\_
3. **Mass number**—number of \_\_\_\_\_ plus number of neutrons
4. **Atomic \_\_\_\_\_**—the number found below the element symbol
  - a. The average \_\_\_\_\_ of an atom of an element
  - b. The unit used for atomic mass is the \_\_\_\_\_, or u.

C. Elements fall into three general groups characterized by similar properties

1. \_\_\_\_\_—majority of elements
  - a. \_\_\_\_\_ luster
  - b. Good conductors of \_\_\_\_\_
  - c. \_\_\_\_\_ at room temperature
  - d. \_\_\_\_\_, or can be shaped
  - e. \_\_\_\_\_, or can be drawn into wires without breaking
2. \_\_\_\_\_—found on the right side of the periodic table
  - a. \_\_\_\_\_ in appearance
  - b. \_\_\_\_\_ conductors of heat and electricity
  - c. Many are \_\_\_\_\_ at room temperature
  - d. \_\_\_\_\_, cannot change shape without breaking
  - e. 96 % of the \_\_\_\_\_ is made up of nonmetals
3. \_\_\_\_\_—found between the metals and nonmetals on the periodic table
  - a. Have characteristics of both \_\_\_\_\_ and \_\_\_\_\_
  - b. Do not \_\_\_\_\_ as well as metals
  - c. All are \_\_\_\_\_ at room temperature

**Note-taking Worksheet (continued)****Section 3 Compounds and Mixtures**

**A. Substance**—Matter that has the same \_\_\_\_\_ and properties throughout

**B. Compound**—Substance whose smallest unit is made up of

\_\_\_\_\_

1. Written in \_\_\_\_\_

a. The subscript number tells \_\_\_\_\_ of the preceding element are in the compound.

b. No subscript is used when \_\_\_\_\_ of the element is present.

2. A given compound is always made of the same elements in the same \_\_\_\_\_.

**C. Mixture**—Two or more substances mixed together which don't make a \_\_\_\_\_ substance

1. Unlike compounds, the \_\_\_\_\_ of the substances can be changed.

2. Examples: \_\_\_\_\_, \_\_\_\_\_

3. Can \_\_\_\_\_ mixtures easily

4. \_\_\_\_\_ mixtures—The same throughout

5. \_\_\_\_\_ mixtures—you can see the different parts