

Chapter 3 Matter: Section 1

Scan Section 1 of your text. Use the checklist below as a guide.

- Read all headings.
- Read all bold words.
- Read all tables and graphs.
- Look at all the pictures and read their captions.
- Think about what you already know about elements.

Write a fact about atoms.

In the left blank, **write** the terms defined below.

1. _____ anything that has volume and mass
2. _____ a substance that cannot be broken down into simpler substances by physical or chemical means
3. _____ the center of an atom, made up of protons and neutrons
4. _____ a particle that has mass and a positive electrical charge
5. _____ a particle with about the same mass as a proton but with no electrical charge
6. _____ a particle with little mass and a negative electric charge
7. _____ the number of protons in an atom's nucleus
8. _____ the combined number of protons and neutrons in an atom
9. _____ atoms of the same element with different mass numbers
10. _____ an atom that gains or loses an electron with a net electric charge

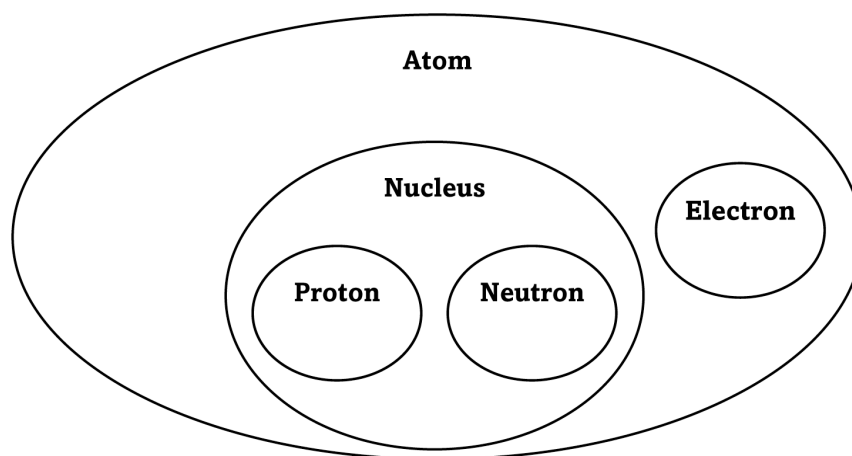
Define the following term: exhibit

Describe elements by completing the prompts below. Use with pages 60–61.

An element is a _____ . There are elements that occur naturally in the universe. A chemical symbol is a _____ .

Organize information about the structure of atoms by writing the letter for each statement in the correct area of the diagram. Some letters will be used more than once. Use with pages 60–62.

- a. consists of protons, neutrons, and electrons
- b. determines the atomic number
- c. has the same number of protons and electrons
- d. has little mass
- e. has mass
- f. has negative charge
- g. has no charge
- h. has positive charge
- i. helps determine the mass number
- j. is found in an energy level around the nucleus
- k. is made up of protons and neutrons



Draw the figures below to help you understand isotopes. Use information from your book to help you. Use with pages 63–64.

1. Draw a chlorine-35 atom.
2. Label the nucleus with the number of protons and neutrons inside.
3. Circle the valence energy level.

1. Draw a chlorine-37 atom.
2. Label the nucleus with the number of protons and neutrons inside.
3. Circle the valence energy level.

What is the relationship of the two atoms you drew above? _____

Would the two atoms would have the same properties? Why or why not. _____

Analyze Figure 6 in your text. Write the chemical symbols for elements that match the following descriptions. Use with pages 61, 65.

The 3 most common elements in Earth's crust

The most abundant element in the universe

The element that makes up 5.0% of Earth's crust

4 elements that are common both in the universe and in the earth's crust

Synthesize Make a concept map to organize facts you have learned in this section about atoms and isotopes. Create your concept map on the back of this page.