

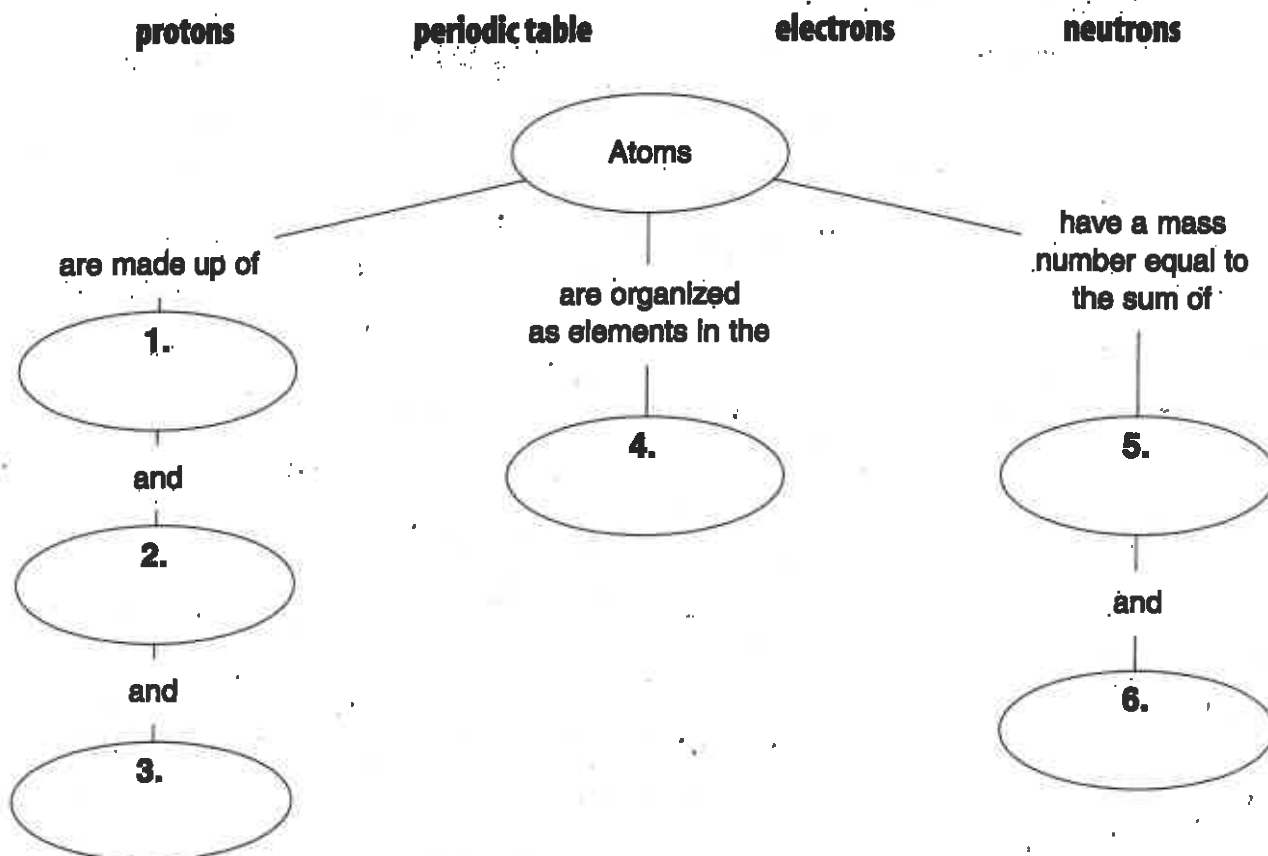
Directed Reading for
Content Mastery

Overview

Properties of Atoms and the Periodic Table

CHAPTER 16.1 REVIEW

Directions: Complete the concept map using the terms in the list below. Terms can be used more than once.



Directions: complete the following sentences by underlining the correct words in parentheses.

7. An element is matter that is composed of one type of (atom/quark).
8. The unit of measurement used for atomic particles is the (atom size/atomic mass unit).
9. Atoms of the same element that have different numbers of neutrons are called (isotopes/electron clouds).
10. In the periodic table, elements are arranged by increasing atomic (power/number).
11. An electron dot diagram uses the symbol of an element and dots to represent the (quarks/electrons) in the outer energy level.

SECTION

1

Reinforcement

Structure of the Atom

Directions: Answer the following questions on the lines provided.

1. How is the chemical symbol of an element determined?

2. What are atoms composed of?

3. Are electrons, protons, or neutrons the smallest particles? If not, what are?

4. How many types of quarks are there and what is the name of one of them?

5. Why do scientists use models to study atoms?

6. Why has the atomic model changed over time?

7. Why is the current atomic model called the "Electron Cloud Model"?

Directions: Match the term in Column I with the definition in Column II. Write the letter of the correct definition in the blank at the left.

Column I

_____ 8. electron

_____ 9. neutron

_____ 10. nucleus

_____ 11. proton

_____ 12. quark

Column II

a. positively charged particle

b. negatively charged particle

c. neutral particle

d. smaller particles that make up protons and neutrons

e. positively charged center of an atom

ACTIVITY ■ Classification of Elements: The Periodic Table

Identifying Substances

Complete the chart by first identifying each of the substances by name. Then describe each substance by placing a check in the appropriate box.

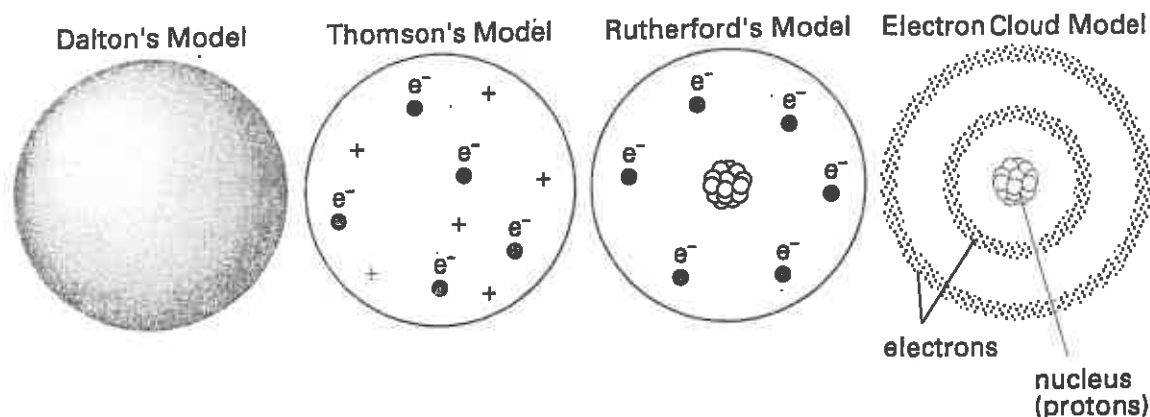
Substance	Name	Element	Compound	Symbol	Formula	Atom	Molecule
O							
O ₂							
H							
H ₂							
C							
CO							
Al							
NH ₃							
Cl ₂							
Au							
CO ₂							
Ag							
Fe							
H ₂ O							
Hg							



Models of the Atom

Use this worksheet to study Lesson 17.2. Cover the answers on the right. Read each statement or question and write your answers in the space provided. Then uncover the correct answers to see if they match your answers. If any of your answers are incorrect, reread the part of the lesson covered by that question.

As scientists have learned more about the structure of the atom, the models they use to describe the atom have changed.



Tell which of the four models pictured above is being described by each statement below.

1. This model was the first to include negatively charged particles. These particles were named electrons. They were thought to be mixed in with positive material.

2. This model showed that the atom had a dense region with a positive charge. This region was named the nucleus. Electrons were outside the nucleus.

3. According to this model, elements are made of very hard spheres called atoms that cannot be divided into smaller particles.

4. In this model of the atom, the nucleus has both protons and neutrons inside. Electrons are found in "probable" locations outside the nucleus.
