

Atoms, Elements, Compounds, and Mixtures

section 1 Models of the Atom

● Before You Read

What is the smallest thing you have ever seen? Where did you see it? Was this thing made up of smaller parts?

What You'll Learn

- how scientists discovered subatomic particles
- how the atom model was developed
- what a nuclear atom is
- that all matter is made up of atoms

● Read to Learn

First Thoughts

People first began to wonder about what matter was made of more than 2,500 years ago. Some early thinkers thought that matter was made of tiny particles. They thought that you could cut matter in half and then in half again many times. Finally, you would have a piece so small that you could not cut it any more. They named this smallest piece the atom. The word *atom* means "cannot be divided."

How do you describe something that you can't see?

Thousands of years ago, people could not prove that atoms existed. In early times, scientists did not do experiments. They discussed their ideas until they agreed on them. Even if they wanted to experiment to find out about atoms, they could not have. Early scientists didn't know much about what we call chemistry, or the study of matter. Equipment that scientists use today to study matter had not yet been invented. Atoms were still a mystery as recently as 500 years ago. Since scientists could not see the atoms, they could not prove that atoms existed.

Study Coach

Outline Make an outline of the section as you read. Be sure to include vocabulary words and main ideas. Review your outline when you finish reading the section.

Reading Check

1. **Explain** Why didn't early scientists do experiments?
