

Elements and the Periodic Table ▪ *Guided Reading and Study*

Organizing the Elements

This section explains how the elements are organized in a chart called the periodic table. It also explains what information the periodic table contains.

Use Target Reading Skills

Before you read, preview the red headings. In the graphic organizer below, ask a what or how question for each heading. As you read, write the answers to your questions.

Patterns in the Elements

Question	Answer
What pattern of elements did Mendeleev discover?	Patterns appeared when...

Patterns in the Elements

1. What did Dmitri Mendeleev discover in 1869?

2. What is the atomic mass of an element?

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3. Mendeleev noticed that patterns appeared when he arranged the elements in what way?

4. Is the following sentence true or false? Mendeleev also grouped elements that had similar properties. _____.

5. Mendeleev's periodic table had _____ blank spaces left in it, which represented elements that had not yet been discovered.

6. What does the word *periodic* mean?

7. A chart of the elements showing the repeating pattern of their properties is called the _____.

8. The modern periodic table is now arranged according to _____.

Finding Data on Elements

9. The atomic number for the element calcium (Ca) is 20. How many protons and electrons does each calcium atom have?

10. A one- or two-letter representation of an element is called a(n) _____.

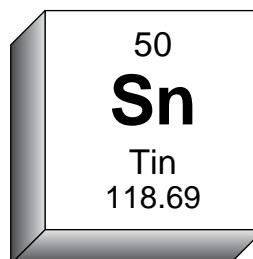
11. Use the square from the periodic table to fill in the blanks below.

a. Name of element: _____

b. Chemical symbol: _____

c. Atomic mass: _____

d. Atomic number: _____



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Organizing the Elements *(Continued)*

Organization of the Periodic Table

12. How can an element's properties be predicted?

13. Each horizontal row in the periodic table is called a(n)_____.

14. Is the following sentence true or false? Across a period from left to right, the properties of elements change according to a pattern._____.

15. Circle the letter of each term that refers to elements in a column of the periodic table.

- a. period
- b. family
- c. group
- d. symbol

16. Group 15 of the periodic table is the _____ family.

17. Circle the letter of the statement that is true about elements in each group.

- a. They all have the same atomic mass.
- b. They all have similar characteristics.
- c. They all have similar atomic numbers.
- d. They all have the same chemical symbol.