Name _____ Date _____ Class _____

Lesson Outline LESSON 1

Using the Periodic Table

A. What is the periodic table?

1. The _____ is a chart of the elements arranged into rows and columns according to their chemical and physical properties.
2. The table can be used to determine how all _____ are related to one another.

B. Developing a Periodic Table

1. In the mid-1800s, Russian chemist and teacher _____ created a table to help classify the elements by their properties.
   - **a.** He placed the elements in rows of increasing atomic _____.
   - **b.** The elements in the table showed repeating patterns; _____ is a word used to describe such patterns.
   - **c.** For example, Mendeleev noticed patterns in the _____ of elements, the temperature at which a solid changes to a liquid.
2. After arranging the known elements in a periodic table, Mendeleev noticed large gaps between some elements. He predicted that scientists would find _____ to fit into these spaces. Mendeleev's predictions were _____.
3. In the early 1900s, Henry Moseley found that the problem with Mendeleev's table could be solved if the elements were arranged in rows by _____.
4. The atomic number is the number of _____ in the nucleus of an atom of an element.

C. Today's Periodic Table

1. You can identify the properties of an element by studying its _____ on the periodic table.
2. The _____ shows the element's name, atomic number, chemical symbol, state of matter, and atomic mass.
3. A(n) _____ is a column on the periodic table.
4. Elements in the same group have similar _____, which means they react with other elements in similar ways.
5. The rows in the periodic table are called _____.

Name _____ Date _____ Class _____

Lesson Outline continued

6. As you read from left to right across the periodic table, atomic number _____ by one for each element.

7. Most of the elements in the periodic table are _____, which are shiny and conduct thermal energy and electricity.

8. Most nonmetals are on the _____ side of the periodic table; these elements do not conduct thermal energy and electricity.

9. Between the metals and nonmetals on the periodic table are the _____, which have properties of metals and nonmetals.

D. How Scientists Use the Periodic Table

1. Scientists use the periodic table to predict the _____ of the new elements they create.

2. Elements that are _____ each other on the periodic table share similar properties.