Name _____ Date _____ Class _____

Lesson Outline

LESSON 1

What is a mineral?

A. What is a mineral?

1. A(n) _____ is a naturally occurring, inorganic solid, with a definite chemical composition.

a. There are approximately _____ minerals on Earth; however, only about _____ are common. Ten of these are called the _____ minerals.

b. These minerals occur _____ and are not made in a(n) _____.

2. Minerals have a definite chemical _____.

a. Some minerals, such as silver, are composed of one _____.

b. Other minerals are made up of a(n) _____ of several elements.

3. Minerals form predictable _____ patterns. The internal arrangement of atoms or ions determines the _____ of a crystal.

4. Minerals are inorganic, or not from _____ origins.

5. Even though they are inorganic, some minerals can form as a result of inorganic processes. For example, marine organisms can extract _____ from _____ and make their shells.

B. The Structure of Minerals

1. The shape of a crystal depends on the arrangement of its _____ or ions.

a. When crystals are _____, it is difficult to determine their shape.

b. Often, minerals do not develop in large crystals but in tiny _____.

Lesson Outline continued

2. Common rock-forming minerals are made from elements that are _____ in Earth's crust.

a. The two most abundant elements in Earth's crust are _____ and _____. A(n) _____ is a mineral that contains silicon and oxygen in its crystal structure, although it can also contain other elements.

b. The most common silicate mineral is _____.

c. Nonsilicates do not contain the element _____.

C. How do minerals form?

1. Dissolved minerals in water can undergo _____, or solidify in an orderly arrangement of atoms, when the water evaporates.

2. Minerals such as halite crystallize from _____ solutions.

a. As water flows over Earth or seeps into the ground, it _____ minerals.

b. When seawater becomes _____ with dissolved salts, the water cannot hold any more salt.

c. Some marine organisms can remove salt from seawater and produce shells or build a(n) _____.

3. Water that contains dissolved minerals can travel through _____ to hotter parts of the crust. When conditions are right, minerals _____ out of the hot water, filling the cracks.

4. Minerals can form when molten _____ cools and crystallizes.

a. _____ is molten rock below Earth's surface.

b. _____ is magma that erupts onto Earth's surface.

c. Cooled lava forms _____ mineral crystals. Cooled magma forms _____ mineral crystals.

5. Some minerals form from solids deep in Earth's crust and _____.

a. These minerals are stable under conditions of high _____ and high pressure.

b. If these minerals come to Earth's surface, they become _____.