Name _____ Date _____ Class _____

1. Highlight each question below.
2. Read through the summary and highlight the important information for each question.
3. Use the highlighted information to create a concept map on the next page in your notebook.

Fossils

Guide for Reading

- How do fossils form?
- What are the different kinds of fossils?
- What does the fossil record tell about organisms and environments of the past?

Fossils are the preserved remains or traces of living things. Fossils provide evidence of how life has changed over time. **Most fossils form when living things die and are buried by sediments. The sediments slowly harden into rock and preserve the shapes of the organisms.** Fossils are usually found in **sedimentary rock,** the type of rock that is made of hardened sediment.

Most fossils form from animals or plants that once lived in or near quiet water such as swamps, lakes, or shallow seas. When an organism dies, generally only its hard parts leave fossils. **Fossils found in rock include molds and casts, petrified fossils, carbon films, and trace fossils. Other fossils form when the remains of organisms are preserved in substances such as tar, amber, or ice.**

The most common fossils are molds and casts. A **mold** is a hollow area in sediment in the shape of an organism or part of an organism. A mold forms when the hard part of an organism, such as a shell, is buried in sediment. Later, water carrying dissolved minerals may seep into the empty space of a mold. If the water deposits the minerals there, the result is a **cast,** a solid copy of the shape of an organism. **Petrified fossils** are fossils in which minerals replace all or part of an organism. Another type of fossil is a **carbon film,** an extremely thin coating of carbon on rock. **Trace fossils** provide evidence of the activities of ancient organisms. Fossil footprints, trails, and burrows are examples of trace fossils. Some processes preserve the remains of organisms with little or no change. Organisms can be preserved in tar, amber, or ice.

Scientists who study fossils are called **paleontologists.** Paleontologists collect and classify fossils. Together, all the information that paleontologists have gathered about past life is called the fossil record. **The fossil record provides evidence about the history of life on Earth. The fossil record also shows that groups of organisms have changed over time.** It also reveals that fossils occur in a particular order, showing that life on Earth has evolved, or changed. Thus, the fossil record provides evidence to support the theory of evolution. A **scientific theory** is a well-tested concept that explains a wide range of observations. **Evolution** is the gradual change in living things over long periods of time. The fossil record shows that millions of types of organisms have evolved. Some have become extinct. A type of organism is **extinct** if it no longer exists and will never again live on Earth.

Fossils provide evidence of Earth's climate in the past. Paleontologists also use fossils to learn about past environments and changes in Earth's surface.