

THE HISTORY OF LIFE: FOSSILS-PART OF THE PICTURE

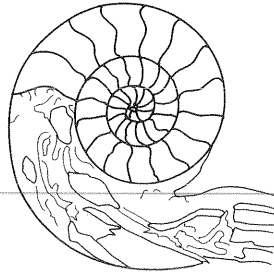
Directions: Use Chapter 17 in your text and the following to complete the questions below.

Fossils provide evidence about how ancient animals, plants, and other organisms looked and where they lived. Fossils, however, do not provide a complete understanding of an organism. For example, scientists can only conjecture what the skin, hair, and other soft parts of an animal were like. It is even more difficult for them to infer animal behavior from fossils. Scientists do, however, make fossil reconstructions using information from many fields of science, including anatomy, physiology, and ecology.

In order to imagine what an extinct animal was like, it is helpful to know something about the environment in which it lived. Studying the relationship between a fossil and the sediment it was buried in can provide scientists with many clues. For example, the sediment can reveal whether the animal lived on land or in water.

Sedimentation is the deposition of small rock particles in places where they become cemented together. Sediments deposited over time form stratifications, or layers. A basic rule of stratification is that each layer is older than the layer above it and younger than the layer below. The fossils found in different layers help to date the layers. Many layers have been dated and correlate with other layers in other parts of the world. These sediments and the fossils in them have provided much of the current knowledge of Earth's history.

Certain types of fossils, called *index fossils*, are fossilized organisms that existed for relatively short periods of time and were distributed over a wide area. These fossils can help to date the rest of the material found in a sedimentary layer. Ammonites, like the one shown here, are a typical index fossil for the Jurassic Period. They are extinct relatives of the *Nautilus*.



Evaluation *On the lines provided answer the following questions.*

1. What is an index fossil? What does it reveal about other material found with it?

2. What are some aspects of an organism that can't be studied using fossil evidence? Why don't fossils provide information about these characteristics?
