

Lesson Outline

Ch 14 lesson 1 outline

LESSON 1

Fossil Evidence of Evolution

A. The Fossil Record

1. _____ are the preserved remains or evidence of once-living organisms.
2. All the fossils ever discovered on Earth make up the _____.
3. Fossils help scientists figure out what species that no longer _____ looked like when the organisms were alive.

B. Fossil Formation

1. Most fossils are formed of the _____ parts of an organism.
2. Sometimes when the remains of an organism get buried in mud, wet sand, or other sediments under a body of _____, the molecules that formed the remains get replaced by _____ in the water.
 - a. This type of fossil formation is called _____.
 - b. Most mineralized fossils are formed of shell or _____, but wood can also become a mineralized fossil.
3. In _____, a fossil forms when a dead organism is compressed over time and pressure drives off the organism's liquids and gases.
4. Sometimes organisms or parts of organisms make a(n) _____ in sand or mud.
 - a. The kind of fossil that forms as an impression in rock is called a(n) _____.
 - b. If the impression gets filled with sediments that harden to rock, a(n) _____ is the result.
 - c. Molds and casts show only _____ features of organisms.
5. The preserved evidence of the activity of an organism, such as its tracks, is called a(n) _____ fossil.
6. In rare cases, the original _____ of an organism can be preserved, such as _____ frozen in ice.

C. Determining a Fossil's Age

1. Scientists cannot date most _____ directly. Instead they usually find the age of the _____ around the fossils.

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2. In _____ dating, scientists determine the relative order in which rock layers were deposited.
 - a. In a(n) _____ rock formation, the older layers of rock are below the younger layers of rock.
 - b. Relative-age dating has helped scientists figure out the order that _____ have appeared on Earth.
3. Absolute-age dating is more _____ than relative-age dating and involves _____ isotopes that decay to become stable isotopes over time.

D. Fossils over Time

1. The _____ is a chart that divides Earth's history into different time units.
2. Earth's history is divided into four _____.
3. Earth's most recent eon—the _____ eon—is subdivided into three _____.
4. Neither eons nor eras are _____ in length.
5. When scientists began developing the geologic time scale in the 1800s, they did not have _____ dating methods, so they marked time boundaries with _____.

E. Extinctions

1. When the last individual organism of a species dies, a(n) _____ has occurred.
 - a. A(n) _____ extinction occurs when many species die off within a few million years or less.
 - b. The fossil record shows evidence of _____ mass extinctions during the Phanerozoic eon.
 - c. Extinctions can occur if the _____ changes quickly; for example, as a result of a meteorite impact.
 - d. Extinctions can also occur if the environment changes _____; for example, as a result of the formation of mountain ranges.
2. The fossil record contains clear evidence of the extinction of species over time as well as evidence of the appearance of many new _____.