



ANSWER KEY

Exercise: 1

Instructions: Taphonomy is the study of the process of fossilization. Fossils are the remains of past life forms. Scientists can learn a lot about past life forms by studying fossils. However, very few things form fossils because conditions have to be right in order for fossilization to occur. Use your knowledge and the Digital Atlas to answer the following questions:

1. What is paleontology and how it is different from archaeology or anthropology?

Archaeology deals with the study of remains of past human cultures. Anthropology is the study of the origin, culture, and development of humans. Paleontology is different from archaeology and anthropology in that it deals with the study of the remains of plants and animals.

2. How old must a sample be, before it can be considered a fossil?

Age is not what defines something as a fossil; some things can become fossilized faster than others depending on the process involved. Fossils do not have to be a particular age.

3. What conditions favor the formation of fossils? How might this cause the fossil record to be biased?

The organism generally must have hard parts such as shell, bone, teeth, or wood tissue; the remains must escape destruction after death; and the remains must be buried rapidly to stop decomposition. This does make the fossil record biased because animals with soft bodies are less likely to form fossils. It also means that particular environments will not help fossils form because the remains must be buried rapidly and escape the detection of scavengers.

4. Describe three different methods of fossilization.

Organisms can be buried and preserved in substances such as frozen soil, volcanic ash, sediment, ice, oil, and amber. This process preserves even the soft parts. Hard parts such as shells, teeth, bones, and wood can also be more easily preserved because they resist weathering. Hard parts can also become altered due to carbonization (leaves only a thin film of carbonaceous material), petrification (gets replaced by minerals in water turning it to stone), and replacement (hard parts dissolve and get replaced by calcite, silica, dolomite, and iron compounds)

5. Describe the difference between a fossil and an artifact.

Unlike fossils, which are the remains of organisms that lived in the past, an artifact is something that was made or modified by organisms that lived in the past - most typically humans.

6. On the top of the page, click on the fossil of the Horn Coral. Of the four basic ways fossils are preserved mentioned in the Digital Atlas, what do you think this is an example of?

This is an example of an altered hard part of an organism.