Matching Fossils with Geologic Time

Earth Science Lab Chapter 21

Background: A fossil is the remains or evidence of a once-living plant or animal. When most organisms die they decay and do not become fossils. The few organisms that are fossilized help scientists approximate when life began, the types of animals and plants that existed at that time, or when species go extinct. A fossil is more likely to form if quick burial occurs, if the remains are protected from predators and the elements, or if the organism has hard body parts (bones, teeth, shells) that are more readily fossilized. Some fossils can even be used to show the approximate age of rocks; these are called index fossils. Index Fossils in different rock layers can be compared to determine one rock layers age in relation to another’s. In other words, fossils can be used to match rock layers or to determine the age of a rock layer. In order to be an index fossil, the remains must be easily recognized, found in large numbers, widespread, and the organism must have lived during a short time.

Pre-Lab Questions:

1. What is a fossil?
2. What 3 things increase an organisms chance to be fossilized?

i.

ii.

iii.

1. What is an index fossil?
2. What are the 4 criteria needed for something to be considered an index fossil?

i.

ii.

iii.

iv.

Procedure:

1. Examine the fossils found at your table.
2. Find where the Fossils are located on the chart entitled “Fossils and Geologic Time”
3. Record the period & era for that fossil in your data table.
4. Using the “Fossils and Geologic Time” chart include 1 interesting/major event that occurred in the same time period. Record this event in your data table.
5. Using the “Fossils and Geologic Time” chart find and record 1 other organism that was around at this time.
6. Repeat steps 1-5 for the other 4 fossils at your table.
7. Once you are signaled to, switch tables and repeat steps 1-6 for the fossils found at each station.

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| **Fossil Name** | **Period** | **Era** | **Major Event** | **Other Organism** |
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| **Fossil Name** | **Period** | **Era** | **Major Event** | **Other Organism** |
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Post-Lab Questions:

1. What are the main divisions of the geologic time scale?
2. List 3 fossils from the Paleozoic Era.
3. List 3 fossils from the Mesozoic Era.
4. List 3 fossils from the Cenozoic Era.
5. What period is referred to as the age of the dinosaurs? Why?
6. What period is referred to as the age of the mammals? Why?
7. Compare and Contrast organisms found during the Cambrian period with those found during the Quaternary Period.
8. What are two changes that can force us to switch **eras**? Provide an example of each from the chart.