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Class and section: Science 10 A

Activity 7.0

The Earth's History

B.

1. What are the different subdivisions of the geologic time scale?

The subdivisions of the geologic time scale include the following:

- **Eons** are the largest division on the geologic time scale. It is referred to as a time interval that is one billion years long.
- **Eras** are divisions of eons that are further subdivided into chunks of time called periods. It displays many time periods that are separated by significant global changes in the diversity of life.
- **Periods** are further subdivided into epochs. In comparison to other eras, they are distinguished by a more profound alteration in living forms.
- **Epochs** are units of periods that are subdivided into units of age. Typically, it is usually used to divide the Paleogene, Neogene, and Quaternary eras.
- **Ages** are the units of epochs.

2. How old is the Earth in billion years?

The estimated age of the Earth is 4.6 billion years.

3. What part of Earth's evolution (what eon) is NOT supported by evidence (fossils) preserved in rock?

The evidence found in fossils and fossilized rock does not support the Precambrian eon. There is little to no evidence discovered during this eon, which is 4 billion years before the Cambrian. In addition, the eon cannot be divided into eras, periods, or epochs for the same reason.

4. What fraction (numerical answer) of Earth's evolution has been influenced by humans?

Only 2 million years of the Earth's evolution were influenced by humans out of its billion years of existence. This is incredibly minuscule, comparable to how less than a minute's worth of Earth history is represented by it.

5. When (in million of years ago or mya) did the primitive atmosphere become oxygen-rich?

The primitive atmosphere became oxygen-rich about ca. 2300 million years ago.

6. Why is the eon after the Proterozoic Eon called the Phanerozoic Eon?

In Greek language, Phanerozoic means visible life. Since several rocks and deposits discovered had fossils that assisted in documenting significant trends in the history of Earth's revolution, this has been appropriate for the specific eon. This era had the greatest increase in life. The Paleozoic, Mesozoic, and Cenozoic eras are its divisions.

7. In what geologic period did life increase dramatically?

The Cambrian Period is known for the dramatic growth of life, known as the "Cambrian Explosion." Animals such as chordates, anthropods, and brachiopods appeared at this time.

8. In what period were major coal beds developed?

The Carboniferous Period saw the development of significant coal deposits.

9. In what era did the dinosaurs rule Earth?

The dinosaurs dominated Earth throughout the Mesozoic Era.

10. Which epoch was the development of man recorded/recognized?

The Pleistocene Epoch was the time when early man's existence was confirmed.

11. What global phenomenon marked the Ordovician-Silurian interphase?

In this interphase, global warming and global cooling caused majority of the remaining life—86% of it to be gone—which comprises minuscule marine animals like brachiopods and bryozoans.

12. What global phenomenon marked the Devonian-Carboniferous interphase?

During this interphase,seventy-five percent of life was lost including the last populations of brachiopods, trilobites, and reef-building animals that endured during the Ordovician-Silurian interphase along with other fish species that flourished in the Devonian Period which was smothered by the oxygen provided by oceanic algae.

13. What global phenomenon marked the Permian-Triassic interphase?

Because 96% of life including a variety of marine animals and several vertebrates, became extinct during the Permian–Triassic interphase which was caused by the warming of Earth’s climate, resulting changes in oceans, and volcanic activity.

14. What global phenomenon marked the Cretaceous-Paleocene interphase?

All of the dinosaurs became extinct during the Cretaceous-Paleocene interphase, along with 60–76% of all life due to an asteroid that hit the Earth, also causing the fall of global temperatures.

15. Why is the start of the Holocene considered as the initiation of another extinction period?

The longevity of species through time without human interference is used as the basis to calculate the "normal" extinction rate and is supported by fossil records which proved that the current extinction rate is 1,000 times higher than the "normal" extinction rate, blaming the impact of human activity on the ecosystem which hastens extinction.