TEST NAME:**Earth History**
TEST ID:**2208143**
GRADE:**08 - Eighth Grade**
SUBJECT:**Life and Physical Sciences**
TEST CATEGORY:**My Classroom**

Student: _____

Class: _____

Date: _____

1. **Which method would be BEST for scientists to use to determine the absolute age of a Precambrian igneous rock?**

   A. index fossils

   B. law of superposition

   C. radiometric dating

   D. law of original horizontality

2. **Which of the following eras is known as the "Age of Mammals"?**

   A. Precambrian

   B. Paleozoic

   C. Mesozoic

   D. Cenozoic

3. **A fossil discovered in Colorado dates from the early Mesozoic era. A year later a similar fossil is found in Wyoming that also dates from the early Mesozoic era. These two organisms most likely lived in**

   A. the same environment at about the same time.

   B. the same environment at different times.

   C. different environments at about the same time.

   D. different environments at different times.

4. **Scientists estimate that if index fossils were deposited during a certain time frame, then the entire rock layer was also deposited at the same time.**

Cenozoic Era	Quaternary Period	Neptunea · Pecten
	Tertiary Period	Calyptraphorus · Venericardia
Mesozoic Era	Cretaceous Period	Scaphites · Inoceramus
	Jurassic Period	Perisphinctes · Nerinea
	Triassic Period	Trophites · Monotis
Paleozoic Era	Permian Period	Leptodus · Parafusulina
	Pennsylvanian Period	Dictyoclostus · Lophophyllidium
	Mississippian Period	Cactocrinus · Prolecanites
	Devonian Period	Mucrospirifer · Palmatolepus
	Silurian Period	Crystiphyllum · Hexamoceras
	Ordovician Period	Bathyrus · Tetragraptus
	Cambrian Period	Paradoxides · Billingsella
Precambrian	———	

A scientist finds Trophite fossils. According to the chart above, in what era and period was this rock layer deposited?

A. Cenozoic era; Tertiary period

B. Mesozoic era; Triassic period

C. Paleozoic era; Permian period

D. Paleozoic era; Mississippian period

5. **Which environmental condition MOST likely existed at the time a fossil formed?**

A. Organism remains were deposited in an area of open space.

B. Organism remains were covered by lava flow.

C. Organism remains were buried with little oxygen.

D. Organism remains were buried in an area where a lot of erosion occurred.

6. **Scientists theorize that the ancient animal on the left is related to the modern animal on the right and has gone through many changes over time.**
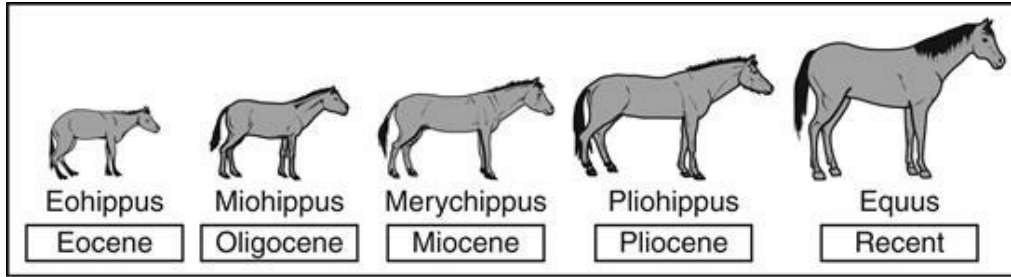
How did the scientists conclude that the animal changed over time?

A. by examining fossil records

B. by learning about natural selection

C. by studying deposition of sediments

D. by observing different types of rock formations

7. How do scientists know that some mountains were once at the bottom of an ocean?

A. Freshwater rivers flow to the ocean.

B. Saltwater fish are found in some mountain streams.

C. Dinosaur bones have been discovered in the mountains.

D. Marine fossils have been found on the peaks of some mountains.

8. Which **best** describes how ice cores are important to the study of geologic history?

A. They show unconformities, which signal changes in deposition.

B. They hold index fossils, which are used to date the different ice cores.

C. They contain evidence showing changes in the atmospheric composition over time.

D. They follow the Law of Superposition, which gives reasons for extinctions of species.

9. Which statement **best** describes the Law of Superposition?

   A. Each sedimentary layer of rock represents 1,000 years of Earth's age, much like the rings of a tree.

   B. In undisturbed layers of sedimentary rock, the upper rock layers are older than the lower rock layers.

   C. In undisturbed layers of sedimentary rock, the lowest layers contain the older rocks.

   D. Rocks that form near volcanoes are older than surrounding rock.

10. In a rock cliff, the rock layers run straight across and then jump up a foot and then run straight across again. What could have **most likely** caused this?

    A. deposition

    B. erosion

    C. fault

11. A paleontologist observes similar reptiles in the same rock layers in a cliff and none in rock layers above. Which is the **most likely** explanation from this observation?

    A. The continents separated.

    B. The reptiles moved to a new area.

    C. The reptiles evolved into a new species.

12. **Geologists frequently use mass spectrometers in determining the relative age of rocks. A spectrometer can differentiate between the ratios of isotopes in rock samples and calculates the radioactive decay involving what two isotopes?**

    A. uranium - lead
    B. rubidium - strontium
    C. potassium - argon
    D. uranium - strontium

13. Scientists studying rock layers classify the top layer as the most recent, followed by older layers that are uncovered as they dig deeper. Which law explains this method of relative dating?

   A. law of geologic continuity

   B. law of universal position

   C. law of lateral continuity

   D. law of superposition

14. Geologists are conducting research in Hawaii. Which rock will be *most* abundant?

   A. igneous

   B. sedimentary

   C. metamorphic

15. **The radioactive isotope content of a rock can be used to identify which property of the rock?**

   A. the total mass of the rock

   B. the rate at which the rock formed

   C. the types of fossils that the rock contains

   D. the amount of time passed since the rock formed

16. An undisturbed rock column contains a fossil of a reptile species in the lowest rock layer, an index fossil that was present 1 million years ago in the middle rock layer, and a fossil of a clam species in the top rock layer. Which statement is *most likely* correct?

   A. The index fossil formed when a desert habitat made rock layers in the column.

   B. There was a marine habitat over one million years ago that formed rock layers in the column.

   C. There was a desert habitat before a marine habitat that formed the rock layers in the column.

   D. There was a desert habitat more recently than one million years ago that formed rock layers in the column.

17. Which is the **best** evidence that Earth went through an Ice Age?

   A. Sea levels were lower in the past than they are now.

   B. Rocks were deposited by glaciers in now-temperate areas.

   C. River meanders were created by melted water from glaciers.

18. Which country would be **most likely** to provide ice cores that could be used to provide evidence for climate change?

   A. Greenland

   B. Italy

   C. Peru

19. Why are index fossils used as guides to determine the age of rocks?

   A. Each index fossil lived during a specific geologic time period.

   B. All index fossils lived during all the periods of geologic time.

   C. Index fossils are very rare and are not commonly found in rocks.

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20. The diagram below shows two sections of rock layers found several miles apart.
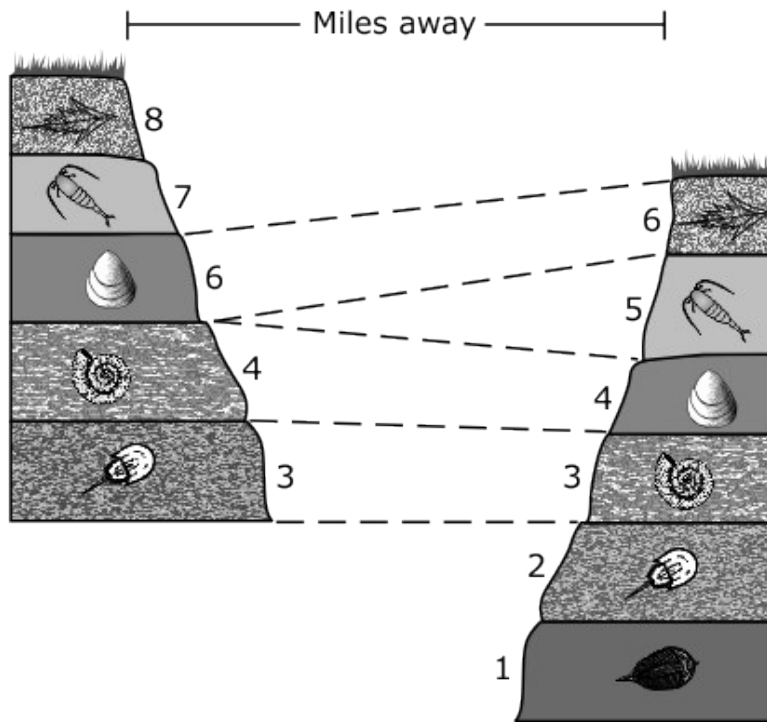
Based upon the information in the diagram, which conclusion can **best** be made?

A. The rock layers contained fossils identical to each other.

B. Rock layers are laid down from the youngest to the oldest.

C. Rock layers containing similar fossils were formed at the same time.

21. **When two fish die, Fish A sinks to the bottom of a lake and Fish B washes up on the rocky lake shore.**
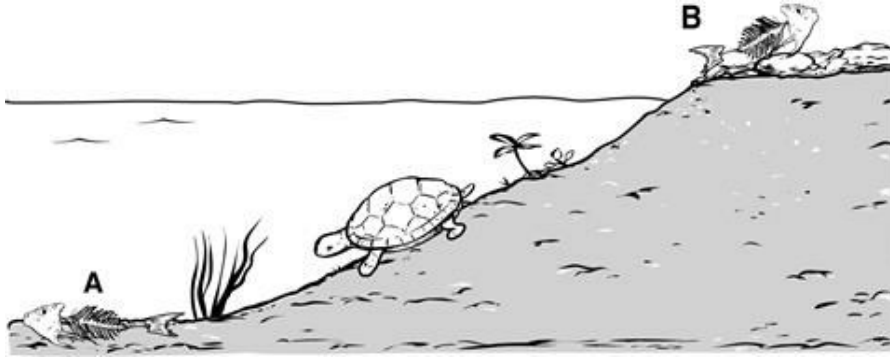
Why is a fossil more likely to form from the body of Fish A than from the body of Fish B?

A. Soft parts of the fish will decay more quickly in the water.

B. Sediments in the water will quickly cover the fish.

C. Scavengers in the water will eat the remains of the fish.

D. Currents in the water will move the fish.

22. Radioactive dating is used to study which element in igneous and metamorphic rocks?

A. carbon

B. krypton

C. uranium

23. The level of carbon dioxide in an ice core is higher at the top than farther down. What can *most likely* be determined from this?

A. A catastrophic event occurred.

B. The landmass moved further toward the equator.

C. There was a global cooling period followed by a global warming period.

D. There was a global warming period followed by a global cooling period.

24. Why are fossils commonly found in sedimentary rocks but not in igneous rocks?

    A. Igneous rocks are formed after sedimentary rocks.

    B. Igneous rocks are not deposited like sedimentary rocks.

    C. Igneous rocks are made up of harder minerals than sedimentary rock.

    D. Igneous rocks are formed from molten rock, while sedimentary rocks are formed from compacted sediments.

25. **Which of these provides the BEST evidence that the environment of Earth has changed over millions of years?**

    A. active migration of sand dunes

    B. polished appearance of rock surfaces

    C. marine fossils found in mountains

    D. bones of animals found on the ground

26. **According to the fossil record, the first horses were smaller than modern species. Horses have gradually changed over time in response to which of these?**

    A. pressure to repopulate Earth

    B. pressure to become better hunters

    C. pressure to become useful to humans

    D. pressure to survive changing environments

27. By which method have scientists determined that the Earth is about 4.5 billion years old?

    A. plate tectonics

    B. relative dating

    C. radioactive dating

    D. law of superposition

28. **Which statement below BEST explains why several fossils of sea organisms were discovered buried deep in an area of dry land?**

    A. The fossils changed locations.

    B. The area had a shift in climate.

    C. The land was once underwater.

    D. A glacier once covered the area.

29. **Certain fossils can be used to help determine the age of the rock layer in which the fossils are found. Which type of fossil is BEST to use when making this determination?**

    A. marine mammal fossil

    B. swamp fern fossil

    C. trace fossil

    D. index fossil

30. Four fossils were discovered and identified according to the rock layer in which each was found.
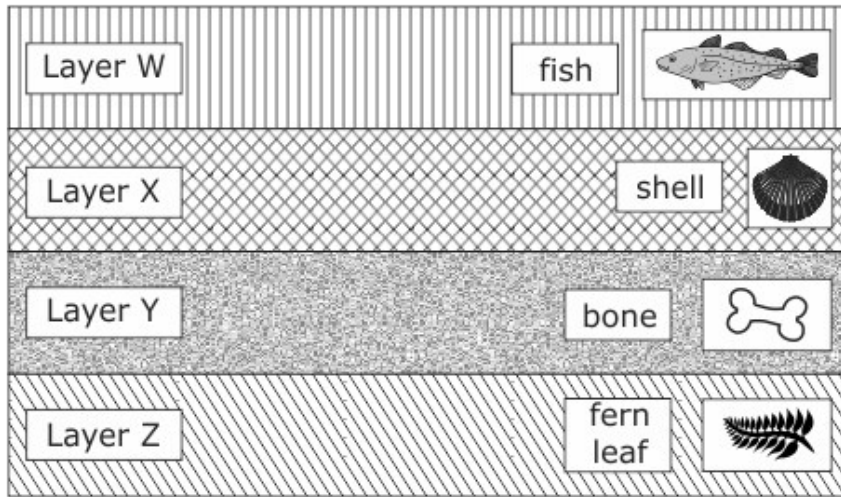
    Which is the youngest fossil?

    A. fish

    B. shell

    C. bone

    D. fern leaf

31. Where would evidence of earthquakes *most often* be found throughout Earth's history?

    A. in dry riverbeds

    B. along fault lines

    C. along the ocean shoreline

    D. in desert sand dune formations

32. Which theory does evidence found in sedimentary rocks **best** support?

    A. Most organisms from Earth's history still exist.

    B. Organisms have not changed significantly over time.

    C. All organisms from Earth's history have become extinct.

    D. Organisms have evolved from simple to complex forms.

33. **Which of these provides the BEST evidence that an environmental change has occurred?**

    A. a freshwater lake in the mountains

    B. marine fossils in a freshwater lake

    C. saltwater clams in the ocean

    D. a sandy beach next to the ocean

34. Which describes the **best** use of carbon-14 in collecting geologic evidence?

    A. to compare the decay of uranium to lead

    B. to date artifacts less than 50,000 years old

    C. to date sedimentary rock layers

    D. to identify index fossils

35. Several different fossils were found in rock layers in a geologic column. Above these rock layers, the fossils were almost nonexistent. Which **most likely** explains these observations?

    A. A nonconformity occurred.

    B. All the organisms migrated.

    C. A period of mass extinction occurred.

36. An ice core shows increasing levels of carbon dioxide over the last 100 years. Which **best** explains the high levels of carbon dioxide found in the ice core?

    A. Temperatures over the last century have been growing colder.

    B. Temperatures over the last century have been growing warmer.

    C. The region was covered by seawater at some time in the last century.

    D. The region has received higher amounts of precipitation over the last century.

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37. A rock cliff of parallel rock layers is slanted at an angle. What is this *most likely* evidence of?

    A. deposition

    B. erosion

    C. fault

38. Scientists studying a geologic site found tropical plant fossils in a lower rock layer and fossils of woolly mammoths, also called tundra mammoths, above the layer. Which is the *most likely* conclusion?

    A. The woolly mammoths lived before the tropical plants.

    B. The tropical plants became extinct due to global climate change.

    C. The tropical plants were the major food source for the woolly mammoths.

    D. The woolly mammoths lived in tropical climates as well as cold climates.

39. A cliff of undisturbed rock layers has a layer of sandstone containing a reptile fossil above a limestone layer. The limestone layer is above a layer of shale. Which describes the *most likely* geologic history of the area?

    A. The area was first a marsh environment, then an ocean, and lastly a desert environment.

    B. The area was first a desert environment, then a marsh, and lastly an ocean environment.

    C. The area was first an ocean environment, then a marsh, and lastly a desert environment.

    D. The area was first a desert environment, then an ocean, and lastly a marsh environment.

40. **The discovery of fossilized coral reefs on land is evidence that**

    A. salt water changes coral into fossils.

    B. the reefs formed in a freshwater lake.

    C. the sea level has changed over time.

    D. coral reefs can form on dry land.

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