

Earth Science Chapter 10: Fossils

Answer the following questions by circling the letter of the correct answer. Answers that cannot be read will be counted as incorrect.

1. A _____ is a hollow area in sediment in the shape of an organism or part of an organism.
 - a. mold
 - b. crater
 - c. sink hole
 - d. none of the above
2. What is a fossil in which minerals replace all or part of an organism?
 - a. coal
 - b. petrified fossil
 - c. T-rex
 - d. gasoline
3. What provide evidence of the activities of ancient organisms?
 - a. an agenda planner
 - b. carbon film
 - c. mold
 - d. trace fossils
4. What is the name given to a scientist that studies fossils?
 - a. volcanologist
 - b. psychologist
 - c. paleontologist
 - d. biologist
5. What is the gradual change in living things over long periods of time?
 - a. evolution
 - b. fossilization
 - c. decay
 - d. all of the above

Earth Science Chapter 10: The Relative Age of Rocks

Define the following terms. Answers that cannot be read will be counted as incorrect.

1. What is the relative age of a rock? _____

2. What is the absolute age of a rock? _____

3. What does the law of superposition say? _____

4. What is extrusion? _____

5. What is intrusion? _____

6. What is an index fossil? _____

Earth Science Chapter 10: Radioactive Dating

Answer the following questions. Answers that cannot be read will be counted as incorrect.

Use the table on Page 325 to determine which element I should use to date a particular fossil. Circle **all** of the radioactive elements that can be used.

1. The fossil is 12 million years old.

- a. carbon-14
- b. potassium-40
- c. rubidium-87
- d. thorium-232
- e. uranium-235
- f. uranium-238

2. The fossil is 750 years old.

- a. carbon-14
- b. potassium-40
- c. rubidium-87
- d. thorium-232
- e. uranium-235
- f. uranium-238

3. The fossil is 1 million years old.

- a. carbon-14
- b. potassium-40
- c. rubidium-87
- d. thorium-232
- e. uranium-235
- f. uranium-238

4. What happens during radioactive decay? _____

5. What is a half-life? _____

Earth Science Chapter 10: The Geologic Time Scale

Fill in the blanks in the table below. Answers that cannot be read will be counted as incorrect.

| Era | Period | What happened? |
|-------------|---------------|---|
| Cenozoic | Quaternary | |
| | Tertiary | |
| | Jurassic | “The Age of the Reptiles” |
| | Triassic | |
| | | |
| | Permian | |
| | Carboniferous | |
| | | |
| | Silurian | |
| | Ordovician | |
| | | |
| Precambrian | N/A | Covers 88% of Earth’s history and ended 544 million years ago |

Earth Science Chapter 10: Early Earth

Answer the following questions. Answers that cannot be read will be counted as incorrect.

1. How long ago did the earth form? _____

2. What did the earth begin as? _____

3. During the first several hundred years of the Precambrian period, what began to form?

A.

B.

C.

4. What is a comet? _____

5. How old is the oldest known fossil of a single-celled organism? _____

6. Why is it important that organism in the past performed a process called photosynthesis?

Earth Science Chapter 10: Eras of Earth's History

Match the periods with the organisms that formed during that time frame. Answers that cannot be read will be counted as incorrect.

- a. Cambrian
- b. Ordovician
- c. Silurian
- d. Devonian
- e. Permian
- f. Triassic
- g. Jurassic
- h. Cretaceous
- i. Quaternary

- _____ 1. Warm-blooded reptiles appear and there is a mass extinction of many marine invertebrates occurs
- _____ 2. Modern humans evolve in Africa and giant mammals become extinct with the end of the Ice Age
- _____ 3. The first birds appear and large dinosaurs thrive
- _____ 4. There is a great "explosion" of invertebrates in the seas
- _____ 5. Land plants, insects and spiders appear while fish with jaws develop
- _____ 6. Flowering plants and snakes appear but at the end of the period, a mass extinction causes the disappearance of the dinosaurs
- _____ 7. Termed "The Age of the Reptiles" because the first dinosaurs, turtles and crocodiles appear. Mammals too.
- _____ 8. Invertebrates dominate the seas and early vertebrates start to become common
- _____ 9. "The Age of the Fish" begins with the appears of sharks and fish with scales become common plus the first amphibians appear on land

Earth Science Chapter 10: Study Guide

*** Since this chapter is so long, there will be a take home portion of the test. Directions will be given out as we get closer to the date of the test. ***

Section 1

- Definitions

| | | |
|------------------|------------------|-------------------|
| Fossil | Petrified fossil | Scientific theory |
| Sedimentary rock | Carbon film | Evolution |
| Mold | Trace fossil | Extinct |
| Cast | Paleontologist | |

- Know how fossils form, where fossils are normally found and what most fossils form from
- Know the types of fossils and how they form
- Know how some organism have been preserved and by what methods
- Know what type of scientist studies fossils and what else they do
- Know what a fossil record is
- Know what evidence fossils can provide about the past
- Know what the fossil record reveals
- Know how the fossil record supports the theory of evolution

Section 2

- Definitions

| | | |
|----------------------|-----------|--------------|
| Relative age | Extrusion | Unconformity |
| Absolute age | Intrusion | Index fossil |
| Law of superposition | Fault | |

- Be able to compare the relative age and the absolute age of a rock
- Know how the law of superposition is used to determine the relative age of a rock
- Know what else scientists study to determine the relative age of a rock and how they help to determine the relative age
- Know how index fossils are useful
- Know what characteristics a fossil must have to be useful as an index fossil

Section 3

- Definitions

| | |
|---------|-------------------|
| Atom | Radioactive decay |
| Element | Half-life |

- Know what it is called when elements break down
- Know what type of elements are considered radioactive
- Know what happens when radioactive elements decay in igneous rocks
- Know that the rate of decay of each radioactive element is constant
- Know what geologists use radioactive dating is used to determine
- Be able to use the table on page 325 to answer questions
- Be able to determine what percentage of radioactive element will be left after a certain number of half-lives

- Know what type of rock radioactive dating does not work well on

Section 4

- Definitions

Geologic time scale

Era

Period

- Know what time scale geologists use to show Earth's history and how scientists order rocks
- Know what the divisions in the geologic time scale depend on
- Know what the earliest span of time is called and the three following eras
- Know what eras are subdivided into
- Be able to place the eras in the correct order
- Know the names of the periods

Section 5

- Definitions

Comet

Continental drift

- Know the approximate age of the earth
- Know how scientists were able to determine the age of the earth
- Know how the earth took shape
- Know what formed on the surface of the earth during the Precambrian Time
- Know what type of organisms were the first to form fossils
- Know why photosynthesis is important in our history

Section 6

- Definitions

Invertebrate

Amphibian

Mass extinction

Vertebrate

Reptile

Mammal

- Know what the Cambrian Explosion is
- Know at least one example of an invertebrate
- Know what the first vertebrates were
- Know the differences between vertebrates and invertebrates
- Know during which period animals began to invade the land
- Know what some scientists believe caused the mass extinction at the end of the Paleozoic
- Know which era is called the "Age of the Reptiles"
- Know what scientists believe caused the mass extinction at the end of the Cretaceous Period
- Know what organisms did not survive the mass extinction of the Cretaceous Period
- Know what era is called the "Age of the Mammals"
- Know which period had a series of ice ages
- Know when modern humans evolved