

**Directed Reading for  
Content Mastery**

**Overview  
Clues to Earth's Past**

**Directions:** Use the following terms to complete the concept map below.

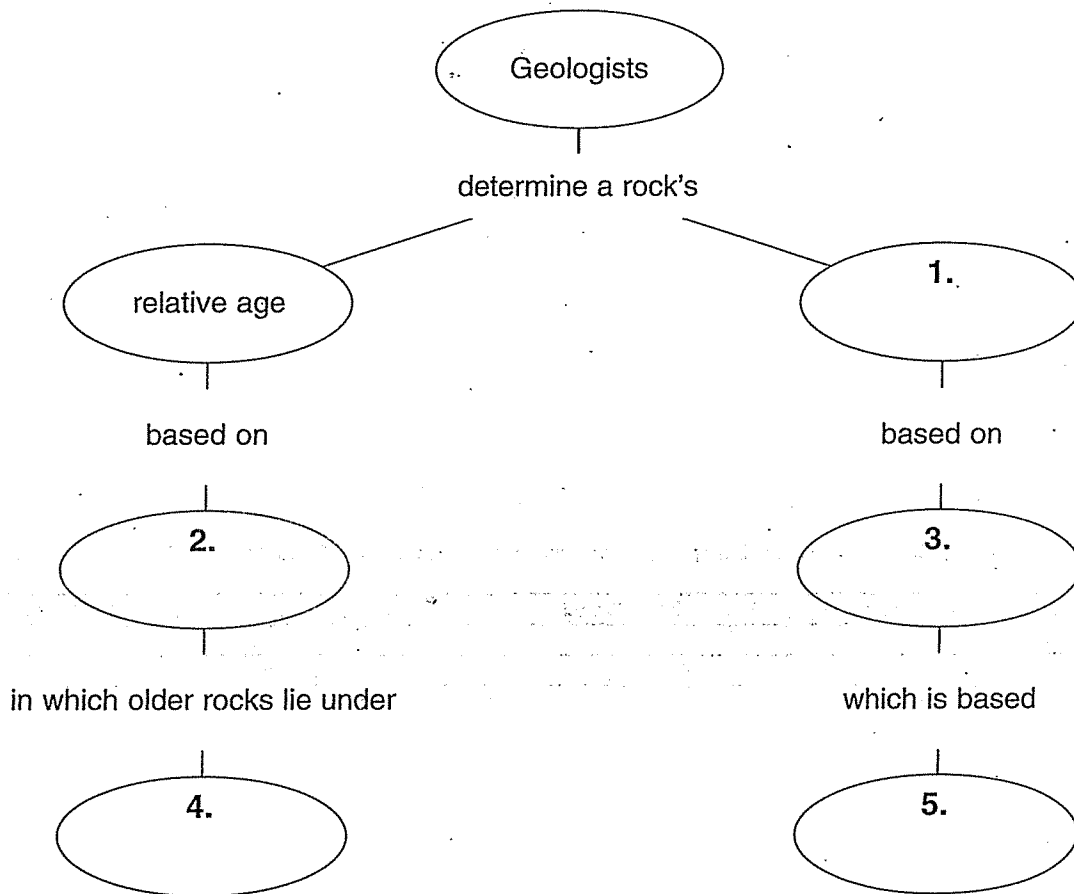
**absolute age**

**superposition**

**radiometric dating**

**younger**

**half-life**



**Meeting Individual Needs**

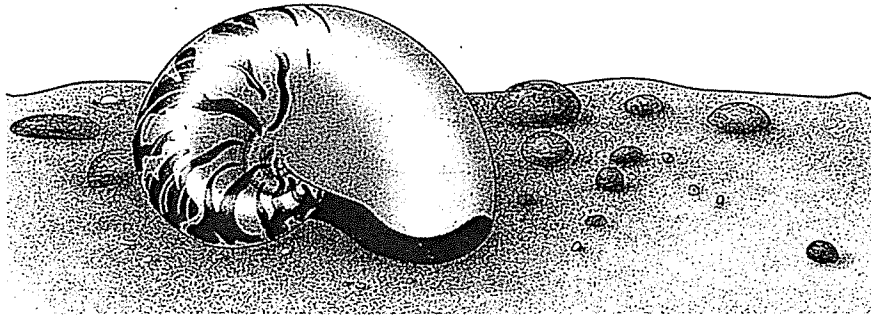
**Directions:** Circle the terms in parentheses that best complete the sentences.

6. (Permineralized remains, Carbon films) are fossils in which the spaces inside are filled with mineralized groundwater.
7. An insect trapped in amber is an example of (a trace fossil, original remains).

**Directed Reading for  
Content Mastery****Section 1 ■ Fossils**

**Directions:** Complete the following sequencing activity.

1. Put the events below in the correct sequence on the lines provided.



- \_\_\_\_\_ a. The sediment is squeezed and cemented together into rock.  
\_\_\_\_\_ b. The seashell becomes buried in sediment.  
\_\_\_\_\_ c. Other sediments fill the hollow place and harden into rock.  
\_\_\_\_\_ d. A seashell falls into the mud.  
\_\_\_\_\_ e. Someone finds the fossil of a seashell buried in sediment and rock.  
\_\_\_\_\_ f. Holes in the rock let water and air reach the seashell and dissolve it, leaving behind a hollow place in the rock.

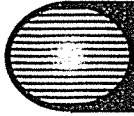
**Directions:** Match the terms in Column I with their descriptions in Column II. Write the letter of the correct phrase in the blank at the left.

**Column I**

- \_\_\_\_\_ 2. fossil  
\_\_\_\_\_ 3. cast  
\_\_\_\_\_ 4. mold  
\_\_\_\_\_ 5. index fossil  
\_\_\_\_\_ 6. carbonaceous film  
\_\_\_\_\_ 7. permineralized remains

**Column II**

- a. fossil from a species that existed on Earth for a short period of time  
b. fossil made from a thin film of carbon — atoms and molecules  
c. remains imprint, or trace of a once-living organism  
d. hard and rocklike fossil  
e. cavity left in rock by a decayed organism  
f. produced when a cavity is filled in with solid matter



## Directed Reading for Content Mastery

## Section 2 ■ Relative Ages of Rocks

### Section 3 ■ Absolute Ages of Rocks

**Directions:** In the blank at the left, write the letter of the term or phrase that best completes each statement.

- \_\_\_\_\_ 1. In layers of undisturbed sedimentary rock, the oldest rocks are on the \_\_\_\_\_.  
a. top b. bottom
- \_\_\_\_\_ 2. The statement that old rocks are on the bottom in layers of undisturbed rock is called the \_\_\_\_\_.  
a. principle of superposition b. tectonic theory
- \_\_\_\_\_ 3. Sometimes layers of rock are overturned by forces generated by \_\_\_\_\_.  
a. superposition b. mountain building
- \_\_\_\_\_ 4. Determining the age of rocks by examining their position in a layer is called \_\_\_\_\_.  
a. relative dating b. faulting
- \_\_\_\_\_ 5. Gaps in rock layers are called \_\_\_\_\_.  
a. faults b. unconformities
- \_\_\_\_\_ 6. The type of unconformity in which an erosional surface exists in one of several horizontal layers is called a(n) \_\_\_\_\_.  
a. angular unconformity b. disconformity
- \_\_\_\_\_ 7. Matching of rock layers in two different areas is called \_\_\_\_\_ the layers.  
a. concluding b. correlating
- \_\_\_\_\_ 8. One way to match rock layers that are apart is to see if the same type of \_\_\_\_\_ are found in both places.  
a. fossils b. water
- \_\_\_\_\_ 9. In absolute dating, geologists determine the age of rock by reading its \_\_\_\_\_ decay.  
a. organic b. radioactive
- \_\_\_\_\_ 10. When an isotope in the rock decays, a new \_\_\_\_\_ is formed.  
a. element b. proton



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## Key Terms

### Clues to Earth's Past

**Directions:** Match the following terms with the definitions below. Write the terms on the lines provided.

absolute age	carbonaceous film	superposition	cast
mold	unconformity	half-life	index
remains	relative	decay	dating
			uniformitarianism

- \_\_\_\_\_ 1. any gap in a rock record
- \_\_\_\_\_ 2. the remains, imprints, or traces of prehistoric organisms
- \_\_\_\_\_ 3. the thin film of carbon that shows the outline of an organism
- \_\_\_\_\_ 4. Permineralized \_\_\_\_\_ are fossils in which the spaces inside are filled with minerals from ground water.
- \_\_\_\_\_ 5. the age, in years, of a rock or other object
- \_\_\_\_\_ 6. A \_\_\_\_\_ age is something's age in comparison to something else.
- \_\_\_\_\_ 7. the time it takes for half of the atoms in an isotope to decay
- \_\_\_\_\_ 8. Radioactive \_\_\_\_\_ is the breaking down of some isotopes into other isotopes and particles.
- \_\_\_\_\_ 9. principle that says if rocks are undisturbed, older layers are under younger layers
- \_\_\_\_\_ 10. Radiometric \_\_\_\_\_ is a method used to calculate the absolute age of a rock.
- \_\_\_\_\_ 11. cavity in rock from which an organism has decayed.
- \_\_\_\_\_ 12. the principle that Earth processes occurring today are similar to those that occurred in the past
- \_\_\_\_\_ 13. fossil created when a sediment fills a mold and hardens
- \_\_\_\_\_ 14. A(n) \_\_\_\_\_ fossil is the remains of an organism that lived during a specific time that is used to define the age of a particular rock layer.

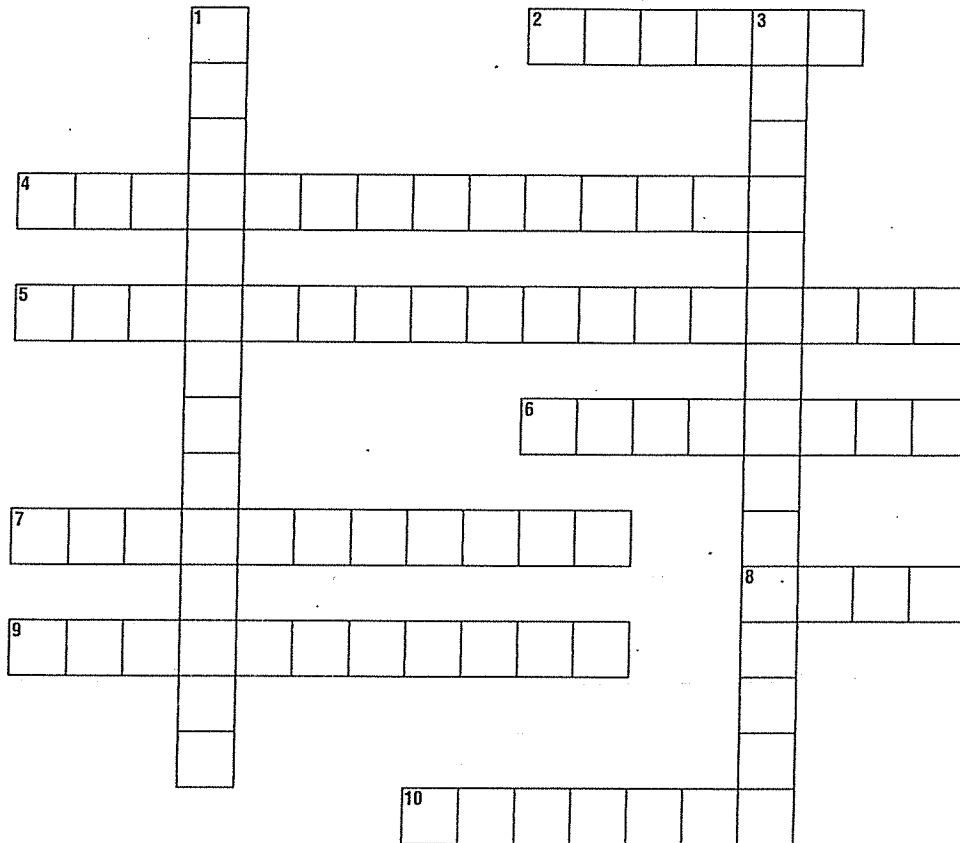


## Chapter Review

# Clues to Earth's Past

### Part A. Vocabulary Review

**Directions:** Use the clues below to complete the crossword puzzle.



#### Across

2. Element found in tissues of most organisms
4. Method using properties of atoms in rocks and other objects to determine their ages
5. Principle stating that Earth's processes occurring today are similar to those that occurred in the past
6. Time it takes for half of the atoms in a radioactive element to decay
7. Kind of decay that results in the formation of a different element
8. Cavity left in rock by a decayed organism
9. Method of dating rocks when the amounts of parent and daughter materials are measured
10. Remains, imprints, or traces of once-living organisms

#### Down

1. Gaps found in rock records
3. Actual organism or parts of organism protected from decay

## Chapter Review (continued)

### Part B. Concept Review

**Directions:** Complete the chart to describe different types of fossils.

Type of fossil	Description
1. Permineralized remains	
2. Carbonaceous film	
3. Mold	
4. Cast	
5. Trace fossils	
6. Index fossils	

**Directions:** Answer the questions on the lines provided.

7. Explain what the concept of uniformitarianism means.

DO NOT

8. How do geologists use fossils to determine rock ages? What are these fossils called?

Complete

9. Explain how a dead organism may become a fossil.