

NAME \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

## Interpreting Geologic Events

In an earlier topic you studied how various types of rocks are formed. If you know how a particular type of rock forms, then its presence in an area provides information about the past local environment. Changes in this environment with time are suggested by the presence in an area of different rock layers—one on top of the other.

Since most rock layers form at the surface, the layers are generally older the farther they are below the surface. For example, if you were to dig a hole below the surface and pass through a layer of sandstone and then a layer of shale, which layer would you expect to be the older? Can you think of any exceptions to this generalization?

In this investigation you will examine some cross-sectional diagrams showing the rock layers beneath the surface at several locations. From your observations you will attempt to describe the sequence of geologic events that occurred.

**Problem:** How can you determine the sequence of geologic events in an area?

**Objectives:** After you have completed this investigation, you should be able to:

1. *Determine* a possible sequence of geologic events in an area, given information about the subsurface rock layers.
2. *Determine* the relative age of several rock layers, given their relative positions below the surface.

### Vocabulary

Relative Age

Unconformity

Erosional Surface

Subsidence

Uplift

Emergence

Submergence

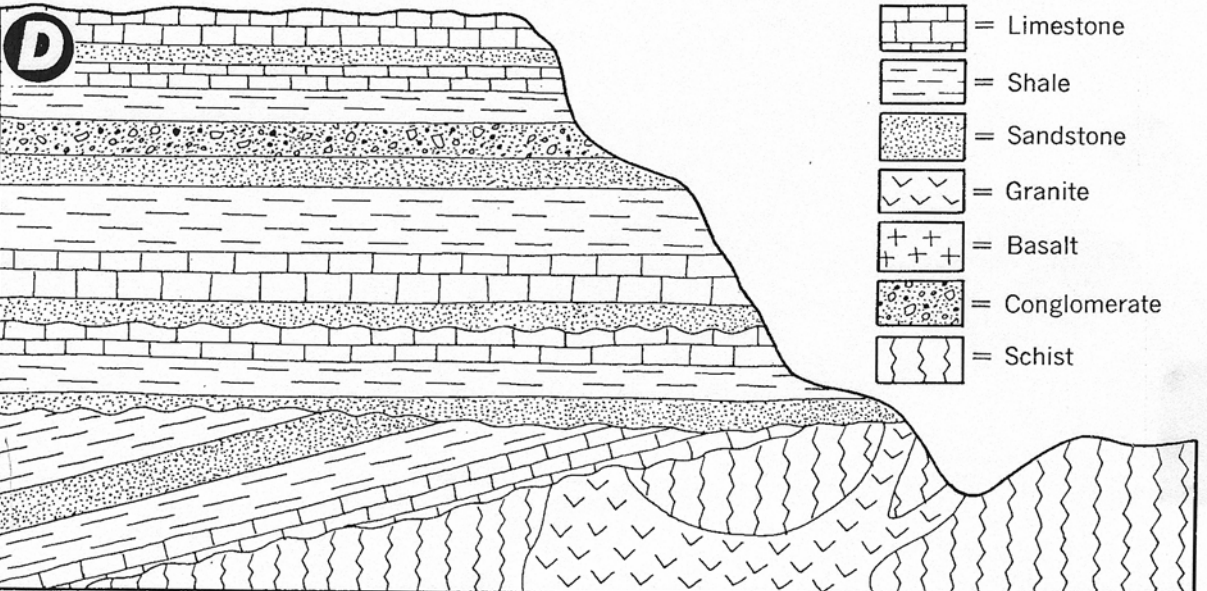
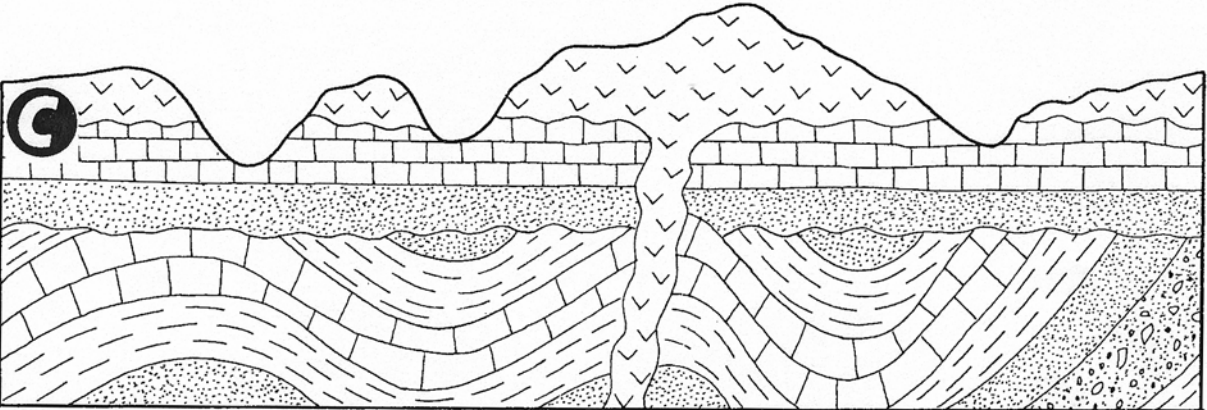
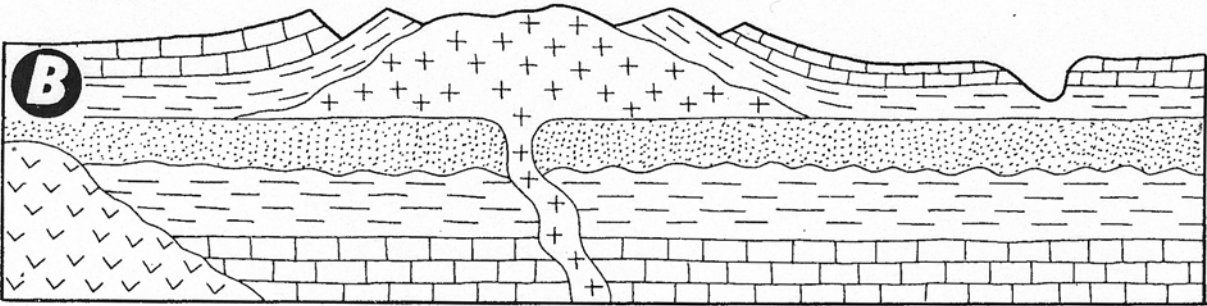
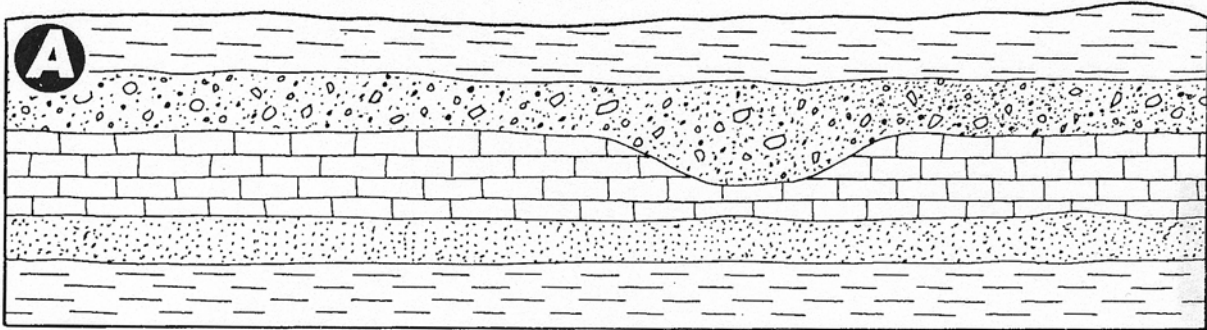
Uniformitarianism








Superposition

Original Horizontality

NAME \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

### Interpreting Geologic Events



-  = Limestone
-  = Shale
-  = Sandstone
-  = Granite
-  = Basalt
-  = Conglomerate
-  = Schist

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## Interpreting Geologic Events

### Report Sheet

<b>Cross Section A</b>		<b>Cross Section B</b>	
	<b>Event/Description</b>		<b>Event/Description</b>
(Youngest)			
(oldest)			

<b>Cross Section C</b>		<b>Cross Section D</b>	
	<b>Event/Description</b>		<b>Event/Description</b>

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## **Interpreting Geologic Events Summing Up**

**1. What assumptions do you make when you determine the relative ages of rock layers?**

**a.**

**b.**

**c.**

**2. What is a possible cause for an exception to the above rules?**

**a.**

**3. How does the age of a fold or fault compare with the age of the rocks in which it is found?**

**4. Why is an igneous intrusion always younger than the rocks in which it is found?**

**5. Explain why an unconformity indicates that a long time has passed:**

**Bonus: Print a copy of “BONUS FOR INVESTIGATING GEOLOGIC EVENTS” on website**