Use with Chapter 21 Section 21.1

# **The Geologic Time Scale**

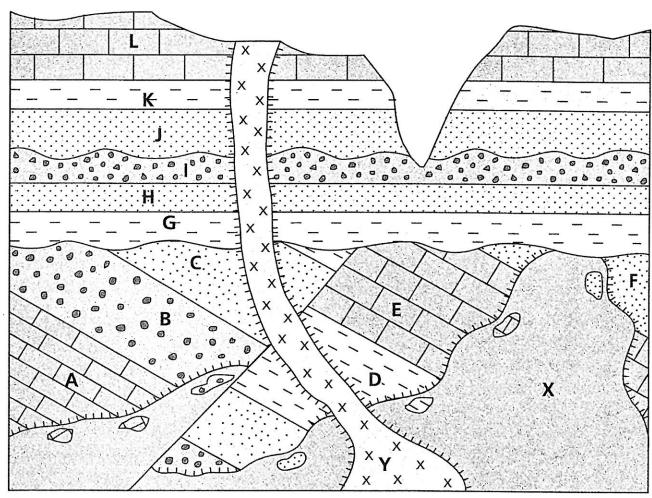
Phanerozoic Eon Cenozoic Era Quaternary Period 1.6 M.Y.B.P. Homo sapiens evolves: most Recent Holocene Epoch 0.01 M.Y.B.P. recent ice ages Pleistocene Epoch 1.6 M.Y.B.P. occur; Grand Canyon forms. Neogene Period 23 M.Y.B.P. Mammals are abundant; Pliocene Epoch 5 M.Y.B.P. angiosperms are Miocene Epoch 23 M.Y.B.P. dominant; Alps and the Himalayas Paleogene Period begin to rise. 66 M.Y.B.P. Oligocene Epoch 35 M.Y.B.P. Eocene Epoch 56 M.Y.B.P. Paleocene Epoch 66 M.Y.B.P. Dinosaurs become extinct. **Angiosperms** Mesozoic Era appear; Rocky Dinosaurs are Mountains begin dominant; first Cretaceous Period to form. birds appear; 146 M.Y.B.P. mountain First mammals, Jurassic Period building and cycads continues in 208 M.Y.B.P. appear; Atlantic western North Ocean begins to America Triassic Period form, Pangaea 245 M.Y.B.P breaks up. Many marine invertebrates Reptiles evolve; Paleozoic Era become extinct; coal swamps building of form; shallow **Permian Period** Appalachians seas begin to 290 M.Y.B.P. ends; glaciers withdraw. retreat. Pennsylvanian Period Fish are dominant; 323 M.Y.B.P. **Amphibians** first amphibians; are dominant; **Appalachians** Mississippian Period glacial advances continue to 362 M.Y.B.P. occur. form in North America **Devonian Period** Corals and other and Europe. 408 M.Y.B.P. invertebrates are dominant; Silurian Period First land plants warm, shallow 439 M.Y.B.P. form, first insects. seas cover much of North **Ordovician Period** America. First fish appear; 510 M.Y.B.P. **Appalachians** begin to form. Trilobites, **Cambrian Period** brachiopods, 540 M.Y.B.P. Ediacara other marine organisms invertebrates develop. Precambrian . are abundant; thick sediments Time Bacteria-like deposited in Proterozófic Son inland seas. organisms form; several episodes \*Millions of years 2500 M Y B.P of mountain building occur. before present Archean Eon 4600 N.Y.B.P

## **The Geologic Time Scale**

- 1. What is the geologic time scale?
- 2. What period of time is covered on the scale?
- 3. What are the four major divisions of time on the scale, from longest to shortest?
- 4. When was the Paleozoic?
- 5. During what period did reptiles evolve?
- 6. When did dinosaurs become extinct?
- 7. Which began to form first, the Alps or the Rocky Mountains?
- 8. Which organisms first appeared during the Silurian Period?
- 9. What era, period, and epoch is the present time in?
- **10.** How long ago did the Paleocene Epoch begin?

Use with Chapter 21 Section 21.2

## **Determining Relative Age**



Key

Limestone

Shale \_\_\_

Sandstone ....

Conglomerate 👨 🐾 🌡

Granite X X



TEACHING TRANSPARENCY

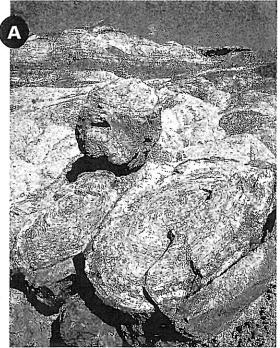
Use with Chapter 21 Section 21.2

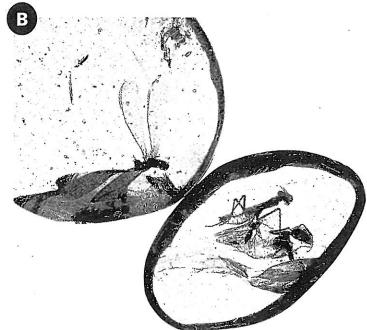
### **Determining Relative Age**

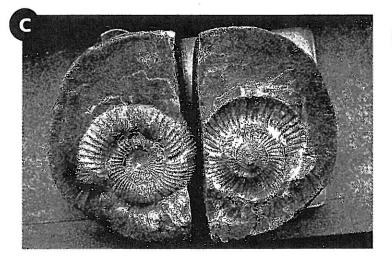
1. Which rock is the youngest? 2. Which rock is the oldest? 3. Where in the rock sequence does a disconformity occur? 4. Where in the rock sequence does an angular unconformity occur? 5. What is the relative age of the fault? Explain your answer, naming any principle you applied. 6. What is the relative age of X? Explain your answer, naming any principle you applied. 7. List the rock layers in order from oldest to youngest.

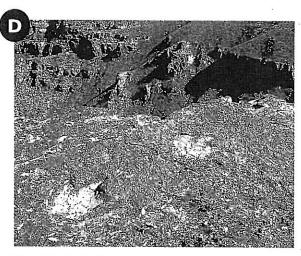
Use with Chapter 21 Section 21.4

### **Fossils**











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Transparency Master 65 Earth Science: Geology, the Environment, and the Universe 129

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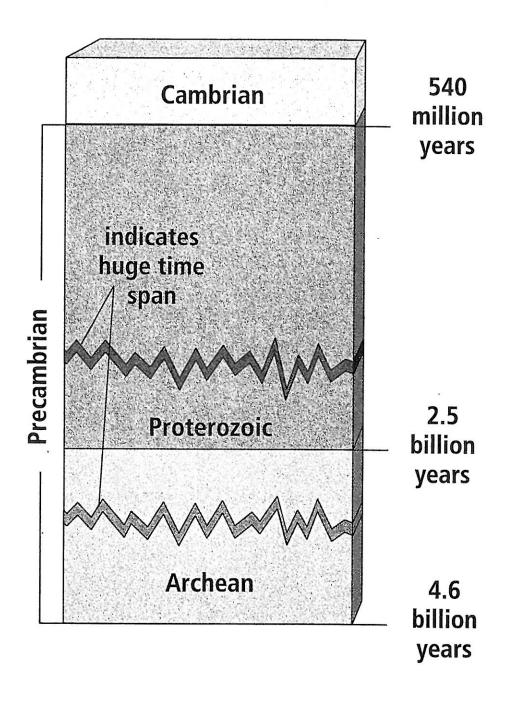
Use with Chapter 21 Section 21.4

### **Fossils**

1.	What are fossils?
2.	Which fossil(s) has original preservation?
3.	Which fossil(s) has altered hard parts?
4.	Which fossil(s) is a trace fossil? How do you think it was made?
5.	Identify the types of fossils in C and describe how they formed.
6.	What is permineralization? Which fossil(s) formed by permineralization?
7.	What is amber? Which fossil is preserved in amber?

Use with Chapter 22 Section 22.1

### **Geologic Time Scale: Precambrian**



#### **TEACHING TRANSPARENCY**

Use with Chapter 22 Section 22.1

### **Geologic Time Scale: Precambrian**

**1.** What is the time period on the geologic time scale before the Cambrian called? 2. What do the zigzag lines on the geologic time scale indicate? 3. What eons make up the Precambrian? 4. How old is Earth? **5.** What evidence have scientists considered in their attempt to establish the age of Earth? **6.** Why would the age of meteorites be similar to that of Earth? 7. How long did the Archean last? 8. When did the Precambrian end?