

Chapter 16

Use with Section 3

ENRICHMENT

● Climatic Changes

Climate and Extinction

About 65 million years ago, at the end of the Cretaceous period, dinosaurs became extinct. But they were not the only species to become extinct at that time. Up to 70 percent of all the species alive disappeared. Because so many different kinds of organisms died out, scientists do not think the cause was specific to dinosaurs, such as a disease. They think there was a general change in the environment. Climate, especially temperature, is an important influence on species' existence.

During the Age of Dinosaurs, from 240 million to 65 million years ago, Earth's climate was generally mild. Glaciers melted and ocean temperatures rose. Mountain ranges in North America and Europe eroded. A warm, shallow sea covered much of the interior of western and southern North America. A warm, shallow ocean flowed around Earth near the equator, and its currents warmed the land. The continents were closer together and nearer to the equator than they are now.

The climate of the continents began to change as they drifted apart. By the end of the Age of

Dinosaurs, the level of the oceans began to drop and the seas drained away from the land. Temperatures in the ocean went down. Many species died out when the temperature fell. Almost all the reptiles that lived in the ocean died out at this time. So did 90 percent of the plankton, tiny floating organisms that make up an important source of food to many sea animals. Many shelled sea creatures disappeared as the shrinking ocean reduced their shallow-water habitat.

Large amounts of volcanic activity also took place in the Age of Dinosaurs. Volcanic ash and dust in the atmosphere from this activity may have lowered Earth's temperature by blocking sunlight. It may have also affected Earth's climate by changing the composition of the atmosphere. This change may have increased the amount of solar radiation the atmosphere absorbed. This could have heated the atmosphere, creating a thermal imbalance and unstable weather conditions. The resulting change in Earth's environment could have affected organisms living at that time.

1. What was the climate like during the Age of Dinosaurs? _____

2. How did the climate change from the beginning of the Age of Dinosaurs to the end? _____

3. What are some factors that affected the climate during the Age of Dinosaurs? _____
