



Loma Prieta Earthquake

As a geographer, you might not be an expert on the details of the geology of the earthquakes. Similarly, you might not be an expert on the details of financing. Your perspective involves understanding these interconnections. You might use your knowledge to make suggestions for improvements; for example, to find a way to lower the death tolls and to improve precautions to lessen the damage earthquakes cause. This involves asking questions such as: What is the best way to be prepared for an earthquake? Is earthquake preparation based on national culture? Do people in Los Angeles prepare the same way as people in Japan? Do building codes vary from one city to another or even within the same city? After an earthquake, how do people respond, and do they react differently in different places? The image shows damage from the Loma Prieta, California earthquake of October 17, 1989. This was the most powerful earthquake to strike San Francisco since 1906. Lasting only 20 seconds, the earthquake resulted in the deaths of more than 60 people and injuries to about 2,700. But for San Francisco's building codes, the death rate could have been much higher -- considering that the earthquake's epicenter was around 60 miles south of San Francisco and that the earthquake occurred at 5:04 pm, the beginning of the commuting time for the San Francisco Bay Area. About 20,500 buildings were damaged, including about 18,000 homes. More than 1,000 buildings (including 960 homes) were destroyed. The cost of the earthquake was estimated from \$6 to \$10 billion. This amount included business interruptions and damage to roadways. An elevated part of Interstate 880 in Oakland and part of the San Francisco-Oakland Bay Bridge collapsed. Almost every event has a global dimension to it. The effects of a local disaster may seem isolated at first glance, but often the worldwide interconnections become evident very quickly. For example, when an earthquake hit Taiwan on September 21, 1999, over 2,000 people were killed, and homes, buildings, bridges, and roads were severely damaged. Taiwan is a major producer of computer chips. But electrical power disruption stopped manufacturing production and other business operations, resulting in significant financial losses. The impact extended to banks and other financial institutions that had invested in the businesses and facilities, and to insurers. Global computer production was seriously affected, as the loss of electrical power stopped manufacturing of some computer chips for more than a week. With some types of computer chips in short supply, their price increased worldwide. Financial and social repercussions thus extended beyond the immediate site of the earthquake. Similarly, the Loma Prieta earthquake's effects extended beyond the physical borders of the earthquake waves which stretched from California through to Nevada. The earthquake's impact was unique in that it occurred a few minutes before the third game of the World Series. Thus Loma

Prieta has the distinction of being the only earthquake to have prevented a World Series baseball game from being played. (In turn, the 1989 World Series is the only one to have been interrupted by an earthquake!) After the earthquake, the United States Geological Survey and other organizations worked together to develop better ways to prevent damage from and even to predict the probabilities and locations of future earthquakes. They analyzed the patterns of destruction and the scientific data recorded. Scientists now better understand how the shaking caused by earthquakes affects buildings and roads. Recommendations of better construction patterns are included in the national highway-bridge code and the national building code. Although these codes are not laws, they are used for guidance by local authorities across the United States. The importance of earthquake preparedness and better communication has been emphasized and increased public/private partnerships of civic organizations, businesses, government agencies, universities, and local schools. *Using the image, answer the following questions:*

WorldView Software: World Geography

ART: Question 1

Look at the image of the earthquake damage in California. Describe how you might have felt if you had experienced the earthquake and its damage.

Question 2

Think of another type of natural disaster, such as a volcano or flood. Explain how it has global implications.

Question 3

Why do people live where they know an earthquake might occur?

Question 4

Explain how an electrical power outage is a problem that involves geography.

Question 5

Choose a city that is in danger of an earthquake. Find out what precautions it has taken to minimize damage to the buildings and roads, and to ensure the safety of people.