

# LESSON 3 **GOAL** Describe natural disasters

## **BEFORE YOU READ**

- VOCABULARY** • Adjectives of severity Read and listen. Then listen again and repeat.
- WARM-UP** Have you or someone you know experienced a natural disaster? What kind of disaster was it? How severe was it? Tell the class about it.

mild  
moderate  
severe  
deadly  
catastrophic

## **READING**

### **EARTHQUAKES**

Earthquakes are among the deadliest natural disasters, causing the largest numbers of casualties, the highest death tolls, and the greatest destruction. In 1558 in China, the deadliest earthquake in history killed 850,000 people. But many other earthquakes have caused the deaths of more than 200,000 people, and it is not unusual, even in modern times, for an earthquake death toll to reach 20,000–30,000 people with hundreds of thousands left homeless and with countless injured. The floodwaters of the 2004 tsunami in Sumatra, which killed over 250,000 people, were caused by a catastrophic earthquake.

There are four factors that affect the casualty rate of earthquakes: magnitude, location, quality of construction of buildings, and timing.

**MAGNITUDE**  
The magnitude, or strength, of an earthquake is measured on the Richter scale, ranging from 1 to 10, with 10 being the greatest. Earthquakes over 8 on the Richter scale are often deadly, and those over 9 are generally catastrophic, causing terrible damage.

**LOCATION**  
A severe earthquake that is located far from population centers does not cause the same damage as a less severe one that occurs in the middle of a city. As an example, in 1960, the strongest earthquake ever recorded, 9.5 magnitude on the Richter scale, struck in the Pacific Ocean near the Chilean coastline, destroying buildings, killing over 2,000, and injuring another 3,000 in regional cities near the coast. The location of this earthquake, far away from a population center, however, prevented it from being catastrophic, with hundreds of thousands of deaths.

**QUALITY OF CONSTRUCTION**  
Modern building construction techniques can lessen the death toll and economic impact of a moderate earthquake that would otherwise cause severe destruction of older-style buildings.



Port-au-Prince, 2010

In 2010, a terrible earthquake in Port-au-Prince, the capital of Haiti, caused the destruction of a tremendous number of the city's buildings, mostly due to poor construction. In contrast, an even stronger earthquake later that year in Chile caused less destruction because of that country's use of earthquake-resistant construction.

**TIMING**  
Finally, the time of occurrence of an earthquake can affect the number of deaths and casualties. Earthquakes that occur in the night, when people are indoors, usually cause a greater death toll than ones that occur when people are outdoors.

Year	Place	Magnitude
1960	Valdivia, Chile	9.5
1964	Alaska, U.S.	9.2
1994	Sumatra, Indonesia	9.1–9.3
1872	Kamoharui, Russia	9.0
1811	Tokachi region, Japan	9.0
1817	Arica, Chile	8.9
1932	Sumatra, Indonesia	8.5–8.7
1995	Kobe/Japan	8.6
2010	St. Peter, Chile	8.8
1792	Pacific Ocean/U.S. / Canada	8.5–8.7

## **PARAPHRASE** Rewrite the statements in your own words, changing the underlined word or phrase.

- The magnitude of an earthquake is measured by the Richter scale.
- There are four factors that affect the casualty rate of an earthquake.
- Good construction techniques can lessen the danger to people in buildings affected by an earthquake.
- Damage is often due to poor construction.
- If an earthquake occurs near a major population center, more people will be affected.

66 UNIT 5

## **CONFIRM FACTS** Answer the questions, according to the information in the Reading. Use indirect speech.

- Where did the deadliest earthquake in history take place?  
*1. The article said the deadliest earthquake in history took place in...*
- Which earthquake had the highest recorded Richter-scale reading?
- How can location affect the death toll of an earthquake?
- What else can lessen the destruction and economic impact of an earthquake?

## **IDENTIFY CAUSE AND EFFECT** Discuss how magnitude and timing affect the casualty rate and economic impact of earthquakes. Explain your ideas by putting together information from the article.

## **NOW YOU CAN** Describe natural disasters

### **PAIR WORK** Partner A, read the fact sheet about the Indonesia typhoon. Partner B, read the fact sheet about the Bangladesh earthquake. In your own words, tell your partner about the disaster.

Date:	October 12
Place:	Indonesia and western Malaysia
Event:	Typhoon with highest winds ever recorded
Property damage:	Catastrophic destruction
Casualties:	5,300 deaths with more than 1,740 missing; 8 million affected with many homeless

Date:	September 20
Place:	Bangladesh
Event:	Earthquake
Property damage:	At least 70% of homes (12,000) destroyed.
Casualties:	630 deaths and hundreds more injured

A severe typhoon hit Indonesia on October 12. There were high winds and catastrophic property damage.

### **NOTEPADDING** Choose one of the historic disasters from the list. Find information about it on the Internet, at a library, or in a bookstore. (Or choose a disaster you are already familiar with.) Write details about the disaster on your notepad.

Date:	
Place:	
Event:	
Property damage:	
Casualties:	

**Some historic disasters**

- The San Francisco earthquake of 1906 (U.S.)
- The Bam earthquake of 2003 (Iran)
- The tsunami of 2004 (Indian Ocean)
- Hurricane Katrina 2005 (New Orleans, U.S.)
- A natural disaster of your choice: \_\_\_\_\_

### **GROUP WORK** Make a news broadcast or presentation about the disaster you researched (or one of the disasters in Exercise A above). Describe the natural disaster to your class.

#### **RECYCLE THIS LANGUAGE.**

Types of disasters	Adjectives	Features
earthquake	mild	casualties
epidemic	moderate	death toll
famine	severe	injuries
flood	deadly	property damage
landslide		
storm	catastrophic	

**Test driving (optional)**  
Find and underline three words or phrases in the Reading that were new to you. Use them in your Group Work. For example: "death toll."

UNIT 5 67