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Name: _____

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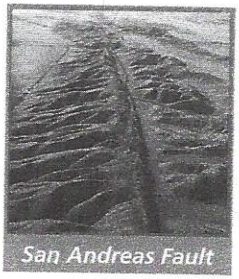
15E Passage

Read the passage. Then answer the questions that follow it.

When the Earth Quakes



San Andreas Fault

Those who have lived through an earthquake describe it as one of the worst experiences of their lives. When one strikes, often without warning, people are usually too **petrified** to move. The ground, which a few moments before seemed so solid, suddenly **lurches** beneath their feet. Pictures are shaken from the walls. If the earthquake is severe enough, the walls themselves may **topple.** Water and gas pipes burst, fires flare up, and lives may be lost.

The **intensity** of an earthquake is determined by a measure called the Richter scale. An earthquake measuring 4.0 is considered **minor,** causing little, if any, harm. One measuring 8.0 is more than one thousand times as powerful; it can do **immense** damage. Another measure of the destructive power of an earthquake is the number of lives lost. One of the greatest natural **disasters** in history was the earthquake that struck China in 1556. That earthquake killed almost a million people.

Earthquakes do the greatest damage in **urban** areas where people are heavily concentrated. Most of the deaths and injuries occur when people are inside collapsing buildings. The San Francisco earthquake of 1906 measured 8.3 and killed 450 people. In 1964, Alaska, which is more **sparsely** settled, also experienced an earthquake measuring 8.3; there were fewer than 200 deaths there.

Scientists who **investigate** the causes of earthquakes are called seismologists. They have learned a great deal about these frightening occurrences. We know that the earth's crust or surface is made of rock five to twenty miles thick. That crust is **fractured** in many places. The separate pieces, or plates, fit more or less together along the break lines, which are known as "faults." Heat from the earth's interior puts pressure on these plates, causing them to move. Sometimes they rub against each other edge to edge; at other times one plate may ride up over another. These kinds of movements cause earthquakes.

Areas that lie along faults in the earth's crust are especially **prone** to earthquakes. But quakes can occur anywhere in the world. San Francisco lies on the San Andreas Fault, where the Pacific and North American plates meet. It has had two **major** earthquakes in the last century. The Pacific coast

disaster
flee
fracture
immense
intense
investigate
lurch
major
minor
petrify
predict
prone
sparse
topple
urban

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regions of Central and South America, where the Nazca and South American plates meet, have also suffered many earthquakes and will continue to do so.

Unfortunately, we still do not know enough about earthquakes to be able to **predict** accurately when one will occur. We do, however, make sure that today's buildings and bridges are strong enough to stand up to them. That is one reason why the 1989 San Francisco earthquake, which measured 6.9 on the Richter scale, took so few lives. But earthquakes are still to be feared. If you should have the misfortune to get caught in one, your first thought might be to **flee** to the nearest open space. Experts tell us, however, that if you are in a modern building, it is probably safer to stay inside. Look for shelter under a sturdy table or in a doorway.

▶ **Answer each of the following questions in the form of a sentence. If a question does not contain a vocabulary word from the lesson's word list, use one in your answer. Use each word only once.**

1. What do seismologists do?

_____

_____

2. What do the instruments used by seismologists measure?

_____

_____

3. Why did scientists not know the 1989 San Francisco earthquake was coming?

_____

_____

4. What **urban** area is on the San Andreas Fault?

_____

_____

5. What is the meaning of **topple** as it is used in the passage?

_____

_____

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6. What might cause people to fall during an earthquake?

_____

_____

7. What is the meaning of **minor** as it is used in the passage?

_____

_____

8. How might a person describe what it feels like to live through an earthquake?

_____

_____

9. What would be the result of an earthquake in a city with many flimsy buildings?

_____

_____

10. How serious would an earthquake measuring 7.8 on the Richter scale be?

_____

_____

11. In what kind of area is an earthquake likely to do the least damage?

_____

_____

12. Why do you think streets are often flooded after an earthquake?

_____

_____

13. What is the meaning of **prone** as it is used in the passage?

_____

_____

14. How great was the loss of life in China's 1556 earthquake?

_____

_____

disaster
flee
fracture
immense
intense
investigate
lurch
major
minor
petrify
predict
prone
sparse
topple
urban

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15. During an earthquake, when is it a good idea to **flee** to an open space?

_____

_____

FUN & FASCINATING FACTS

- This is an *asterisk* (*). It looks like a star, and in fact the word comes from the Latin word for "star," which is *aster.* **Disaster** comes from the Latin prefix *dis-*, which means "against," and this Latin word for "star." But what does a disaster have to do with the stars? It was once believed (and still is, by some people) that the position of the stars had an effect on people's daily lives. If something bad (a *disaster*) happened to you, it was because the *stars* were *against* you.

  Two other words formed from this same root are *astronomy*, the scientific study of planets and stars, and *astrology*, the belief that the stars have an effect on people's daily lives.

- **Flee** and *flea* are homophones. A flea is a small jumping insect. **Minor** and *miner* are also homophones. A miner is a person who works in a mine, digging for coal, gold, or other minerals.

- If you *break* a leg, you have a **fracture.** If you drop a cup it will *break* into *fragments*. If you *break* down the number 1 into smaller parts, such as halves, you get *fractions*. Something easily *broken* is *fragile*. All four of these words come from the Latin *frangere* or *fractus*, which means "to break."

- The Latin prefix *pre-* means "before." A *premature* baby is one born *before* it is *mature* enough to leave the womb. Knowing this, and keeping in mind the explanation of *dictate* in Lesson 12 (page 137), you should be able to understand how **predict** is formed.