

What are Earthquakes?

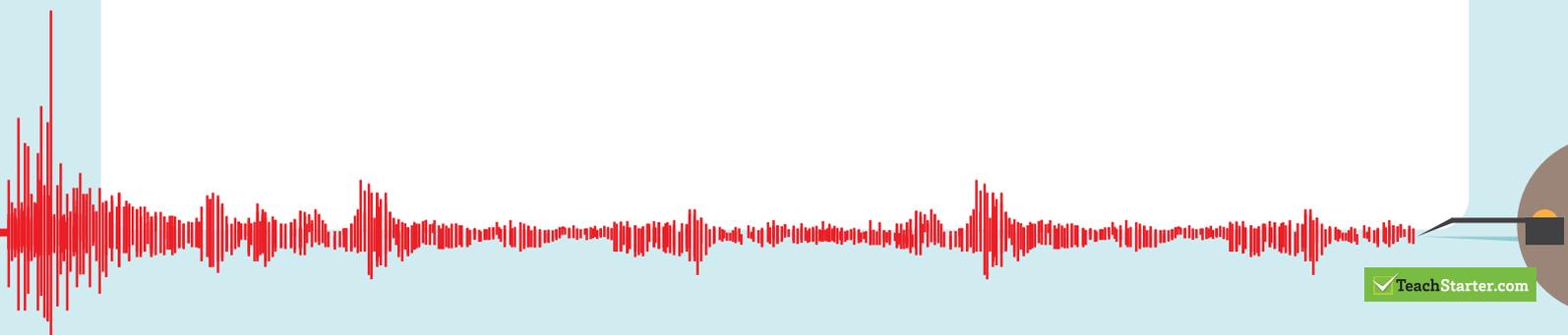
An earthquake is a sudden shaking or movement of the Earth's crust. Earthquakes occur when the moving tectonic plates that make up the Earth's surface move apart, bump into each other, or slide under each other. This movement tears apart the surface of the Earth, or crunches it up. Usually, this results in some minor shaking for a few seconds, and nothing very serious happens. However, there are occasions when these plate movements cause major shaking, and the resulting earthquake can have very serious consequences.

When two tectonic plates suddenly move or collide, seismic waves (vibrations which carry energy) move outwards from that point. This original point where the earthquake began is called the focus. Since the focus is usually deep below the surface of the Earth, the location of the earthquake is often referred to as the point on the Earth's surface directly above the focus. This point is called the epicentre.

Sometimes, there are smaller shocks that occur before (foreshock) and after (aftershock) a main earthquake. Sometimes foreshocks are so big that scientists are unsure if it is the actual earthquake. Foreshocks and aftershocks can occur for days, weeks and even months before and after a main earthquake.

So how can the magnitude of an earthquake be measured? Geologists use an instrument called a seismograph to measure the strength of the seismic waves created by an earthquake. This then enables the size of the earthquake to be measured using the Richter scale. The Richter scale rates earthquakes on a scale ranging from 0 to 9. An earthquake rated 1 on the Richter scale might hardly be felt on the Earth's surface; but an earthquake rated 2 is ten times as strong as an earthquake rated 1; and an earthquake rated 3 is ten times as strong as an earthquake rated 2 (and so on). It is likely that most people will feel an earthquake with a rating of 5. In an earthquake with a rating of 8, many buildings will fall down and people's lives will be at serious risk.

Scientists have not yet discovered a way of predicting exactly when and where an earthquake will occur. However, they do know that earthquakes occur along fault lines and we know where these fault lines are. People who live in earthquake-prone areas must be well-educated about earthquakes. They must be prepared, learn how to stay safe and know how to respond quickly when they occur.



What are Earthquakes?

Read the passage about earthquakes, then answer the questions below.

An earthquake is a sudden shaking or movement of the Earth's crust. Earthquakes occur when the moving tectonic plates that make up the Earth's surface move apart, bump into each other, or slide under each other. This movement tears apart the surface of the Earth, or crunches it up. Usually, this results in some minor shaking for a few seconds, and nothing very serious happens. However, there are occasions when these plate movements cause major shaking, and the resulting earthquake can have very serious consequences.

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Scientists have not yet discovered a way of predicting exactly when and where an earthquake will occur. However, they do know that earthquakes occur along fault lines and we know where these fault lines are. People who live in earthquake-prone areas must be well-educated about earthquakes. They must be prepared, learn how to stay safe and know how to respond quickly when they occur.

Name: _____

Date: _____

Questions

1) When do earthquakes occur?

2) Why is the location of an earthquake usually referred to as the epicentre?

3) How are seismographs useful in measuring the magnitude of an earthquake?

4) Can scientists predict when and where an earthquake will occur? Why/why not?

5) Decide whether the following statements are true or false.

- | | |
|--|--------------|
| a) Tectonic plates bumping into each other can cause an earthquake. | True / False |
| b) The original point where an earthquake began is called the collision point. | True / False |
| c) Foreshocks are only ever very small. | True / False |
| d) An earthquake rated 8 on the Richter scale is life-threatening. | True / False |
| e) Scientists are aware of where fault lines exist around the world. | True / False |

Answers

1) When do earthquakes occur?

Earthquakes occur when the moving tectonic plates that make up the Earth's surface move apart, bump into each other, or slide under each other.

2) Why is the location of an earthquake usually referred to as the epicentre?

Since the focus is usually deep below the surface of the Earth, the location of the earthquake is often referred to as the point on the Earth's surface directly above the focus. This point is called the epicentre.

3) How are seismographs useful in measuring the magnitude of an earthquake?

Seismographs are used to measure the strength of the seismic waves created by an earthquake. This then enables the size of the earthquake to be measured using the Richter scale.

4) Can scientists predict when and where an earthquake will occur? Why/why not?

Despite knowing that earthquakes occur along fault lines and where these fault lines are, scientists have not yet discovered a way of predicting exactly when and where an earthquake will occur.

5) Decide whether the following statements are true or false.

- | | |
|--|-------|
| a) Tectonic plates bumping into each other can cause an earthquake. | True |
| b) The original point where an earthquake began is called the collision point. | False |
| c) Foreshocks are only ever very small. | False |
| d) An earthquake rated 8 on the Richter scale is life-threatening. | True |
| e) Scientists are aware of where fault lines exist around the world. | True |