

Science Virtual Learning 4th Reducing Impacts Earthquakes

April 8, 2020



4th Grade Science Lesson: April 8, 2020 Learning Target

Students will be able to generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans

Background: This is a review lesson from second quarter.

- Students learn to design solutions to weather related hazards 3rd grade
- Students understand the relationship between the needs of different plants or animals Kindergarten

Let's Get Started:

Watch Videos:

- 1. Brainpop: Earthquakes
- 2. <u>Dr. Binocs: Earthquakes</u>

Practice #1: Earthquakes

Watch the read aloud "Earthquakes"

Earthquakes

Then discuss the questions with a family member:

- 1. What causes an Earthquake?
- 2. What happens to buildings during an Earthquake?
- 3. How are people building structures to withstand Earthquakes?

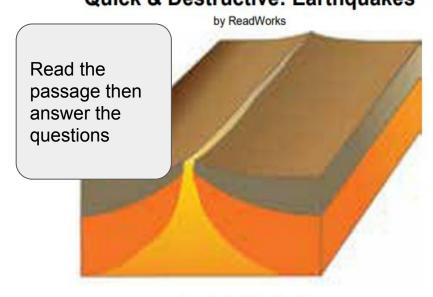


Illustration Credit: Core Knowledge

Illustration of tectonic plates moving apart

Earthquakes are natural disasters that are caused by the movement of the Earth's surface. The Earth has a few layers, and its top layer is its rocky crust. The crust is broken up into large pieces called tectonic plates. These plates move all the time. They usually move slowly, but sometimes two tectonic plates get stuck together. When these two tectonic plates finally move away from each other, energy is released. This release of energy causes an earthquake. If a small amount of energy is released, it will be a small earthquake. Most earthquakes are small. If a large amount of energy is released, it will be a large and powerful earthquake.



Photograph of destroyed buildings after earthquake

Earthquakes usually last for 30 seconds or less. Even though earthquakes are quick, they can be very destructive. Strong earthquakes can ruin homes, towns, bridges, roads, and more. Earthquakes can also kill people. For example, scientists believe that one earthquake in China killed more than 830,000 people. Scientists have studied the earth and found that this earthquake happened on January 23, 1556.



Earthquakes are very hard to predict, so it is hard to know when they are going to happen. People often don't have time to evacuate, or leave, the area. People can prepare their homes for an earthquake, however. One of the things that people can do is buy canned food and bottled water. This food and water could help people stay alive if they get trapped in their homes. It is important that people place this food and water in a safe place. Another thing that people can do is nail down any tall and heavy furniture. The ground shakes during earthquakes, which often causes furniture to fall. By nailing down furniture, like bookcases, it is harder for the furniture to hurt someone during an earthquake.

1. According to the text, what causes earthquakes? A. the movement of Earth's surface ... sometimes two tectonic plates get stuck together. When these B. natural disasters two tectonic plates finally move away from each other, energy is released. This release of energy causes an earthquake. C. the ground shaking D. nailing down furniture [...] The text describes the way earthquakes can be destructive. How can they be Earthquakes are very hard to predict, so it is hard to know when destructive? they are going to happen. People often don't have time to A. Earthquakes usually last for up to 30 seconds, so they are quick. evacuate, or leave, the area. B. Earthquakes can be small, or they can be large and powerful. What inference can you make based on the text? C. Earthquakes can ruin homes and towns, and they can kill people. A. People always know when two stuck tectonic plates will finally move away from each D. People don't have time to evacuate because it is hard to know when they will happen. other. B. People don't know when two stuck tectonic plates will finally move away from each Read these sentences from the text. other. C. People evacuate their homes when two stuck tectonic plates finally move away from "... sometimes two tectonic plates get stuck together. When these two tectonic plates each other. finally move away from each other, energy is released. This release of energy causes D. People always know when two tectonic plates get stuck together. an earthquake. If a small amount of energy is released, it will be a small earthquake. Most earthquakes are small. If a large amount of energy is released, it will be a large 5. What is the main idea of this text? and powerful earthquake." A. An earthquake is caused by energy released when two stuck tectonic plates finally move away from each other. What can you conclude from these sentences? B. An earthquake that scientists believe occurred in China in the year 1556 killed more A. A smaller amount of energy released means a more powerful earthquake. than 800,000 people. B. The more energy that is released, the more powerful the earthquake. C. To prepare their homes for earthquakes, people can buy canned food and bottled water before earthquakes happen, and they can nail down furniture. C. A larger amount of energy released means a less powerful earthquake. D. Earthquakes are natural disasters that can be very destructive and difficult to predict, D. The amount of energy released is not connected to an earthquake's power. but people can prepare their homes for earthquakes.

Read these sentences from the text.

Practice on your own:

Disaster Master Game



Self Check:

- 1. Was this lesson?
 - **□** easy
 - ☐ just right
 - □ hard

2. Tell your family one way you reduce the impact of an earthquake.

