

Module 7: Plate Tectonics and Earth's Structure

Topic 4 Content: Earthquake Damage Notes

Introduction

Earthquake Damage

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Along with causing buildings to crumble, earthquakes can trigger other damage-inducing events such as tsunamis, landslides, subsidence, and fires. In this activity, click on each of the image thumbnails below to explore the different types of damage caused by earthquakes.



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Building and Infrastructure Damage

Earthquake Damage

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Building and infrastructure damage is very likely in a larger earthquake. In 1989, a large earthquake struck near San Francisco in California, leveling many buildings located near the epicenter of the earthquake. This same earthquake also demolished major sections of vital roadways.



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Fires

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Fires

Fire is very dangerous when an earthquake takes place. Water lines become ruptured and streets can become impassable. This makes controlling a fire near impossible. Fires can ignite when earthquakes damage power lines, gas lines, or wood-burning equipment such as heating stoves. In 1906, an earthquake located near San Francisco caused a great fire that destroyed an estimated 80% of the city.



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Landslides

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Landslides

Landslides occur during earthquakes that affect areas with steep slopes. Rock, soil, or debris moves downhill as the ground shakes, and can cause large-scale damage. In 2001, a large earthquake struck El Salvador creating the landslide shown here. This single event caused the death of an estimated 585 people.



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Tsunami

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Tsunami

Earthquakes and volcanoes underneath the ocean can trigger a tsunami, a series of waves formed from the displacement of large amounts of ocean water. A tsunami may not be noticeable in the deep ocean, but as it approaches the shore, it can quickly grow to be several meters high and cause devastating floods in coastal areas. On December 26, 2004, an earthquake off the coast of Sumatra created an ocean-wide tsunami that killed an estimated 250,000 people. This photo shows the rush of water as a tsunami hit a resort area in Thailand in 2004.



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Injury and Loss of Life

Earthquake Damage

Injury and Loss of Life

At times, earthquakes and their aftershocks can lead to a loss of human life and injury. These deaths and injuries can take part during the actual tremors or afterwards, when public works and healthcare are compromised. On January 12, 2010, a massive earthquake hit Haiti and led to 316,000 deaths, 300,000 injuries, and 1.3 million people displaced. This image shows an injured Haitian being transferred to a United States Coast Guard ship for medical aid.



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