Earthquakes

Geography Year 5

Earthquakes: How do earthquakes change the world?

Very Important Vocabulary:

Tectonic plates: Tectonic plates are huge pieces of the Earth's crust that fit together like a jigsaw puzzle. They slowly move over the soft, hot rock underneath.

Shock waves: Shock waves are powerful bursts of energy that spread out from the place where an earthquake starts. They make the ground shake and can cause buildings to crack or fall.

Plate boundaries: Plate boundaries are the edges where two tectonic plates meet. Most earthquakes and volcanoes happen along these edges, because the plates push, pull, or slide past each other.

Epicentre: Plate boundaries are the edges where two tectonic plates meet. Most earthquakes and volcanoes happen along these edges, because the plates push, pull, or slide past each other.

Seismic waves: Seismic waves are the waves of energy that travel through the Earth during an earthquake.

Pacific Plate: The Pacific Plate is one of the largest tectonic plates. It lies under the Pacific Ocean and moves past other plates, which causes lots of earthquakes and volcanoes, especially around the "Ring of Fire."

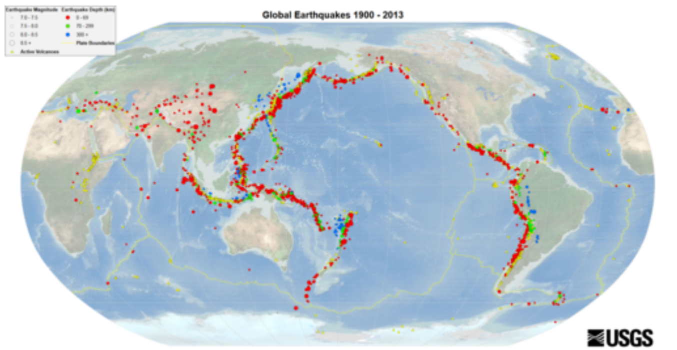
Aftershock: An aftershock is a smaller earthquake that happens after the main earthquake.

What are the effects of an earthquake?

Earthquakes can destroy buildings, roads, and power lines. They can also cause secondary disasters like tsunamis, landslides, and floods. In Japan, over 15,000 people died in 2011, and many lost their homes. Earthquakes also harm the economy by stopping transport and damaging industries.

How can people prepare for earthquakes?

People can reduce the damage from earthquakes by building stronger, flexible buildings, practising emergency drills, and using early warning systems. Countries like Japan have technology to warn people seconds before the shaking starts. Schools and communities often practise what to do during an earthquake to stay safe.



What causes earthquakes?

Earthquakes happen when huge pieces of the Earth's surface, called tectonic plates, suddenly move. These plates float on hot, soft rock beneath the surface. When the plates push, pull, or slide past each other, they can get stuck. Pressure builds up until it suddenly releases, causing the ground to shake. This movement creates energy called seismic waves.

How do scientists measure earthquakes?

Special machines called seismometers measure the shaking caused by an earthquake. The magnitude (how strong it is) is measured using the moment magnitude scale. To describe how much damage people feel or see in an area, scientists use the Modified Mercalli Intensity scale. These tools help experts understand and prepare for earthquakes.

Where do most earthquakes happen?

Most earthquakes happen near the edges of tectonic plates. The most active zone is called the Ring of Fire, around the Pacific Ocean. Places like Japan, Indonesia, California, and South America often experience earthquakes. Other areas, like the Himalayas and the East African Rift, also have regular earthquakes caused by colliding or separating plates.

Can earthquakes happen in other places too?

While most earthquakes happen near plate boundaries, some happen in the middle of plates where there are old cracks in the Earth. Earthquakes can also be caused by human activity, like mining or building large dams. These are usually smaller, but they can still cause damage.

What happened in the 2011 Japan earthquake?

In 2011, a huge earthquake struck off the coast of Japan. It was caused when the Pacific Plate slid under the North American Plate, releasing massive energy. It measured 9.0 in magnitude and caused a tsunami with waves over 10 metres high. The tsunami flooded towns and damaged a nuclear power station, causing radiation leaks.