

# Earthquakes

## The Earth's Crust

The Earth's crust and the top of the mantle have about twenty tectonic plates, which are like jigsaw pieces covering the Earth. These plates are always moving and bumping into each other. The edges of the plates are called 'plate boundaries', which are made up of faults. These faults are where most of the world's earthquakes occur. As the plates move, the edges get stuck because they are not smooth, but the rest of the plate keeps moving. When the force is too much, it slips and bumps and that causes an earthquake. A bit like when you pull something which gets caught, you pull it some more until it comes free with a big force.

## Seismograph



A seismograph (say: size-mo-graf) is a special piece of equipment that records earthquakes. Seismometers are securely fastened to the Earth, so when the ground starts to shake, the instrument's case moves too. What doesn't move is a weight that hangs on a string inside the case. When there is an earthquake, the case shakes with the ground but the weight does not, and it draws a line to show how much the ground shook.

Scientists use seismograms (graphs produced by the seismograph) to measure how big each earthquake is.

## Interesting Fact

In 2009, in a place called L'Aquila in Italy, there was an earthquake that killed 309 people. In relation to the earthquake, a case went to court and it was decided that it was the fault of six Italian scientists who should have known it was coming and warned people. They were sent to prison for manslaughter (killing someone without planning or being hateful) but argued their case and won, so they did not have to go to prison after all.

## You could try to find out:

- How earthquakes are measured.
- How easy they are to predict.
- About other cases where prison sentences have been handed out in unusual circumstances.

Can you now answer these questions about what you have read?

1. How many tectonic plates are there?

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2. What are plate boundaries?

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3. What does it mean when we say 'predicting earthquakes'?

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4. Describe what causes earthquakes.

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5. What is a seismograph?

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