

¿What to do in case of an earthquake?



BEFORE
Prepare your emergency backpack: radio, flashlight, canned food, warm clothing, water. Prepare a family evacuation plan and define a family meeting point.

Follow earthquake-resistant building standards. Seek technical advice. Use good quality materials and do not build on unstable terrains or slopes.



DURING



Don't panic!
Stay calm.
Drop, cover and hold on.

Once the movement has stopped, try to get out into an open area free of buildings or power lines.

AFTER

Always stay informed. Remember to listen to OFFICIAL SOURCES ONLY!!



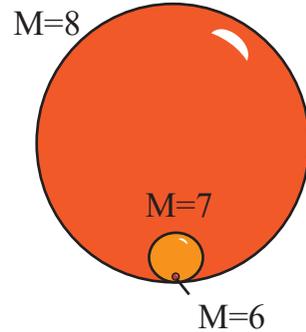
Follow the instructions of the authorities!

Myths and truths about earthquakes



Earthquakes cannot be predicted. Currently there is no technology in the world capable of anticipating the occurrence of an earthquake.

The Mexican early warning system does not predict earthquakes. It only issues an alert once the earthquake has already occurred, so that people located in areas far from the epicenter have a few seconds to protect themselves. The same thing happens with similar systems in other countries.



"It is better for earthquakes to occur, in that way, excess energy is released" This myth might be partially true. The occurrence of an earthquake does release the accumulated energy, the problem is that the necessary energy is not always fully released. For example, to match the energy of a magnitude 8 earthquake, 1024 magnitude 6 earthquakes would have to occur.

Weather changes do not generate earthquakes. There is no evidence that the weather has a direct impact on the generation or occurrence of earthquakes.



Collaborate with the IG-EPN

¿Did you feel an earthquake?
REPORT
<https://www.igepn.edu.ec/portal/eventos/informes-ultimos-sismos.html>

for more information please visit:
www.igepn.edu.ec



Why is the ground shaking? Earthquake!!

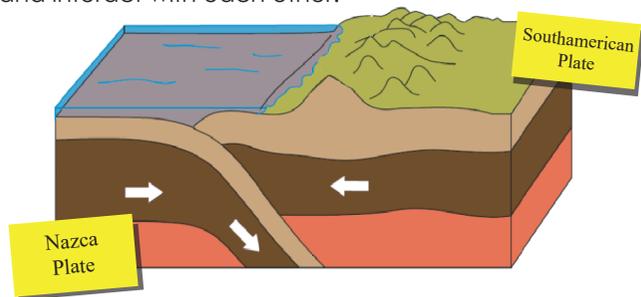


Tectonic Plates

The Earth's surface is divided into segments called tectonic plates. These plates are not static, instead they move relative to each other.

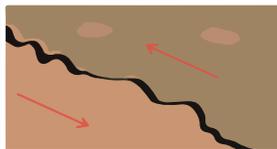


In zones like the Ecuadorian Coast, two plates converge and interact with each other.



There is a lot of friction between the plates which causes deformation and the accumulation of energy. When the plates can no longer support the amount of energy built up, that energy is violently released.

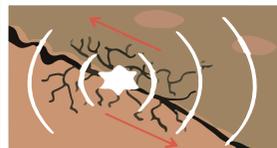
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This violent release of energy causes what we know as an earthquake.

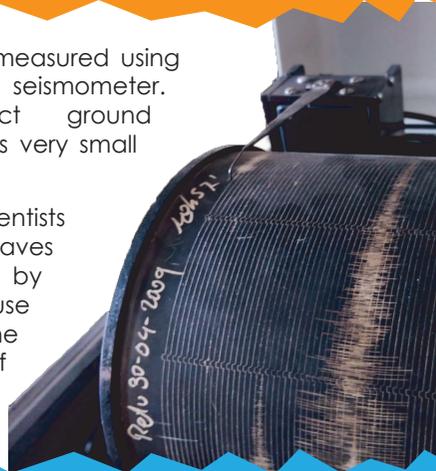
Earthquakes and Seismicity

The term seismicity is used to describe the occurrence of earthquakes with a certain recurrence within a defined region. On the other hand, the word earthquake describes a single event. "Seism" is also a synonym for earthquake.

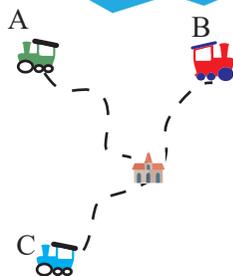
Seismometers

Earthquakes can be measured using equipment called a seismometer. Seismometers detect ground movement even if it is very small and very far away.

Seismologists are scientists who study the waves recorded by seismometers. They use that data to determine the characteristics of an earthquake.



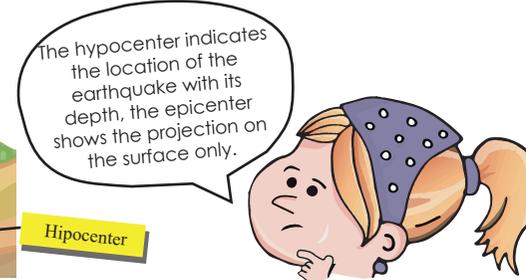
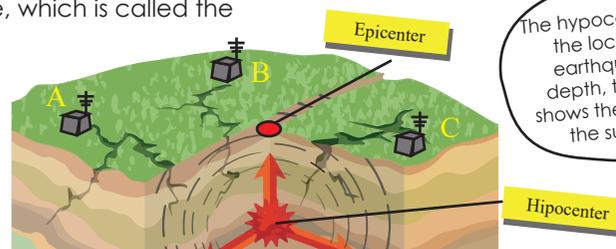
Locating an Earthquake



Imagine that several trains leave the same station and they run at a previously known speed. If we know where and at what time they arrived at their destination, can we calculate the place and time of departure? Have you heard a similar math problem? Well, this is how seismic location works.

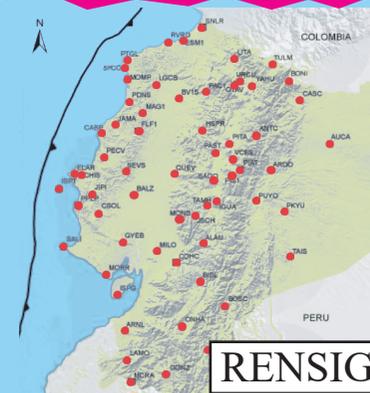
We know the speeds of seismic waves and we know the exact time they arrived at our monitoring stations. Using a mathematical calculation, we can determine the time and place of origin of the earthquake, which is called the hypocenter.

Of course there are more stations than trains in our example, so the math is more complex. That is why advanced computer systems are used.

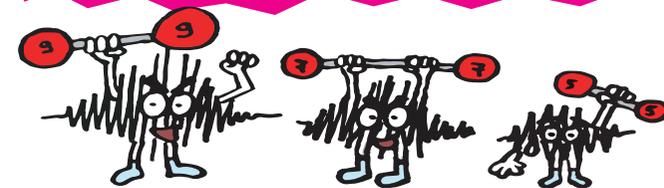


National Seismic Network

A good distribution of stations provides a more exact location. The National Seismic Network RENSIG, operated by the Geophysical Institute of the National Polytechnic School (IG-EPN), has more than 100 instruments working 24/7 to detect the earthquakes that occur in Ecuador.



Aftershocks



Aftershocks are seismic movements that occur after the main earthquake within its immediate vicinity. These earthquakes are smaller in magnitude than the main earthquake. Aftershocks allow the earthquake rupture zone to settle until it finds a new stable position.

Magnitude & Intensity

Magnitude is the scale that measures the energy released in the form of seismic waves (there are several magnitude scales). On the other hand, Intensity is a descriptive scale that measures the effects of an earthquake on people, buildings and nature. Magnitude is generally written with decimal numbers and Intensity is reported in Roman numerals.