

## Earthquakes

The Earth is made up of several layers: the inner core, outer core, mantle, and crust. The crust, which is the layer we live on, is divided into large sections called tectonic plates. These plates sit on top of the mantle, which contains semi-molten rock called magma. Heat from inside the Earth causes the magma to move in slow currents, which in turn causes the tectonic plates to drift gradually across the planet's surface.

Where two plates meet is known as a plate boundary. Boundaries can be constructive (where plates move apart), destructive (where one plate is pushed beneath another) or conservative (where plates slide past each other). It is at these boundaries that earthquakes most commonly occur.

When plates become locked together, stress and energy build up over a long period of time. Eventually, the rocks give way and the stored energy is released in the form of seismic waves. These waves travel outwards from the focus – the origin point underground. The epicentre lies on the surface directly above.

Seismic waves are detected and recorded by seismometers. The data these produce is shown as a wavy line on a seismograph. Earthquake magnitude is measured using the Richter Scale or the more modern Moment Magnitude Scale.

Countries near plate boundaries, such as Japan and Chile, experience earthquakes very frequently.

## Questions

1. Name the four layers of the Earth in order from the inside.
2. What are tectonic plates?
3. What is magma?
4. What causes tectonic plates to move?
5. What is a plate boundary?
6. What type of boundary causes one plate to push beneath another?
7. Where do most earthquakes occur?
8. What is the focus of an earthquake?
9. What does a seismograph show?
10. Why do you think countries like Japan might need to have special rules about how buildings are constructed?



Text C Quiz



Read and Retrieve