

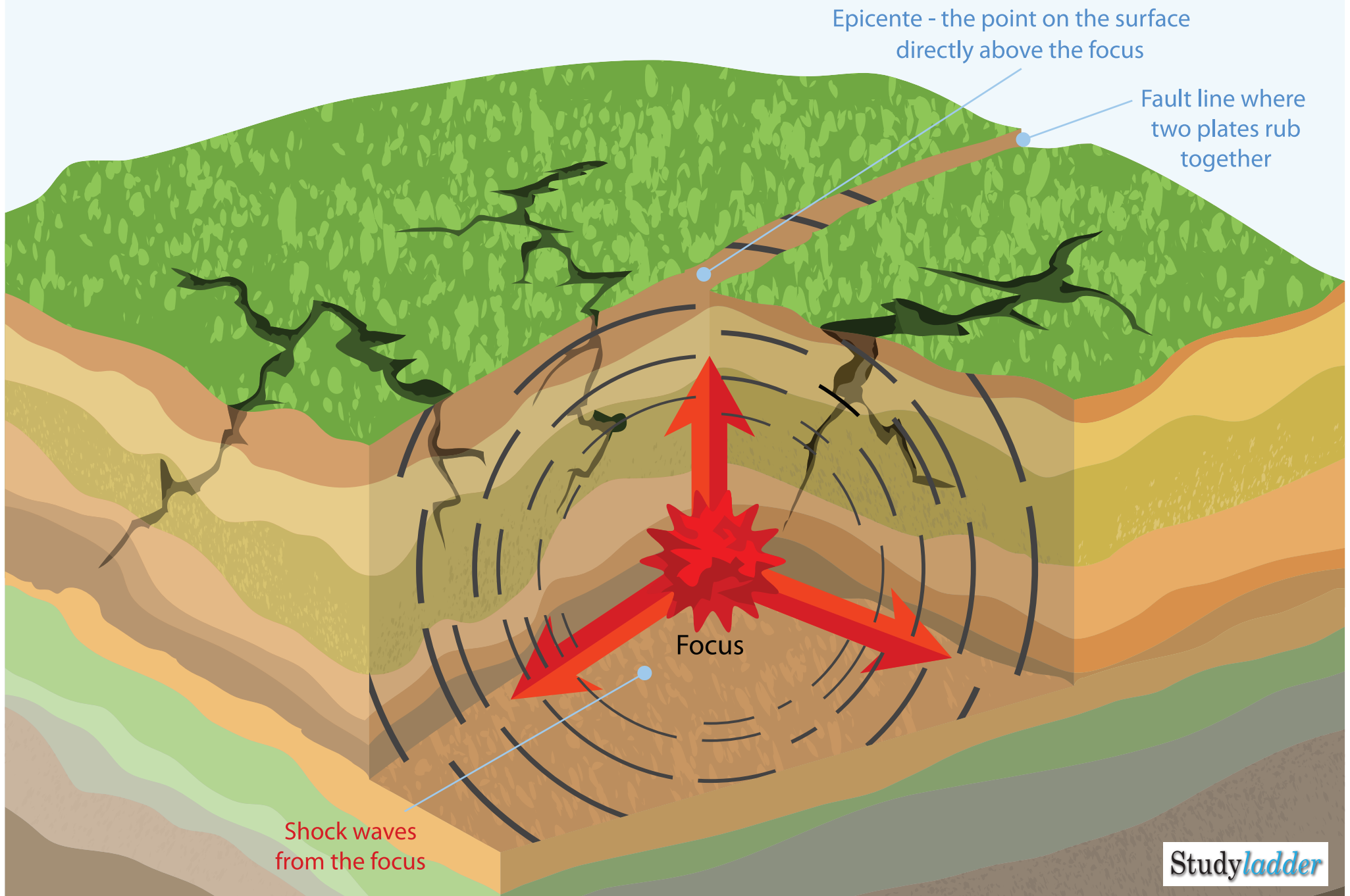
Earthquakes

Discussion Points:

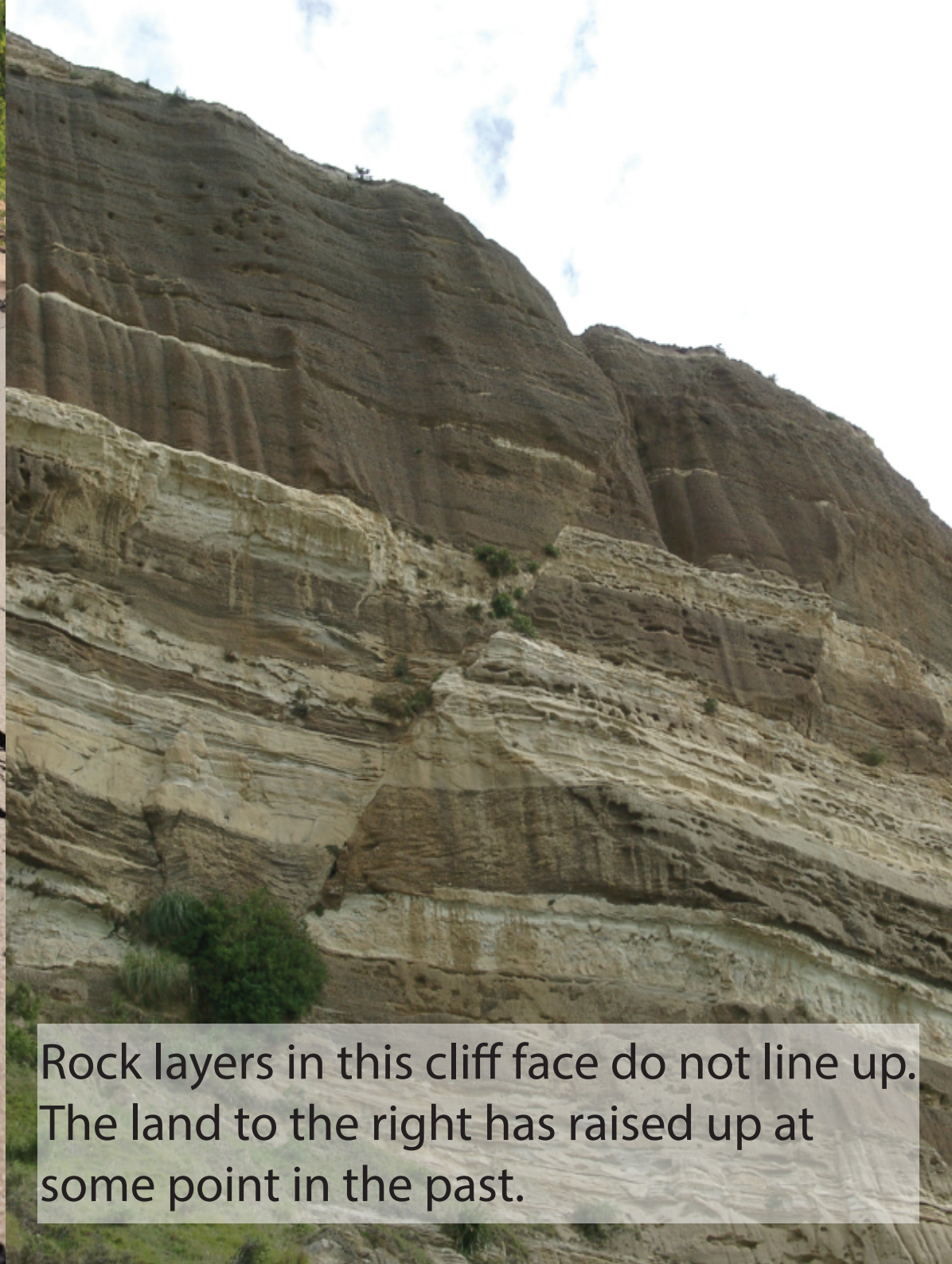


- 1) What causes an earthquake?
- 2) Where do earthquakes occur?
- 3) How are earthquakes and tsunamis related?

Earthquakes



Evidence of movement can be seen on the surface and in rock layers.



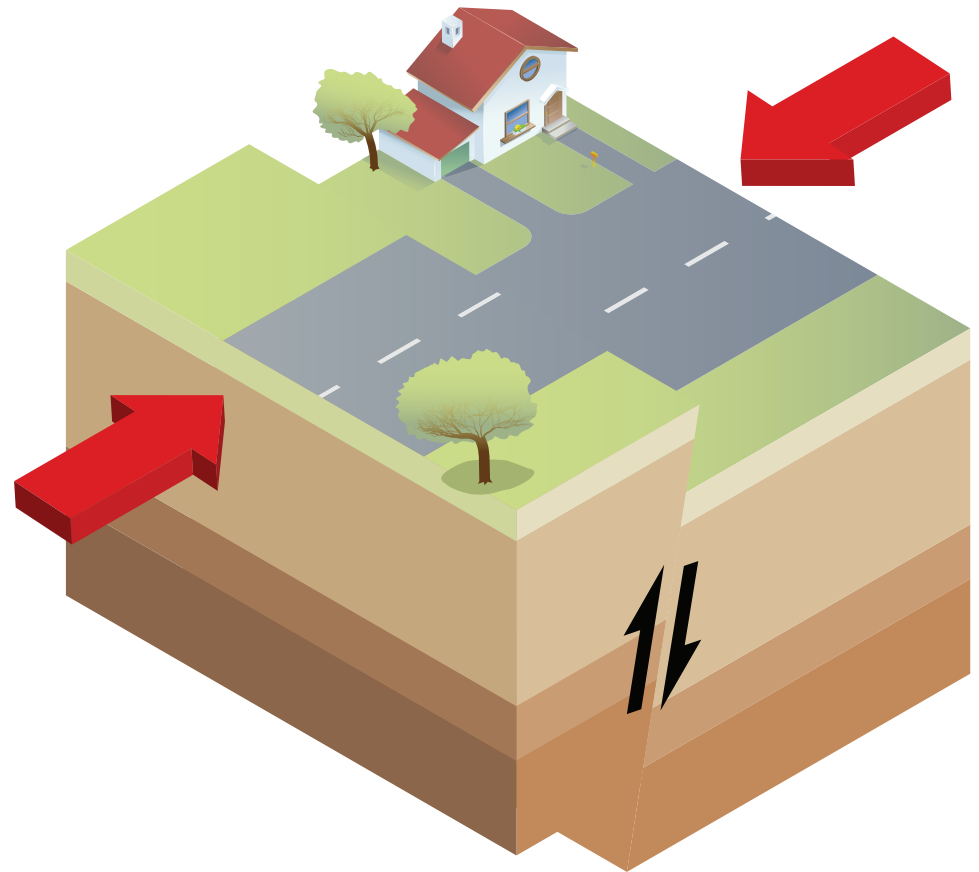
Rock layers in this cliff face do not line up. The land to the right has raised up at some point in the past.

Convergent Plate Boundaries

When two tectonic plates are moving towards each other, great pressure builds up. When the two plates shift suddenly, an earthquake occurs.

Rock layers may suddenly lift or drop during an earthquake. The shape of the earth's surface can change.

Over time, mountains may be forced upward along the boundary between the two tectonic plates.

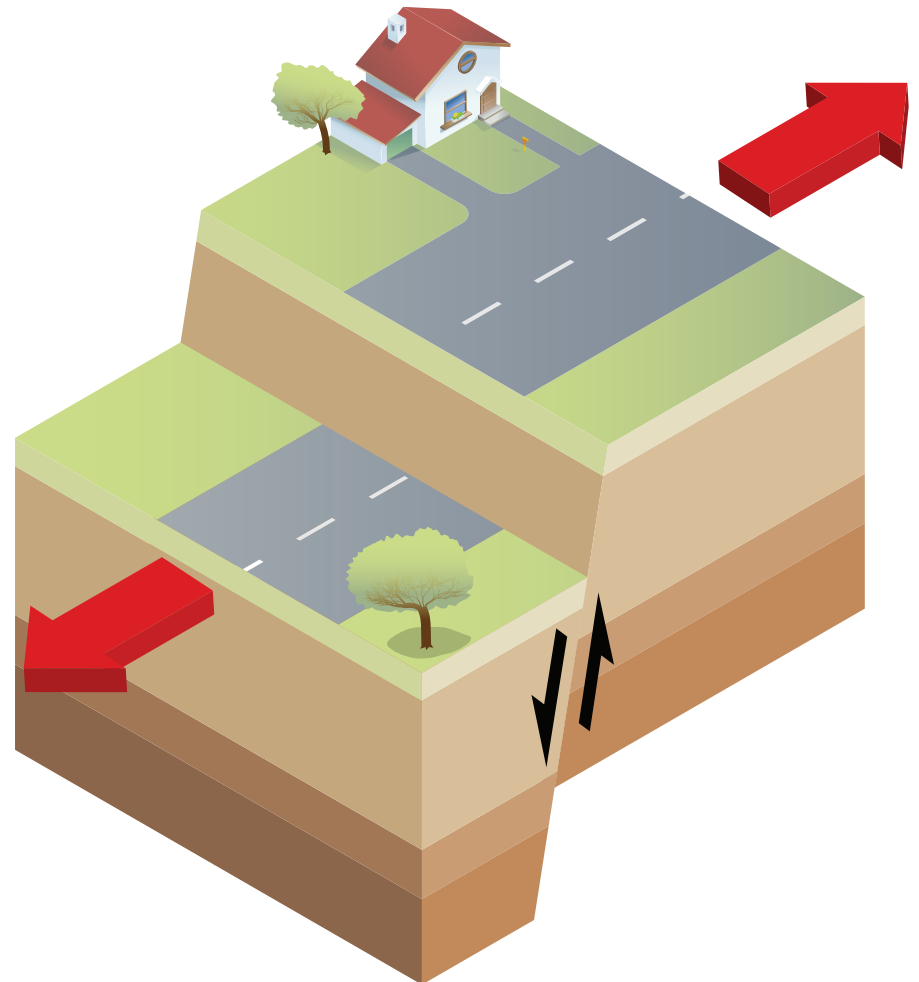


Divergent Plate Boundaries

When two tectonic plates are moving away from each other, a crack can appear between the two plates.

Most of the world's divergent boundaries are underwater. This is where a lot of volcanic activity occurs. Lava flows out of underwater volcanoes building new seabed material.

If one layer is pushing up while the other is pushing down, a sudden change in surface level can take place during an earthquake. This can also trigger a tsunami.

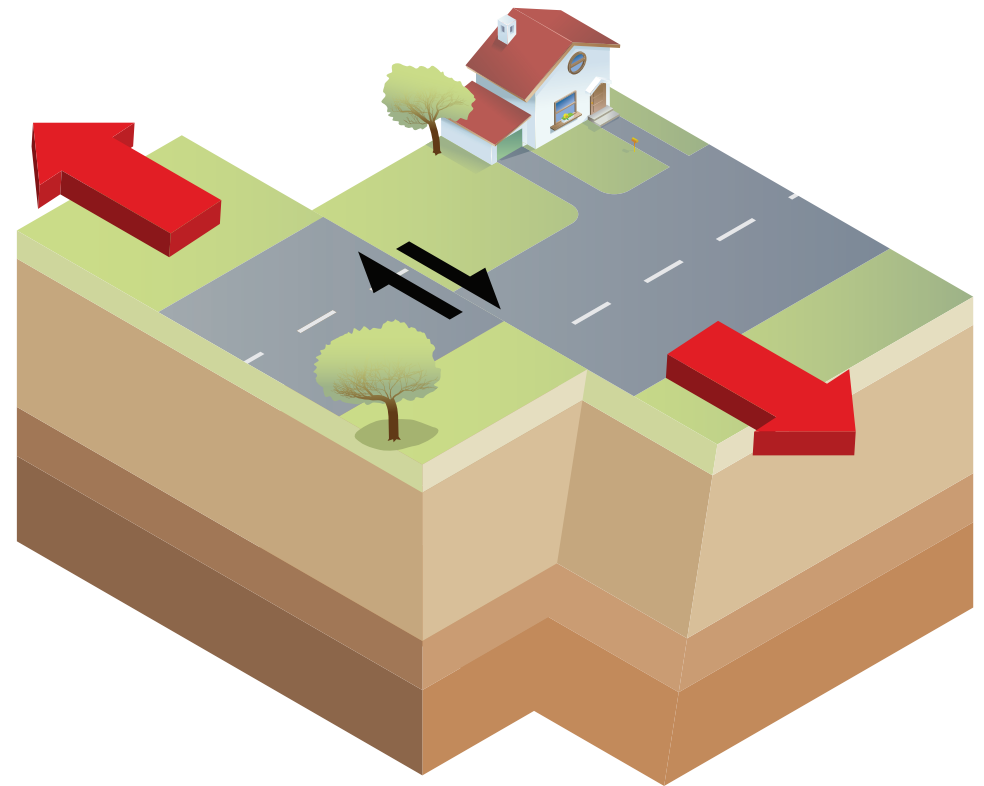


Transform Plate Boundaries

When two tectonic plates are moving side by side, a long row of debris marks the fault line. (This may look like a long row of hills.)

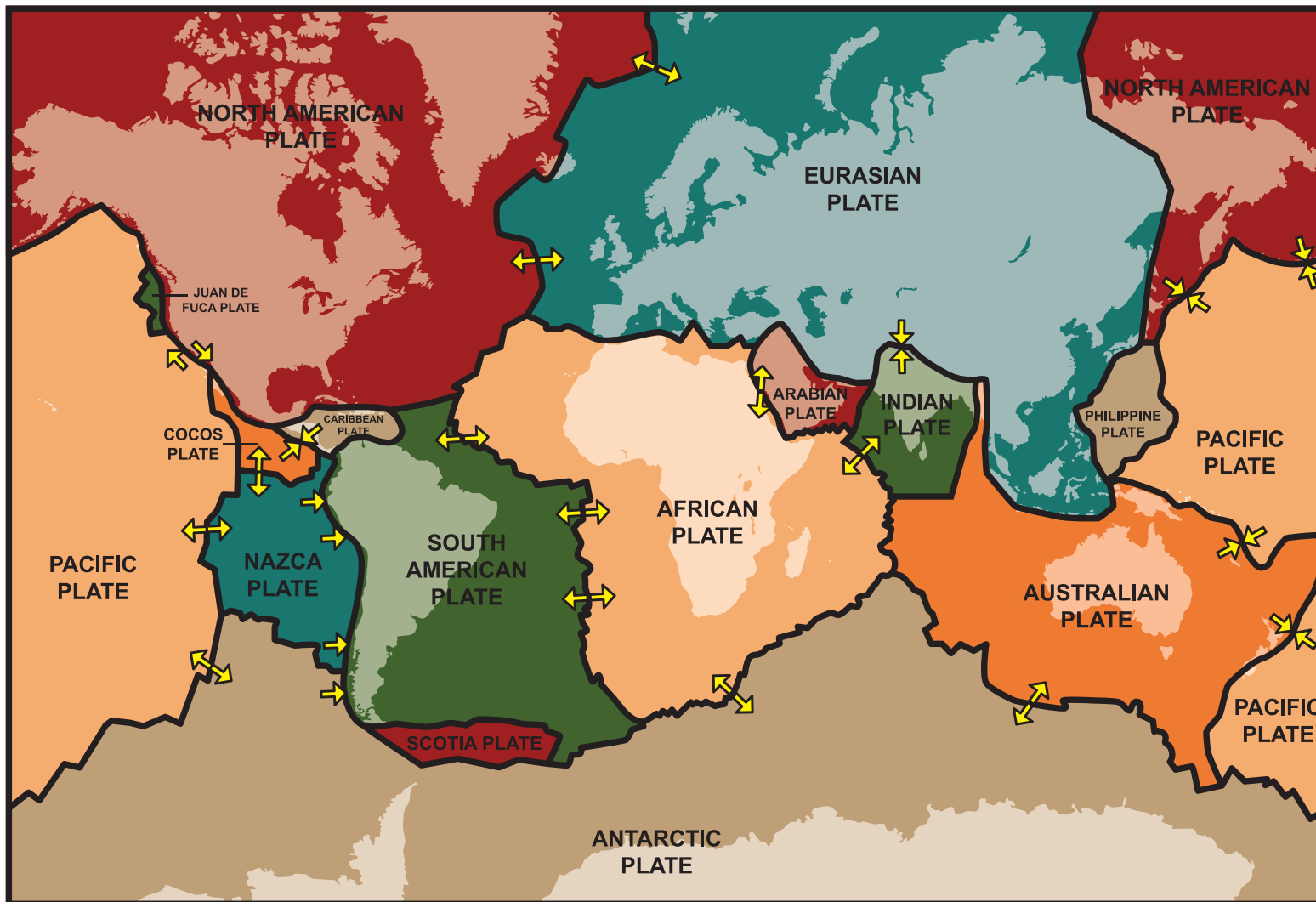
The two plates do not slide along at a constant speed. They may not move at all for a while then slip suddenly during an earthquake.

An example of this type of fault line is the San Andreas Fault in California, USA.

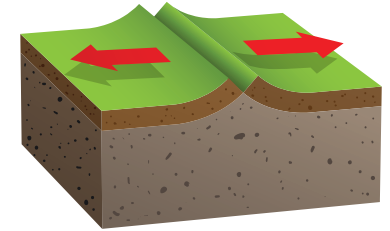


Movement of Tectonic Plates Around the Earth's Crust

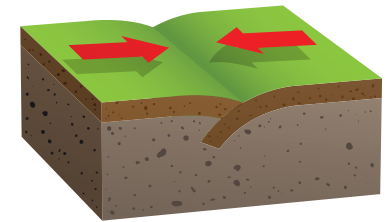
The surface of the Earth is ever changing. New rock is formed by volcanoes along Divergent Plate boundaries (many of which are under the sea). Some plates are forced down into the mantle along Convergent Plate Subduction Zones. This extremely slow process is called Continental Drift. Earthquakes occur when the pressure that has built between two plates is suddenly released.



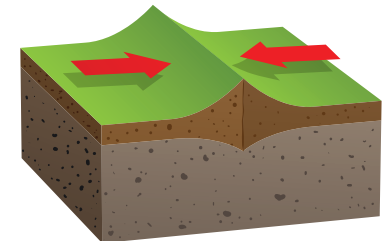
Divergent Plates
(two plates move away from each other.)



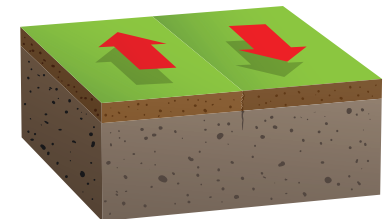
Convergent Plates
Subduction zone
(one plate moves under another and sinks into the mantle)



Convergent Plates
(plates push toward each other, forcing upward movement and mountain building)



Transform Plates
(plates slide along beside each other in opposite directions)



If an earthquake occurs under the ocean floor a tsunami could be triggered. This is a Japanese word. Tsunamis near Japan have been common throughout history.

Tsunami

'tsu' meaning 'harbour'

'nami' meaning 'wave'