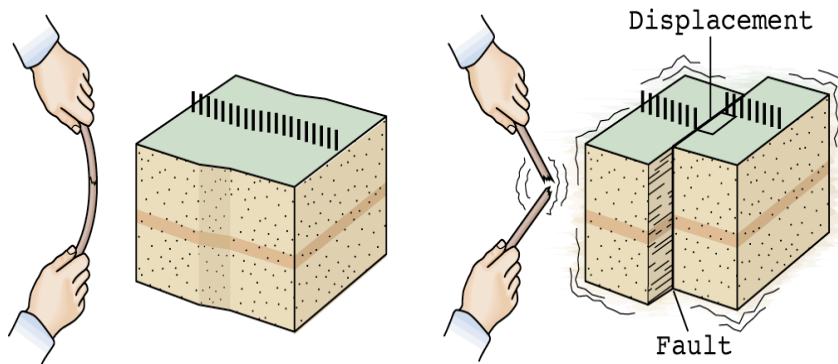


# Geological Events – Earthquakes

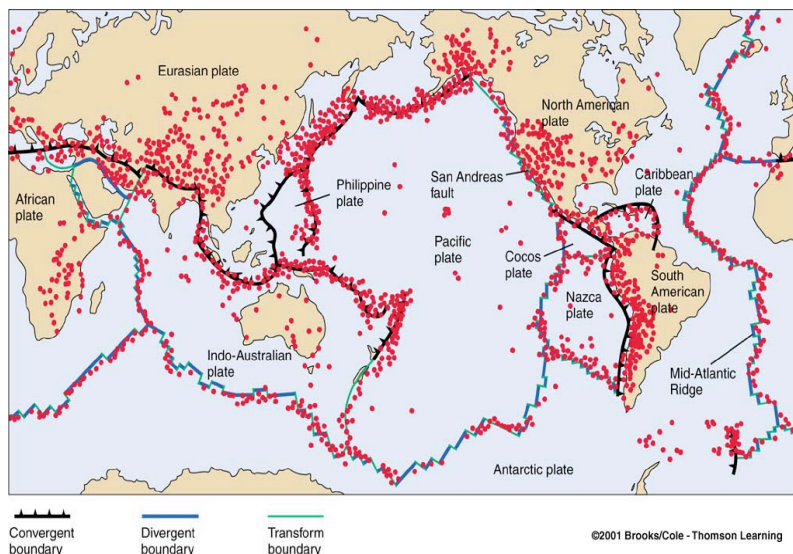
## Earthquakes – What is happening?

As tectonic plates move, they \_\_\_\_\_, bend, lift and crack; energy is \_\_\_\_\_. Tectonic forces overcome the \_\_\_\_\_ and the plates spring apart. This sudden release of energy causes \_\_\_\_\_ or trembling. Earthquakes are usually associated with \_\_\_\_\_ where the lithosphere has been displaced. As the plates continue to adjust their position, \_\_\_\_\_ result.

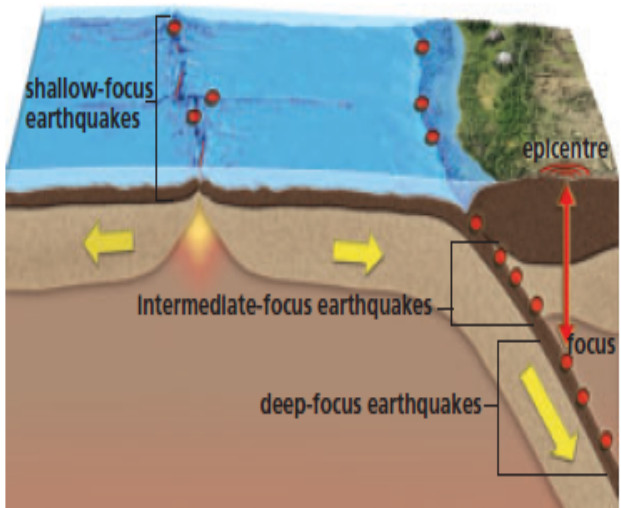
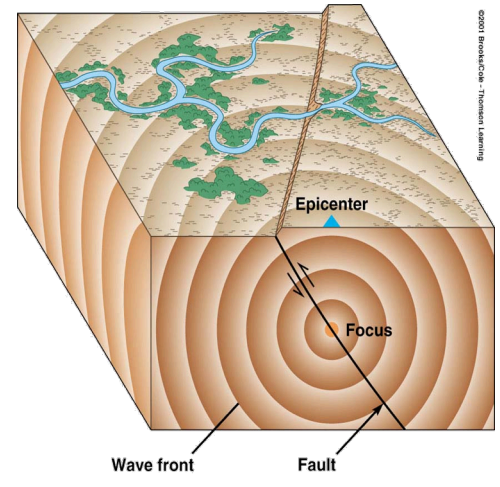


## Earthquakes – Locations

Eighty percent of all earthquakes occur in the \_\_\_\_\_. Most of these result from \_\_\_\_\_ boundary activity. The remaining occur in the \_\_\_\_\_ of plates and on diverging boundaries. More the 150,000 quakes are strong enough to be felt and recorded each year.



The point within the Earth where faulting begins is called the \_\_\_\_\_. The point directly above the focus, on the surface is called the \_\_\_\_\_.



Shallow focus earthquakes occur in the \_\_\_\_\_.

Intermediate earthquakes occur in \_\_\_\_\_ zones.

Deep focus earthquakes occur in the \_\_\_\_\_.

### Seismic Waves

Earthquakes transmit mechanical \_\_\_\_\_ in the form of seismic waves.

There are two types of seismic waves.

**Body waves** travel through a medium. Earthquakes cause two types of body waves.

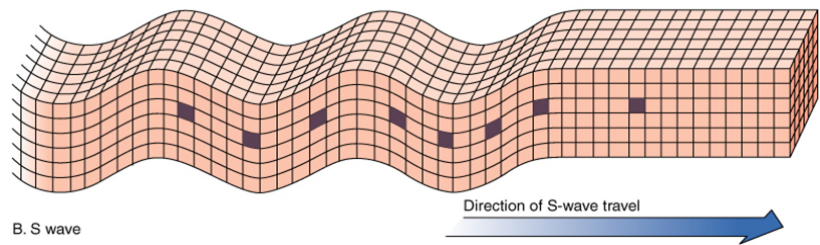
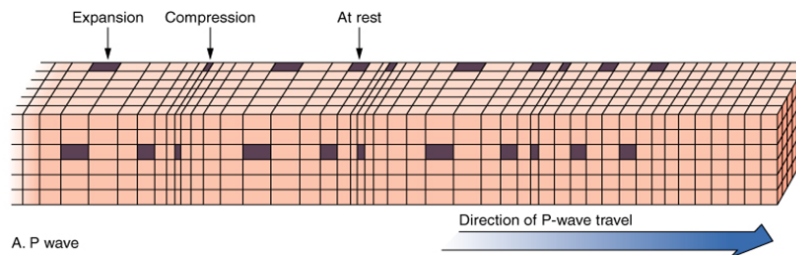
- Primary waves (P-waves), also known as \_\_\_\_\_

\_\_\_\_\_ waves, can travel through solids, liquids and gases; they pass through \_\_\_\_\_ the layers of the Earth

- o Material moves in the \_\_\_\_\_ direction as wave movement

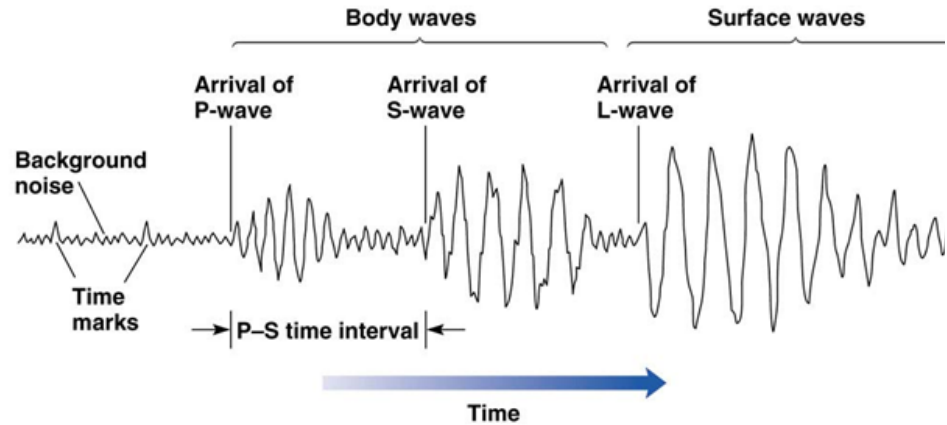
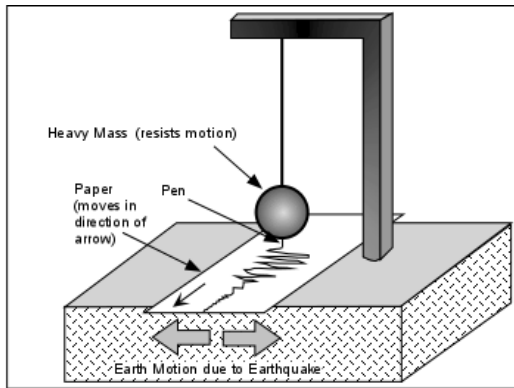
- Secondary waves (S-waves), also known as \_\_\_\_\_ waves, travel more \_\_\_\_\_ and only pass through \_\_\_\_\_ rock

- o Material moves \_\_\_\_\_ to the direction of wave movement



Surface waves travel \_\_\_\_\_ but not through the Earth and cause the most destruction.

**Seismographs record earthquake events**



- P waves arrive \_\_\_\_\_, then S waves, then \_\_\_\_\_ waves
- Average speeds of all these waves is known
- After an earthquake, the difference in arrival times at a seismograph station can be used to calculate the distance from the seismograph to the \_\_\_\_\_.

**Seismic waves and layers of the earth:**

By measuring the \_\_\_\_\_ and \_\_\_\_\_ of seismic waves scientists have learned about the \_\_\_\_\_ structure of the Earth

