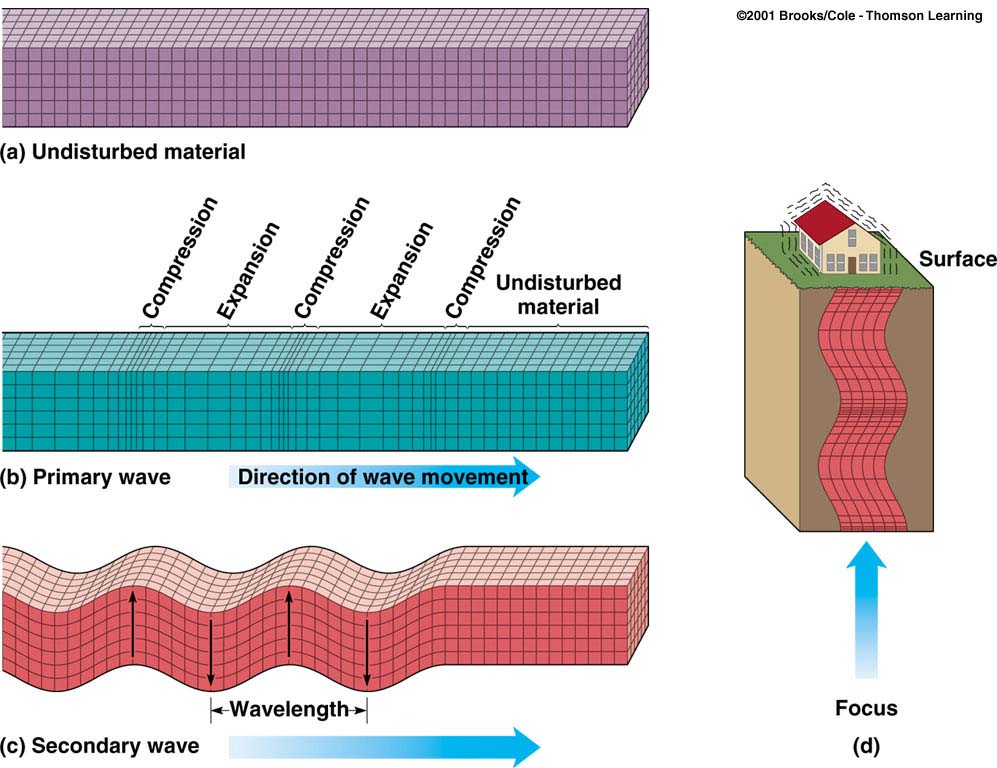
Earthquakes- Seismic Activity Name:

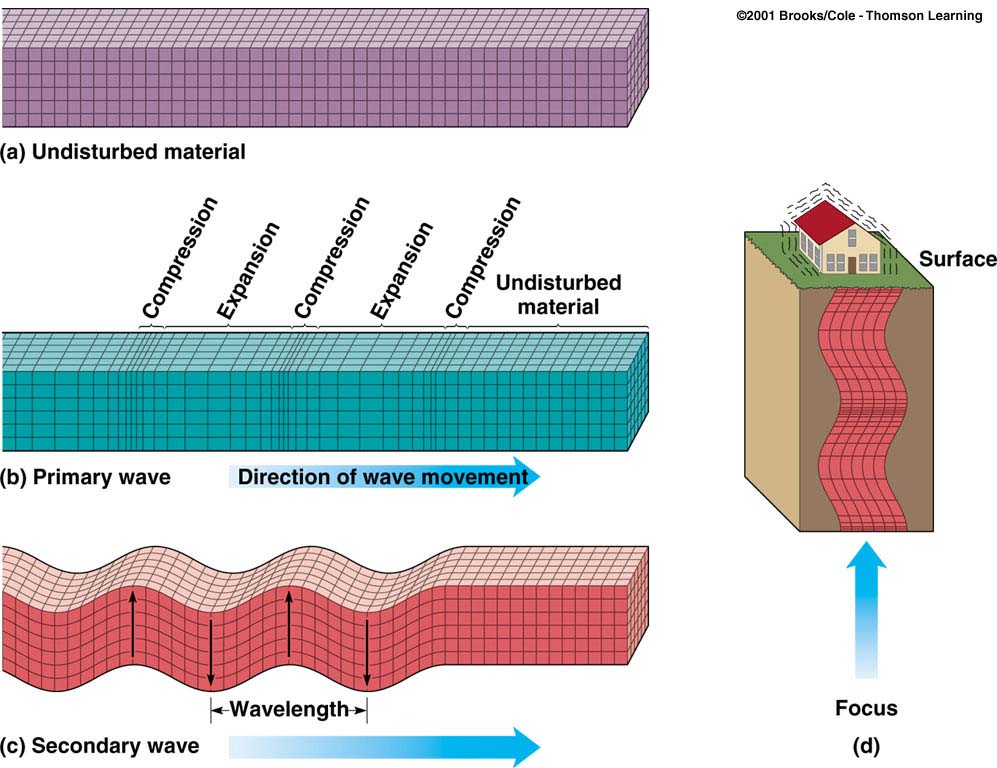
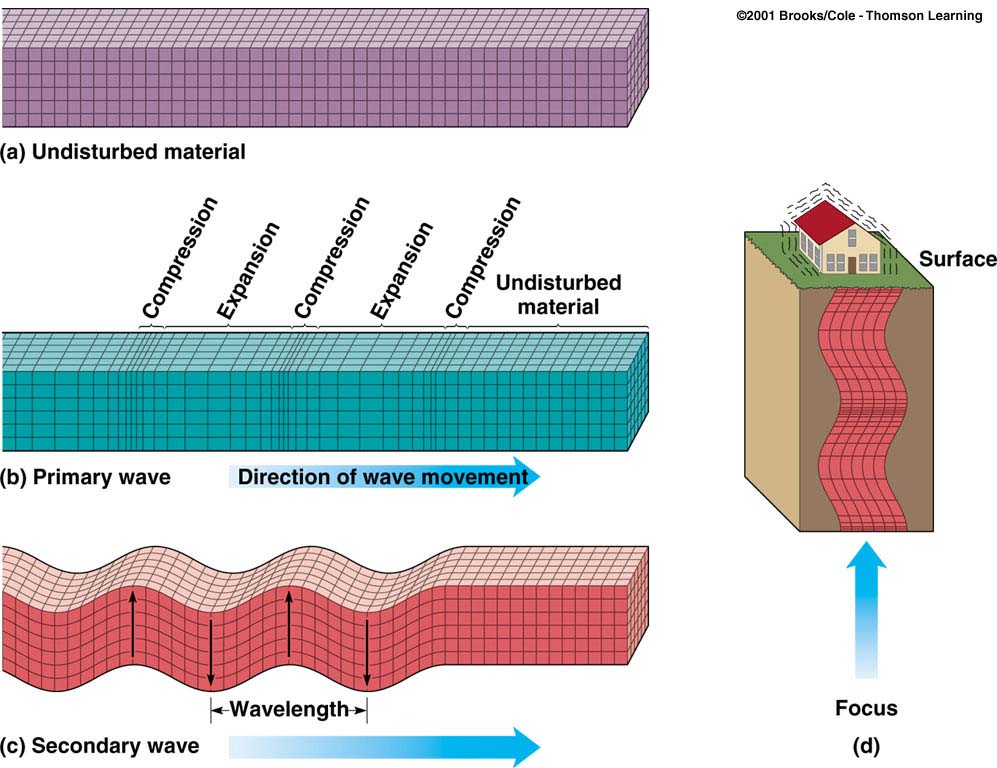
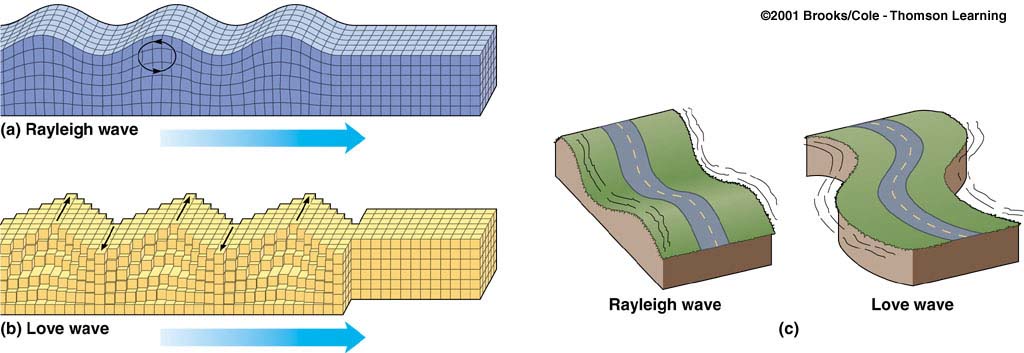
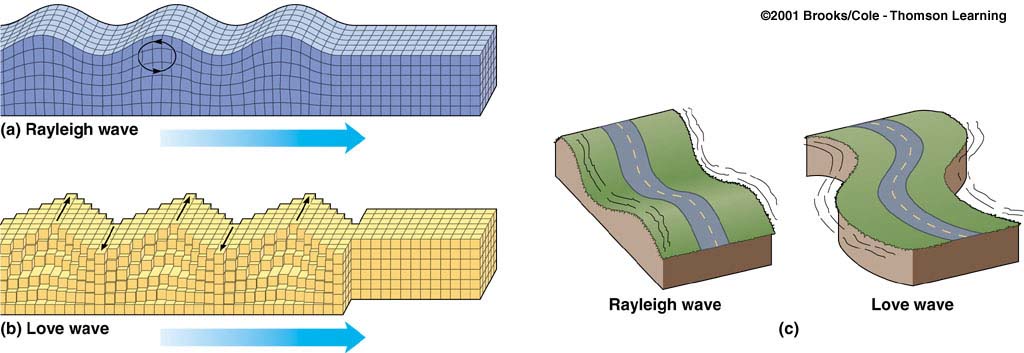
**The Focus and Epicenter of an Earthquake**

* The point Earth where faulting begins is the or .
* The point directly the focus on the is the .
* **Benioff Zone**- is an area of increasingly deeper seismic activity, inclined from the downward in the direction of the island arc.

**Where do earthquakes occur and how often?**

* 80% of all earthquakes occur along the Pacific Plate known as the -   
    
   . Most of these result from margin activity
* Approximately 15% occur in the Mediterranean-Asiatic belt
* Remaining 5% occur in the of plates and on ridge centers
* More than quakes strong enough to be are recorded each year

**What are seismic waves?**

* Response of material to the arrival of released by a rupture or in rock
* Two Types: Body waves and Surface Waves
* Body Waves
  + P-waves or .
    - Fastest waves
    - Travel through , , or
    - Compressional wave, material movement is in the as the wave movement
  + S-waves or .
    - Slower than P-waves
    - Travel through only.
    - Shear wave- move material to wave movement.
* Surface Waves- travel just below or along the surface, slower than body waves, especially damaging to .
  + Rayleigh waves-
  + Love waves- to .
* A seismograph records earthquakes events.
* A seismogram records wave and .
  + Amplitude is the maximum height in a peak.
  + Which waves have the largest amplitude?

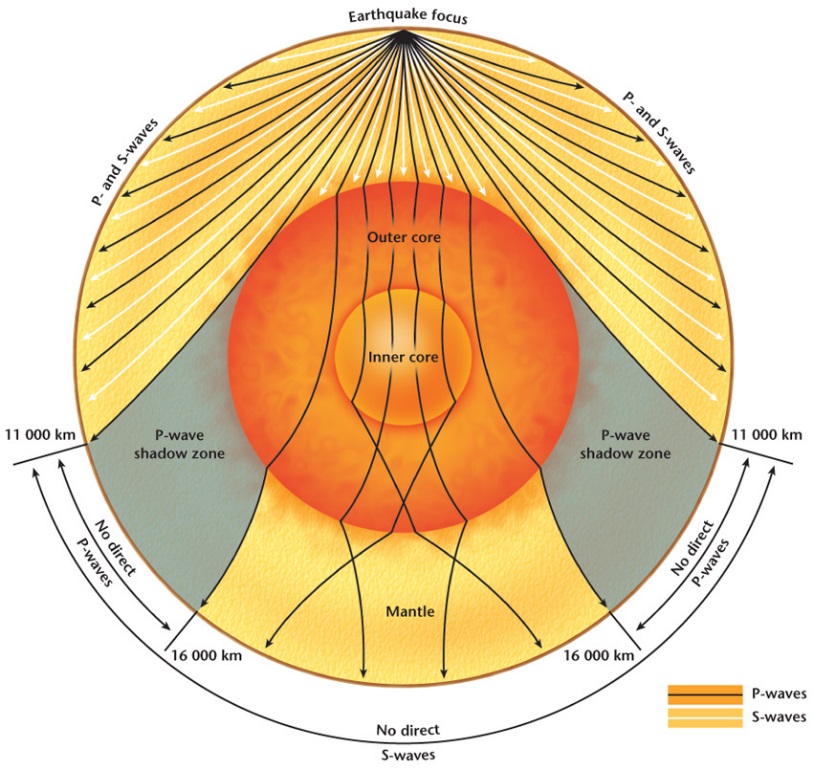
**How is an earthquake’s epicenter located?**

* Through seismic wave behavior
* P waves arrive , then S waves, later L and R
* Average speeds for all these waves is known
* After an earthquake, the difference in arrival times at a seismograph station can be used to the distance from the to the .
* Time-distance graph showing the average for P- and S-waves. The away a seismograph is from the focus of an earthquake, the the interval between the arrivals of the P- and S- waves

**Triangulation: Locating an epicenter**

* Three are needed to locate the epicenter of an earthquake
* A circle where the equals the to the epicenter is drawn
* The of the circles locates the

Clues to the Earth’s interior

* Seismic waves change and when they encounter different materials in Earth’s interior.
  + P-waves and S-waves traveling through the mantle follow fairly direct paths.
  + P-waves that strike the core are refracted, or , causing P-wave where no direct P-waves appear on seismograms.
  + S-waves do not enter Earth’s outer core because they cannot travel through and do not reappear beyond the P-Wave shadow zone.
  + This disappearance of S-waves has allowed   
    seismologists to reason that Earth’s outer   
    core must be .
  + Detailed studies of how other seismic   
    waves reflect deep within Earth show  
    that Earth’s inner core is .