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 .