

Name _____
Period _____ Date _____

Unit 9 Notes – Earthquakes
Earth Science

I. Earthquakes

- Earthquakes - sudden movement of the ground
- There are over 1 million earthquakes each year.
- A major cause of earthquakes is because of faulting.
- faulting - sudden movement of rock along planes of weakness in the Earth's crust.
- fault - plane of weakness in the Earth's crust.
- Rock is stressed to the breaking point and the two halves have an elastic rebound.
- focus - the point where the rock breaks
- epicenter - the point on the Earth's surface directly above the focus. (city name)
- Analysis of seismic waves allows the determination of the location of epicenters.

II. Earthquake Waves

- When faulting occurs, vibration called seismic waves spread out in all directions from the focus.
- seismograph - a device that detects, measures and records the motions of the Earth associated with seismic waves.
- seismogram - the line that was recorded on paper by a seismograph.
- magnitude - the total energy released by an earthquake (strength)
- The greater the density of the material it moves through, the faster the wave travels. *example: waves travel faster through solids than granites*

III. Measuring Earthquakes

- Richter - based on the energy released – uses scientific instruments – measures the magnitude (strength) of the waves.
- Mercalli - based on descriptions of earthquake damage on structures made by humans.

IV. Types of Earthquake Waves

- P-Wave (Primary) *Stress/Motion*
 - Can travel through everything: solids, liquids and gases.
 - The fastest of the earthquake waves, usually the first to arrive.
 - Compressional wave – through the spring.
- S-Wave (Secondary)
 - Can only travel through solids.
 - Slower and usually the second type of wave to arrive.
 - Shear wave – makes the letter S.

V. Earthquake Prediction and Preparedness