

## Earthquake Notes

### TERMS

- a. Epicenter- the point from which the shock or seismic waves speed out. It is directly above the focus.
- b. Focus where the earthquake occurs.
- c. Seismic waves- shocks that are given off from the epicenter.
- d. Seismograph- the special instrument used to measure and record the intensity (strength) of the earthquake.
- e. Seismology- the study of earthquakes.
- f. Seismologist- a scientist who studies earthquakes.
- g. The Richter Scale- measures the magnitude of an earthquake shock. This scale was named after C.F Richter in 1935. It ranges between 0 and 10.
- h. Magnitude- the amount of energy released during the earthquake.

What is an earthquake?

1. An earthquake is a violent shaking vibration or movement of the earth's crust.
2. An earthquake is a shock or series of shocks due to sudden movement of rocks in the earth's crust.

An earthquake is one of the most catastrophic natural hazards.

It occurs when two blocks of the earth suddenly slip past one another. Earthquakes are usually caused when rock underground suddenly breaks along a fault. This sudden release of energy causes the seismic waves that make the ground shake. When two blocks of rock or two plates are rubbing against each other, they stick a little. They don't just slide smoothly; the rocks catch on each other. The rocks are still pushing against each other, but not moving. After a while, the rocks break because of all the pressure that's built up. When the rocks break, the earthquake occurs. During the earthquake and afterward, the plates or blocks of rock start moving, and they continue to move until they get stuck again.

### SHOCK WAVES

When a rock within the lithosphere fractures it sends out shock waves in all direction. The source of these waves is called the hypocenter of the earthquakes. The point on the surface above the source is the epicenter.

There are three types of shock waves

- 1) P waves (Pressure or Primary waves) cause back and forth movement in the same direction as the waves.
- 2) S waves (Secondary or Shear waves) cause the rock to shake back and forth at right angles.
- 3) Surface waves are waves that reach the surface.

Mercalli- Intensity Scale- The scale that is used to measure the effects experienced by an earthquake.

<b>Intensity</b>	<b>Characteristics</b>
I	Shaking not felt under normal circumstances.
II	Shaking felt only by those at rest, mostly along upper floors in buildings.
III	Weak shaking felt noticeably by people indoors. Many do not recognize this as an earthquake. Vibrations similar to a large vehicle passing by.
IV	Light shaking felt indoors by many, outside by few. At night, some were awakened. Dishes, doors, and windows disturbed; walls cracked. Sensation like heavy truck hitting a building. Cars rock noticeably.
V	Moderate shaking felt by most; many awakened. Some dishes and windows broken. Unstable objects overturned.
VI	Strong shaking felt by all, with many frightened. Heavy furniture may move, and plaster breaks. Damage is slight.
VII	Very strong shaking sends all outdoors. Well-designed buildings sustain minimal damage; slight-moderate damage in ordinary buildings; considerable damage in poorly built structures.
VIII	Severe shaking. Well-designed buildings sustain slight damage; considerable damage in ordinary buildings; great damage in poorly built structures.
IX	Violent shaking. Well-designed buildings sustain considerable damage; buildings are shifted off foundations, with some partial collapse. Underground pipes are broken.
X	Extreme shaking. Some well-built wooden structures are destroyed; most masonry and frame structures are destroyed. Landslides considerable.
XI	Few structures are left standing. Bridges are destroyed, and large cracks open in the ground.
XII	Total damage. Objects thrown upward in the air.