

## Chapter 27

Use with Section 1

## ENRICHMENT

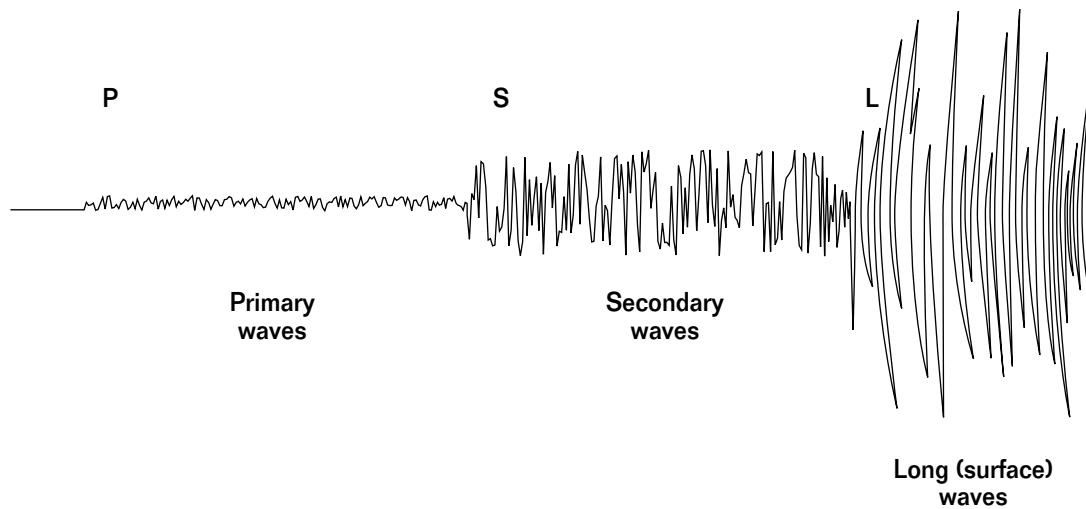
## ● What are waves?

## Seismic Waves

Waves that transfer energy through Earth are seismic waves. They occur when energy that has been building up inside Earth is released. Sudden motion causes shock waves that radiate out from the area of rupture. The movement of parts of Earth as these waves travel is called an earthquake. Seismic waves do not travel symmetrically in all directions.

There are two main types of seismic waves: longitudinal waves called P (Primary) waves and S (Secondary) or shear waves. Primary waves produce ground motion back and forth in the direction of wave travel. Secondary waves vibrate the ground perpendicular to the direction of travel.

Seismic waves are not all alike. How far they travel and how intense they are depend on two things. One is how much energy is released. The other is the kind of material the wave passes through. Materials can vary in terms of depth, the type of rock that's present, and the soil conditions.



Seismograms show the vibration of seismic waves.

As seismic waves travel farther from the rupture, they become less intense. Near the site where the shift takes place, a large amount of energy that is released produces shocks, jolts, and roaring noise. Farther away, the movement becomes more rolling and the sound becomes more like a rumble.

Answer the following questions, using complete sentences.

1. Are seismic waves mechanical or electromagnetic waves? Are seismic waves transverse or compressional waves?

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2. Why do you think an earthquake is accompanied by noise?

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