Earthquake Magnitude and Intensity

Vibrations produced by earthquakes are detected, recorded and measured by instruments called *seismographs*. The zig-zag trace recorded by a seismograph —called a "seismogram" — reflects the varying amplitude of the vibrations by responding to the motion of the ground beneath the instrument. From the data expressed in seismograms, the time, epicenter, and focal depth of an earthquake can be determined, and estimates can be made of the amount of energy that was released.

The severity of an earthquake can be expressed in several ways. The *magnitude* of an earthquake, as expressed by the *Richter magnitude scale*, is a measure of the amplitude of the seismic waves. The amplitude is measured on seismograph recordings. When the earth quakes, the amplitude of the wave recorded on the seismograph is measured and is then corrected mathematically to what the amplitude would have been if it had been recorded at a distance of 100 kilometres from the epicenter. The Richter magnitude derived from these corrected seismograph recordings indicates the amount of energy released as if it had been recorded at this standard 100-kilometre distance from the