Common Magnitude Measurements
Visual Aid

Grades
9-12

M_d - Duration Magnitude - This magnitude is based on the duration of shaking as measured by the time decay of the amplitude of the seismogram.

M_l - Local Magnitude - The original magnitude relationship defined by Richter and Gutenberg for local earthquakes in 1935. It is based on the maximum amplitude of a seismogram recorded on a Wood-Anderson torsion seismograph. Although these instruments are no longer widely used, MI values are calculated using modern instruments with appropriate adjustments.

M_s - Surface wave Magnitude - A magnitude for distant earthquakes based on the amplitude of the Rayleigh surface wave.

M_w - Moment Magnitude - Based on the moment of the earthquake, which is equal to the rigidity of the earth times the average amount of slip on the fault times the amount of fault area that slipped.

M_b - Body wave Magnitude - Based on the amplitude of P (compressional) body-waves. This scale is most appropriate for deep earthquakes.

Source: Alaska Earthquake Information Center. www.aeic.alaska.edu