

# Amplitude and Energy

Recall, a wave is a transfer of energy, but not matter, through a medium.

The amplitude of a wave is an indication of the amount of energy a wave is transferring. Waves with larger amplitudes transfer more energy than waves with smaller amplitudes.

ex.

tidal wave vs. a small ocean wave

loud sound vs. a soft sound

Two waves can have all of the same properties (frequency, wavelength, and velocity), but with different amplitudes.

Diagram:

Damping – a decrease in the amplitude of a wave over time due to the loss of energy. (Energy is lost to friction.)

**As a wave travels away from a source, its amplitude decreases (damping), but its velocity remains constant.** The loss of energy is shown through a decrease in amplitude, not velocity.