Sound Waves are Longitudinal Waves

Sound propagates in the medium as a series compressions and rarefactions. We can compare the propagation of disturbance with the sound propagation the medium. These waves are called longitudinal wave

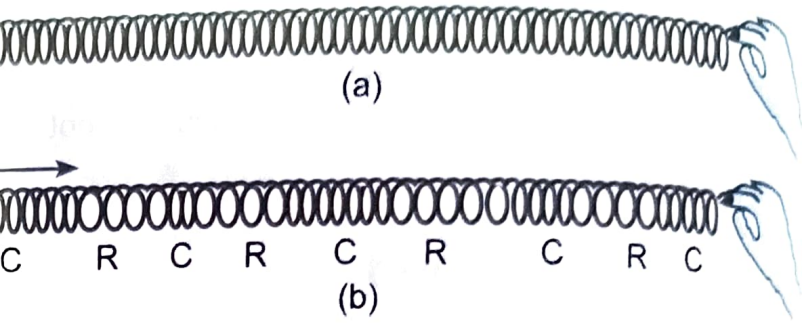

Fig : **Longitudinal wave in a slinky.**

In these waves the individual particles of the medium move in a direction parallel to the direction of propagation of the disturbance. The particles do not move from one place to another but they simply oscillate back and forth about their position of rest. This is exactly how a sound wave propagates, hence sound waves are longitudinal waves.

There is also another type of wave, called a transverse wave. In a transverse wave particles do not oscillate along the line of wave propagation but oscillate up and down about their mean position as the wave travels. Thus a transverse wave is the one in which the individual particles of the medium move about their mean positions in a direction perpendicular to the direction of wave propagation. Light is a transverse wave but for light, the oscillations are not of the medium particles or their pressure or density. It is not a mechanical wave.

Characteristics of a Sound Wave

A sound wave is described by its

- frequency
- amplitude and
- speed.