

UNIT

6

SOUND



Learning Objectives



After the completion of this lesson, students will be able to:

- ◆ understand the production of sound.
- ◆ explain the propagation of sound in a medium.
- ◆ analyse the properties of sound.
- ◆ explain the wave nature of sound.
- ◆ know about the mechanism of hearing.
- ◆ discuss about noise pollution and the ways to control it.

Introduction

We hear variety of sounds in our daily life. Thundering of clouds, chirping of birds, mewing of cats, rustling of leaves, music on the radio and television and noise of vehicles are some of the sounds that all of us are familiar with. Each sound has particular characteristics. Sound enables us to communicate with each other. Animals also communicate with other members of their species with the help of sound. Some sounds like music are pleasing to us and we like to hear them. But some sounds, for example noise in our surrounding is undesired. In this lesson we will study about the production and propagation of sound, human voice system, hearing, noise pollution and the ways to control it.

6.1 Production of Sound

Sound is produced when an object is set to vibrate. Vibration means a kind of rapid to and fro motion of a particle. This to and fro motion of the particle causes the substances around it to vibrate. Thus sound spreads to the surroundings. The

substance through which sound is transmitted is called medium. Sound moves through a medium from the point of generation to the listener. We can understand the production of sound with the help of some activities.



Activity 1

Take the tray of an empty match box and stretch a rubber band around it, along its length. Then, pluck the stretched rubber band with your index finger. What do you observe? Do you hear any sound?



On plucking the rubber band, it starts vibrating. You can hear a feeble humming sound as long as the rubber band is vibrating. The humming sound stops as soon as the rubber