



TEACHER GUIDE

COMMUNICATION OVER DISTANCES GRADES K-2

COMMON MISCONCEPTIONS

Since light waves and sound waves are not visible, young students have a difficult time understanding that light and sound move from place to place. Give students opportunities to see vibrations with instruments. Guitar strings visibly vibrate when plucked. Students can also feel vibrations in their vocal cords when they hum.

Students also have experience with lights such as flashlights and bulbs. They have also seen light reflected by the moon. Young children often don't understand that some things that reflect light are not actually light sources. The moon is often very bright in the sky due to the reflection of the sun's light, but it does not actually produce light.

BACKGROUND INFORMATION

Light and sound have historically been used to communicate over distances. Drum beats have been used by militias and military groups in many countries. Not only were drum beats used for marching, they were also used to communicate over distances in times of war. In the 1830's Morse code was invented by Samuel Morse. This was a system of dashes and dots to represent different letters of the alphabet. This system was widely used and led to the invention of the telegraph.

In the modern world, light and sound have become an automated way of communicating in so many areas of our lives that we don't even realize how much we rely on them. Light and sound signals are used to help us drive a car. Playing sports and entertainment are also full of light and sound communication.

TIPS FOR TEACHERS

This is a great topic to bring in the discussion of people with disabilities who might have visual or hearing impairments. Ask students what it would be like not to be able to see any of the signals and other communications done by light. Likewise, what do people with hearing difficulties do when they can't receive information by hearing? Discuss different inventions and aids that help people with these disabilities communicate. (Sign language, reading lips, hearing aids, braille, walking sticks, sounds you hear at a crosswalk, seeing eye dogs, etc.)