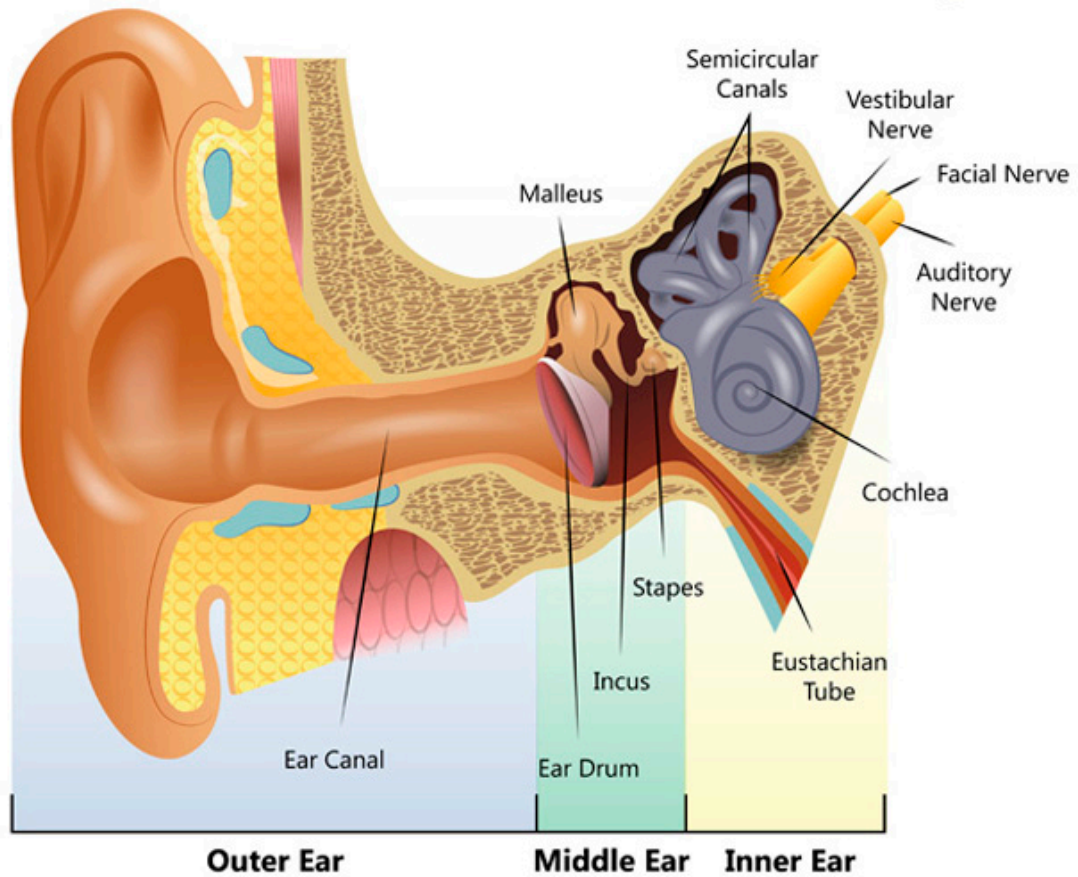




ASHEVILLE MUSEUM OF SCIENCE

The Sound of Science

Background:



Our ears were designed to hear (of course). All the structural components of the ear make it possible for us to convert sound wave vibrations into an electrical impulse that can be interpreted by our brains.

The outer ear's shape helps to funnel in sounds that travel down the ear canal. Once the sound waves hit the ear drum in the middle ear, the vibrations propagate, or travel, through the middle ear, vibrating 3 small bones (the incus, malleus, and stapes).

The sound vibrations are then transmitted to the inner ear where the cochlea vibrates. The cochlea is filled with fluid and just like sound waves in air, the fluid will vibrate in a wave-like fashion stimulating small hair cells of the inner ear.

The hair cells are sensitive and will respond differently to different pitches or frequencies of sound. In a fraction of a second, the hair cells stimulate a nerve impulse that will travel down the auditory nerve and to our brain's auditory cortex where the nerve impulse will be interpreted as sound.

Activity:

Check out the attached video to try the string telephone activity and explore how sound travels as a wave.