



The SCIENCE Connection

LISTEN UP! Chapter 2 investigates the amazing realm of sound waves

Scientific Investigation, Reasoning, and Logic: Science SOL 5.2

The student will investigate and understand how sound is created and transmitted, and how it is used. Key concepts include

- compression waves;
- vibration, compression, wavelength, frequency, amplitude;
- the ability of different media (solids, liquids, and gases) to transmit sound; and
- uses and applications of sound waves.

For more information or background knowledge to help you understand this standard, visit http://www.doe.virginia.gov/testing/sol/standards_docs/science/index.shtml

It's All About Sound!

In this unit we will introduce the concept of sound, scientific vocabulary, and how sound is transmitted.

How can I supplement what is happening in class?

Here are some activities to help reinforce your child's discoveries about sound.

- Use a comb with teeth that are the same distance apart and are of equal thickness. Have your child move a penny slowly across the teeth of the comb, noting the pitch. Next, move the penny faster but with the same level of pressure, noting how the pitch becomes higher. The faster the frequency, the higher the pitch.
- When you sing in the shower, the sound waves from your voice bounce off tiles and travel to opposite walls which also reflect the sound. This bouncing back and forth makes your voice sound fuller and richer. Encourage your child try to make full, rich echoes in the shower to demonstrate the reflection of sound waves.
- Take the family to a community concert. Many communities offer free family-friendly concerts. After listening, discuss with your child the different instruments seen and try to categorize them according to how they produce sound. Compare and contrast the volume and pitch of the instruments.
- Visit a local music store to explore a variety of musical instruments. Often employees of music stores will allow your child to test different instruments.

What is expected of your child?

In order to meet this standard, it is expected that students will:

- use the basic terminology of sound to describe what sound is, how it is formed, how it affects matter, and how it travels.
- create and interpret a model or diagram of a compression wave.
- explain why sound waves travel only where there is matter to transmit them.
- explain the relationship between frequency and pitch.
- design an investigation to determine what factors affect the pitch of a vibrating object. This includes vibrating strings, rubber bands, beakers/bottles of air and water, tubes (as in wind chimes), and other common materials.
- compare and contrast sound traveling through a solid with sound traveling through the air. Explain how different media (solid, liquid, and gas) will affect the transmission of sound.
- compare and contrast the sound (voice) that humans make and hear to those of other animals. This includes bats, dogs, and whales.