

Sounds of Science Demonstration:

Discover sound through some unconventional noisemakers! This demo makes cups squeak, rods scream and water jump- all in the name of science!

Demonstration highlights include:

Sound is vibrations

Using a slinky and a tuning fork, students will discover that sound is vibrations.

Exploring pitch and amplitude

Many of the activities featured in the Sounds of Science demonstration focus on how to change the pitch and amplitude of a sound. We demonstrate these complicated science concepts with simple materials including a plastic straw and a music box.

Create your own sounds

Many activities featured in the sound demonstration are easy to try at home or in the classroom.

Sound we can see

Students will be able to see sound waves as they come in contact with a membrane.

Content Standards Alignment:

Ohio Content Standards Alignment:

Grades K-2

Physical Sciences: B

Grades 3-5

Physical Sciences: F

Scientific Inquiry: A,C

Scientific Ways of Knowing: D

Grades 6-8

Physical Science: B

Scientific Inquiry: A

Grades 9-10

Physical Science: G

Michigan Curriculum Framework Alignment:

Science

Strand I. Constructing New Scientific Knowledge

Standard I.I Constructing New Scientific Knowledge

Strand IV. Using Scientific Knowledge in Physical Science

Standard IV.1 Matter and Energy
Standard IV.4 Waves and Vibrations

Post- Activity:

Sound Bounces

Materials needed:

Books
Two cardboard tubes
Watch that ticks
Plate, cork, rubber, cement slab, brick, wood

Procedure:

1. Tape the watch over the end of one of the tubes. Listen at the other end of the tube. Can you hear the watch tick? Record your observation.
2. Put the books into two piles of equal height. Place the tubes in a 'V' shape between the books with the watch on the topside. Listen at the end of the open tube. Can you hear the watch tick? Record your observation.
3. Put the plate at the bottom of the 'V'. Listen at the end of the open tube. Can you hear the watch tick? Record your observation.
4. Try the other materials: cork, rubber, cement slab, brick and wood. Listen when each item is placed at the bottom of the 'V'. Can you hear the watch tick? Record your observations.

What's the science?

Sound waves are reflected by some materials and absorbed by others. Sound is nothing more than vibrations that travel through a medium. Sound waves will reflect or bounce off of some materials and be absorbed by others. Porous materials like wood or foam absorb sound. Materials that are smooth and hard like glass or granite reflect sound.

Extension Activities

- Research echolocation. Look at animals that use it.
- What is sonar? How does it work? Do some research to find out.
- Listen to whale songs at:
www.nationalgeographic.com/radiox/humpback/index.html
- Have you ever heard a similar sound? Why do you think the whales make these sounds? How do scientists record the song of the whales?