

Quieting The Roar

Sound Waves

Lesson 2 of 2

Grade Level: K-4

Subject: Physical Science

Prep Time: 10 – 20 minutes

Activity Duration: One class period

Materials Category: Special requirements

National Education Standards				
Science	Mathematics	Technology		Geography
		ISTE	ITEA	
2a, 3a				

Objective: To categorize the kinds of objects contained in a sound wave, and to observe a demonstration of how a sound wave travels.

Materials:

- Student Sheet
- Six lunch bags
- 6-10 common household items
- One Slinky®
- Notebook paper
- Pencil

Related Links:

Amateur Radio In Space

<http://spacelink.nasa.gov/Instructional.Materials/NASA.Educational.Products/Amateur.Radio.in.Space/Amateur.Radio.in.Space.pdf>

Sound Waves

Teacher Sheets

Background

Sound travels in waves. The sound wave starts at its origin and moves outward. Sound waves are mechanical vibrations of matter. We hear things by means of sound waves. A wavelength is the distance a wave travels through space in a single cycle. This lesson demonstrates that sounds are heard through wavelengths. We interpret the sounds we hear through these waves. The students will also see a demonstration on how a sound wave may travel through the air.

Guidelines

1. Read the K-4 NASAexplores “Quieting The Roar” article with students, and discuss it.
2. Ask students to take notebook paper and make six columns halfway down the paper. Label each column “Bag 1,” “Bag 2,” etc. Instruct students to list what they hear as you shake the each bag. Tell them to describe the sound not name it on their paper.
3. Shake the six bags and have students record the sounds they hear. If they are having problem, help them by asking: *Are there many objects or a few? Is the object big or small? Is it soft or hard? Does it sound like metal, glass, or plastic?*
4. Have students share their descriptions. Point out that the sounds they describe are carried by sound waves.
5. Tell students the objects were common household items. Point out that they interpreted the name of the objects through sound waves. No one interpretation is necessarily right.
6. Tell students they are going to see a demonstration on how sound waves travel.
7. Have a student hold one end of a Slinky® tightly in one position.
8. Extend the spring across the room. Using your arm, move the end of the spring up and down at a slow rate. This will cause the spring to move in a wave toward the fixed position. This demonstrates how sound moves as a wave.
9. Have students complete the Student Sheet.

Discussion / Wrap-up

- Point out that they were able to interpret sound waves to see something hidden from view.
- Discuss their Student Sheets, and have them describe their drawings of a sound wave.

Extension(s)

None



Sound Waves

Student Sheet

Draw and describe the wave of the Slinky® that demonstrates how sound waves travel.

