TRB 6:6 - Activity 5 - Sound Waves

Summary

This lesson plan will demonstrate how sound is made from vibration and moves in all directions from the source in waves.

Materials

- juice can
- large balloon
- small mirror
- rubber cement
- rubber band
- flashlight

Background for Teachers

The pitch of a sound is determined by the size (length, thickness) of the object making the sound. This is true of the voice boxes of animals. For example: women usually have shorter vocal cords than men and have higher pitched voices as a result.
Sound waves can be "seen" if they are translated into light. In the second half of this activity, you will find a description of this process.

Intended Learning Outcomes

1-Use science process and thinking skills
4-Communicate effectively using science language and reasoning

Instructional Procedures

Invitation to Learn:

- Leader whispers the name of a different animal in each person's ear (e.g., cat, bird, dog, donkey, elephant, owl, pig, horse).
- Each person takes a few seconds to practice the noise that his/her animal makes.
- One at a time, each person makes his/her sound and then arranges himself/herself in a line according to the sound of the animal's pitch highest to lowest.
- After the line has formed, draw a connection between the pitch of the animal's voice and the size of the animal. Pitch is determined by the length and thickness of the animals vocal cords. Larger animals tend to have larger vocal cords.

Instructional Procedures:

- In student science journal, have each student describe what he/she observes as he/she watches the demonstration.
- Stretch a balloon over one end of a soup can from which both ends of the can have been removed.
- Rubber cement a small mirror to the rubber sheet, and set up the can so that sound may enter the can and vibrate the membrane with the mirror attached.
- Aim a beam of light at the mirror so that it reflects to a screen or white wall.
- Have a student sing into the can and see the sound patterns of his/her own voice. Do not attempt an explanation
- Encourage students to think about what the rubber sheet was doing. Record observations in detailed scientific language in student science journal.

Bibliography

This lesson is part of the Sixth Grade Science Teacher Resource Book (TRB3) http://www.usoe.org/curr/science/core/6th/TRB6/. The TRB3 is designed to be your textbook in teaching science curriculum to your students. This book covers all the objectives of each standard and benchmark. If taught efficiently, a student should do well on the End-of-Level (CRT) tests. The TRB3 is designed for teachers who know very little about science, as well as for teachers who have a broad understanding of science.

Authors

Utah LessonPlans