



Sound and Vibrations

Introduction

Close your eyes and listen for a moment. What do you hear? Coughs and sneezes, chairs moving and pencils being sharpened, maybe even a bell ringing or an announcement over the PA system. These are sounds around us.

Where's the Science?

Sustained sound is caused by vibrations. These vibrations travel from the object (sound source) to your ear (sound receiver) allowing us to hear.

Materials (per pair)

1 Tuning Fork
1 cup of water
1 ping pong ball on a string
1 wood block
1 piece of paper
Paper towels

Procedures

In their science notebooks have students brainstorm things that they think vibrate. Have students share their ideas which can be listed on the board or chart paper.

Introduce the tuning fork and demonstrate how to use it by striking one tine of the tuning fork on the wood block.

Activity #1

1. Strike the tuning fork on the block of wood.
2. Dip the ends of the tuning fork into the cup of water. Watch and listen. Record observations. What do you notice? What is causing this to happen?

Activity #2

1. Strike the tuning fork on the block of wood.
2. Touch the ends of the tuning fork to the edge of the paper. Watch and listen. Record observations. Describe what is happening?

Activity #3

1. Strike the tuning fork on the block of wood.
2. Touch the ends of the tuning fork to your cheek. Record what you feel. Describe the feeling? What is causing this to happen?

Activity #4

1. Strike the tuning fork on the block of wood.
2. Hold the end of the thread so the ping pong ball is hanging in the air. Touch the tuning fork to the ball. Keep the tuning fork in one position and watch what happens to the ball. Record observations.

After everyone has had a chance to experience all four activities come back together whole group and discuss what is happening. Allow students to have a copy of The Tuning Fork instruction sheet to refer to. Ell and Special Ed students can look at the

pictures to help guide them. Those finished early can work on Go Further the bottom.

Nevada State Science Standards

P.5.C.2 - *Explain that vibrations produce sound waves.*

Assessment

These activities can be assessed by:

- observations during the activities
- individual and/or whole group share
- informal paragraph written by students

Additional Resources

- Make a Sound Viewer –
<http://www.canteach.ca/elementary/physical12.html>
- The Sundry –
<http://www.library.thinkquest.org/19537/>
- Basics of Physics Exploring Sound – segment 1 –
www.klvx.unitedstreaming.com

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