

RAFT IDEAS

Topics: Sound,
Vibrations, Musical
Instruments

Materials List

- ✓ VHS tape (scrap)
- ✓ Phillips screwdriver
- ✓ Rubber bands
- ✓ 8 cm x 13 cm
(3" x 5") Index card
or equivalent

This activity can be used
to teach:

- Traditions & culture
(National Curriculum
for Social Studies:
Theme 1, Culture)
- Music, society,
culture, and history
(National Music
Standards:
Connecting: Grades 1-
5, Standard 11)

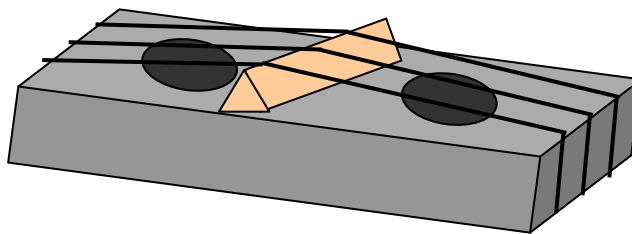
Next Generation Science
Standards:

- Sound (Grade 1,
Physical Science 4-1,
4-4)
- Energy and sound
(Grade 4, Physical
Science 3-2, 3-4)
- Science &
Engineering Practices
(Grades K-8)



VHS Shamisen

A RAFT Version of a Japanese String Instrument



Create this quick string instrument out of a scrap VHS tape and pluck to hear the sounds of Asia.

Assembly

1. Use the screwdriver to remove all the screws from back of the VHS tape casing.
2. Open the casing and remove the “innards” (i.e. – plastic bits, tape and tape reels, springs.) Also remove the plastic “flap” that protects the tape.
3. Reconstruct the “gutted” tape casing.
4. Stretch 3 or 4 rubber bands around the tape casing in the long direction.
5. Create the bridge by folding the 8 cm x 13 cm (3” x 5”) card into a triangular prism shape.
6. Place the bridge under the rubber bands at an angle (as shown).

To Do and Notice

1. Pluck the rubber band strings and compare the varying pitches. Which string produces the higher pitch (frequency)? The shorter string or the longer string?
2. Experiment with the placement of the bridge. How does moving the bridge affect the tone and pitch of the notes?

The Content Behind the Activity

Sound is caused by vibrations that travel in compression waves through the air (the medium) and into the ear. Once hitting the eardrum, the sound is sent to the brain’s auditory cortex where it is analyzed and interpreted. Objects make different sounds (louder, higher pitch, etc.) because of their size, density, and shape. Properties of the chord in string instruments (chordophones) determine the pitch, or frequency, of sounds produced.

The shamisen, a traditional, 3-stringed Japanese instrument, has been widely popular in Japan from the 17th century. Listeners can hear the shamisen today in dance and folk song performances as well as accompanying traditional theater forms, such as Kabuki.

Taking it Further

Other RAFT instrument activities include the *Glove-a-Phone* and *Straw Oboes*.

Web Resources (Visit www.raft.net/raft-idea?isid=449 for more resources!)

- History of Japanese Traditional Music - jtrad.columbia.jp/eng/history03.html