



# Science Activities

Title: **Ty's One-Man Band**

Author: **Mildred Pitts Walter**

Illustrator: **Margot Tomes**

## Music Box

Key Words: sound, vibrations, pitch

Concept: The characteristics of a sound can be changed.

Andro in the feature book, *Ty's One-Man Band*, was able to create music that made people want to get up and dance, and all he used were some everyday objects. In addition to the items Andro used—spoons, pail, and washboard—try these.

Materials: small cardboard box such as a child's shoe box, rubber bands.

Directions:

1. Have pairs of students stretch a rubber band around a small box with high sides.
2. Ask them to gently strum the rubber band. Then squeeze in the sides of the box and strum the rubber band again. The sound changes. Have students try to make up a simple tune, by strumming the rubber band while squeezing and then releasing the sides of the box.
3. The sounds students hear are produced by the vibrating rubber band, which causes the air around it to vibrate. When they squeeze the box, they change the amount of tension on the rubber band. Less tension causes the rubber band to vibrate more slowly and produce a lower pitched sound. The tighter rubber band vibrates faster and produces a higher pitch.
4. This activity can be extended by having students try using other rubber bands. They will find that the different rubber bands have a variety of sounds. Can they guess why? (Shorter, thin rubber bands will vibrate more quickly and make a higher pitched sound. Longer, thicker rubber bands will vibrate more slowly and make a lower pitched sound.) Ask students to make a box with all high-pitched strings and another box with all low-pitched strings.

## It's Music to My Ears

Key Words: sound, vibrations, pitch

Concept: Sound is caused by vibrations. Almost anything can be used to make music—the item just has to make a sound and anything you can cause to vibrate will make a sound.

Materials: common items that can be used to make instruments (e.g. boxes, plastic



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containers, string, rubber bands, paper cups, metal cans, milk carton, straws, spoons, ice cream sticks, paper clips, bottles), tape player, tape of music.

## Directions:

1. Ask pairs of students to make a unique instrument using common items from school and home. Tell them that their instrument must be able to make a sound that can be changed from a high to a low pitch. You can use the rubber band instrument in the previous activity as an example.
2. Have students present their instruments to a small group of students. Their presentation should demonstrate the following:
  - What part of the instrument vibrates to make a sound?
  - How can the sound be made higher? lower?
  - How can the sound be made louder? softer?
  - Older students can be asked to explain why the sound changes occur.
3. Allow small groups of students to work together to form a band. Provide some additional percussion instruments so that all the students have an instrument and encourage students to take turns trying the different instruments. Play music on a tape player and ask students to play.