

Sound Lab: Simple Instruments

Class Discussion

Ask students to make sounds with their musical instruments. Incorporate the lesson vocabulary terms in a class discussion.

- How can you increase the **volume** of your musical instrument?
- How can you change the **pitch** of your musical instrument?
- How does this affect the **vibrations** or **frequency** of your musical instrument?



Musical Instruments

Following are several simple musical instruments to make for the sound lab.

Kazoo Straw — Flatten one end of a straw. Cut the corners of the flattened end of the straw. Blow through the cut end and change the pitch by shortening (cutting) the other end of the straw.

Pan Flute — Test the pitch of an empty test tube by blowing across the tube. Add water to raise the pitch to the desired level and mark the level with a grease pencil. Repeat for each additional test tube. Create a test tube holder using cardboard and tape.

Flute-Type Instruments —

Pipe Flute (recorder): If you have a recorder mouthpiece, use PVC tube and create your own recorder by drilling holes to specific pitches. This one is a bit harder to make because you have to fashion one end of the PVC to fit the recorder mouthpiece using an tool such as a lathe.

Flute: Create a simple flute by punching with a nail or drilling holes into a dry, straight, empty piece of bamboo that is open at both ends.

Percussion Instruments —

Single-Headed Drums: Use coffee cans, large fruit juice cans, cookie tins, flower pots, ice-cream tubs, salt boxes, etc. Stretch a piece of rubberized canvas over the top of the container and fasten with a pipe clamp or embroidery hoop.

Double-Headed Drums: Make double-headed drums the same as a single-headed drum, but punch holes around the extended edge of the canvas and tie the heads to each other with string.

Tambourines: Punch holes into the edge of an aluminum pie tin with a nail. Tie bells through the holes with a string and play by striking with your hand.

Rattles or Maracas: Place dried beans into a tin can or box. Seal the container and attach it to a stick.

Glockenspiels or Xylophones — Make a glockenspiel (copper tubes) or xylophone (hard wood strips or bamboo) by cutting different lengths of each material into a scale. Fasten them together by laying them across two thin supports or hanging them from pieces of string. (Approximate cuts for a musical scale: 18, 19, 20, 22, 23, 24, 26 cm or 7, 7¼, 7¾, 8½, 8¾, 9½, 10 inches.)

String Instruments —

Guitars: Stretch three rubber bands of different thickness over a cigar or chalk box. A block of wood or a pencil placed under the rubber bands at one end can simulate the tightening of strings using frets.

Harpsichords: Same directions as the guitar, but use metal cake tins instead of a box.

Zither: Hammer four pairs of nails into a wooden board about 38 x 38 cm (15 x 15 inches). The first set should be 8 cm (3 inches) apart, the second 20 cm (8 inches), the third 25 cm (10 inches), the fourth 30 cm (12 inches). Stretch rubber bands between each pair of nails, and play by plucking the rubber bands.