



CLASS ACTIVITY

Exploring Sound Waves: Make Your Own Kazoo

OVERVIEW

MATERIALS: Toilet paper tubes, wax paper, rubber bands, sharpened pencil, paper

All sound is made up of vibrations, which produce sound waves that travel through the air to our ears. When a kazoo is played, air carries sound waves down the tube, making the wax paper vibrate to produce a buzzing sound. In this activity, students will make their own kazoos and explore the effect that the frequency and vibration of the sound waves have on pitch.

MAKE YOUR OWN KAZOO

Each student will need a toilet paper tube, a square of wax paper large enough to cover one end of the tube, a rubber band, and a sharpened pencil.

First, use the sharpened pencil to make a small hole about 2 inches from one end of the tube. This step can be done by the teacher if working with a younger group.

Then, wrap the square of wax paper tightly over the same end of the tube where the hole was created. Secure the wax paper with a rubber band, be sure not to cover the hole made in the first step.

To play your kazoo, place the open end of the tube over your mouth and hum. Students can take some time exploring what different sounds they can make into their kazoo (i.e. saying "ahhh" like at the doctor's office, singing their favorite song, etc.).

For the next experiment, each student will need a piece of paper. Have students write down their observations after each step below

1. Have students touch the wax paper on their kazoo as they hum. They should feel a vibration in the wax paper as they are humming.
2. Have students hum a high pitch (high frequency). They should feel a fast vibration in the wax paper.
3. Have students hum a low pitch (low frequency). This will produce a slower vibration in the wax paper.
4. Have students explore going back and forth between humming high and low pitches, noticing the difference in the vibration of the wax paper.

OPTIONAL

To extend the activity, have squares of different materials such as aluminum foil or plastic wrap on hand for students to put in place of the wax paper on their kazoo. Have students repeat the above experiment and record what differences they notice.