

SCIENCE FAIR CENTRAL

MAKE. CREATE. EXPLORE.



KAZOO DESIGN AN INSTRUMENT?

What We Want to Find Out

What construction techniques affect the sound of a kazoo?

Procedure

Starting with the short cardboard tube, work together to make a kazoo. First, decorate the tube with quick-drying paints or markers. After it dries, cut an approximately 3"x3" square from the plastic bag. Then, stretch it firmly across one end of the tube and attach it with the rubber band. Using the pencil, poke a hole in one side of the tube about halfway between the two ends. You now have a kazoo! Take notes as you press the tube against your mouth and hum – first into one end and then the other. (Don't blow into it!) What sounds does your instrument make? Where does the sound seem to come from? If you changed the design of your kazoo, how would those changes affect the sound? Make predictions before modifying your design.

Science Behind the Fun

The plastic in your kazoo acts as a membrane that vibrates to make a buzzing sound when you hum into it. In that way, it's a lot like our own vocal cords, which vibrate when we talk, hum, or sing. Because the layer of plastic or wax paper is thin, it vibrates very quickly and adds to your own voice to make it higher. Each design change should have created a slightly different sound. Were your predictions correct? Which design seemed to work best? Which didn't work well? Which produced the best "music"?

Materials

- Cardboard tubes from paper towels rolls
- Markers or paints
- A plastic grocery bag
- Rubber band
- Paper
- Pencil

Tips

Try changing your original design by using a long cardboard tube; making the body of the kazoo out of wax paper, foil, thin plastic wrap, or regular copy paper; moving the side hole to a different position; or changing the size of the hole.

Still Curious?

Visit the site of the Association of American Kazoologists, at <http://kazoologist.org>, for more about the science behind the kazoo!

