

## Sound Sandwich

In this activity, you'll construct a noisemaker called a Sound Sandwich. By making simple adjustments, you'll be able to raise or lower the pitch.

### Materials

- 2 jumbo craft sticks
- a straw
- a wide rubber band (#64 size)
- 2 smaller, narrower rubber bands
- scissors



### What Do I Do?

1. Place a wide rubber band lengthwise over one of the craft sticks.
2. Cut two small pieces of straw, each about 1 inch to 1-1/2 inches in length.
3. Put one of the small straw pieces underneath the wide rubber band, about a third of the way down from the end of the stick.
4. Take the other craft stick and place it on top of the first one.
5. Wrap one of the small rubber bands around the end of the stick a few times, about 1/2 inch from the top, on the same side where you placed the piece of straw. Make sure the rubber band pinches the two craft sticks tightly together.
6. Put a second small piece of straw in between the two craft sticks, on the opposite end, approximately a third of the way down from the top of the stick. This time, don't put the straw underneath the wide rubber band; place it on top of the rubber band, in the middle of the two sticks.
7. Wrap a small rubber band around this end of the craft stick, about 1/2 inch from the end. When you're done, the two ends should be pinched and there should be a small space between the two craft

sticks created by the two pieces of straw.

8. Put your mouth in the middle and blow! Remember to blow through the sticks, not through the straws.
9. Move the straws closer together. Does the sound change?



### What's Going On?

When you blow into the Sound Sandwich, you make the large rubber bands vibrate, and that vibration produces the sound. Long, massive objects vibrate slowly and produce a low-pitched sound, while shorter, less massive objects vibrate quickly and produce a high-pitched sound. When you moved the straws closer together, you shortened the part of the rubber bands that can vibrate, so the pitch is higher than the pitch of the original sound.