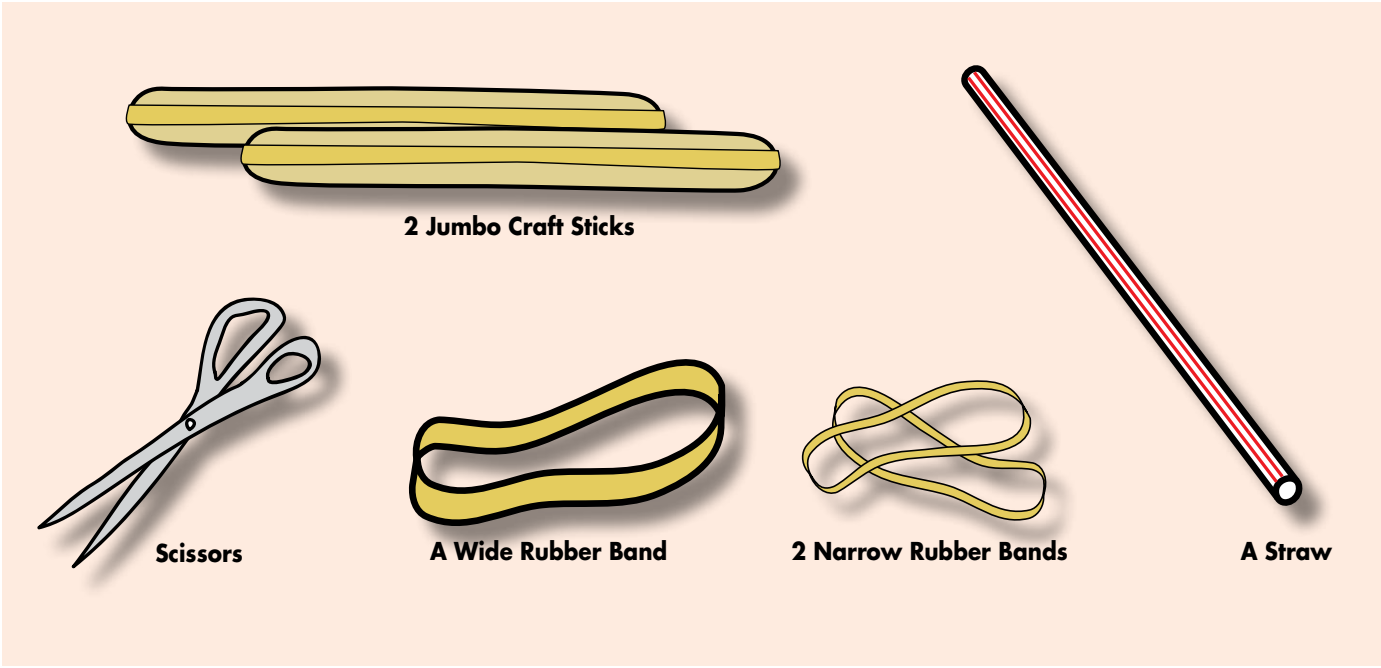
Sound Sandwich

Find What You Need...

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



Can you play different notes with vibrating rubber bands?

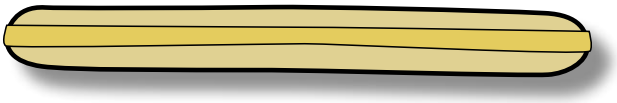
All sound starts with vibration, and that vibration can come from just about anything. In this activity, your breath will cause two rubber bands to vibrate. Then, you will see if you can change the pitch, or how high or low we hear a sound. Here's a fact to remember as you do this activity: Long, massive objects vibrate slowly and produce a low-pitched sound, while shorter, less massive objects vibrate quickly and produce a high-pitched sound. How could you change the pitch of a rubber band? Make a sound sandwich and you'll find out!

Fact:

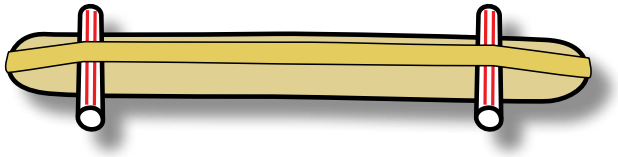
The world's largest rubber-band ball contains more than 700,000 rubber bands and is over six feet tall.

Activity Instructions:

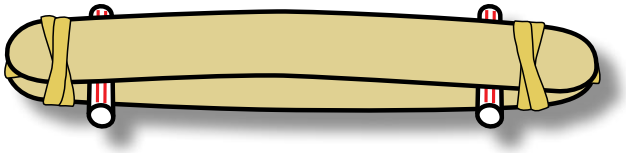
1. Stretch a wide rubber band lengthwise over one of the craft sticks.



2. Cut two small pieces of the straw, each about 1 inch to 1½ 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. Then place the second straw piece under the rubber band on the same side of the stick, about a third of the way from the other 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 one end of the stick a few times, about ½ inch from the top. Wrap the other small rubber band around the other end of the craft stick, about ½ 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.



6. Put your mouth in the middle and blow! Remember to blow through the sticks, not through the straws. Keep blowing until you get a sound. The sound comes from vibrations in the large rubber bands.
7. Move the straws closer together. Does the sound change?

Conclusions

What made the sound in your sound sandwich? What caused the sound to change? When you moved the straws closer, did you shorten or lengthen the vibrating object? How should that change the pitch? What did you observe when you moved the straws?

Brain Squeezer:

Rubber bands can make different kinds of instruments. Could you make a rubber band guitar that can play a melody or a scale?

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