FAMILY ACTIVITY: DIY Musical Instruments

In this activity, youth will build musical instruments from everyday materials, and use them to play music. Through this activity, youth will develop their talents for crafting objects by hand, creating music, performing, and collaboration. In learning about making instruments and music, youth will also be introduced to the physics of sound.

This activity guide gives instructions for creating a wind instrument (made with craft sticks, rubber bands, and straws), but other DIY instruments would work just as well. Even better, make more than one kind of instrument and play together!

MATERIALS AND INSTRUCTIONS

Materials
- Craft sticks - 2 per instrument, ideally the wide variety (i.e. tongue depressors)
- Wide rubber bands - 1 per instrument
- Small rubber bands - 2 per instrument
- Straws - ½ per instrument
- Scissors
- Rulers (optional)

Instructions
1. Make an instrument called a sound sandwich:
   a. Stretch one wide rubber band over the long part of one of the craft sticks.
   b. Cut two small pieces of straw, each about 1”-1.5” long, which should be a little shorter than your thumb or pinky finger.
   c. Stick one of the pieces of straw between the rubber band and the stick, about an inch from one of the ends of the stick.
   d. Lay the stick down, with the straw side facing up.
   e. Put one more piece of straw about an inch from the opposite end of the stick, on top of the rubber band.
   f. Put the second craft stick on top, so that the straws are in between the two sticks.
   g. Wrap a small rubber band around both craft sticks, between the straw and the end of the stick.
   h. Wrap a second small rubber band around the opposite end of the stick.
2. Blow through the sticks in the middle to make sounds (not through the straws). Experiment with blowing into different parts of the middle to see how it might affect the sound!
3. Make music using the sound sandwich. Create a new song or try to sound out a song you know. Add other instruments (including voice and clapping), if you want!

QUESTIONS TO EXPLORE

1. Why does the sound sandwich make noise?
   - The force of breath makes the rubber band vibrate, or shake, and that vibration creates a
sound we can hear!

2. What is something you learned during this activity?
3. What were some challenges you faced while doing this activity?
4. Could you teach someone else to make a sound sandwich?

### IDEAS TO INCLUDE YOUNGER SIBLINGS! (ADAPTATIONS FOR 0-5 YEAR OLDS)

- Preschoolers can be engaged in making instruments with simple household items. Empty bottles can be filled with small stones, buttons or dried beans to make maracas/shakers. Take into consideration what can easily be held in smaller hands and what your own tolerance for noise is, when you plan what materials to use.
- Non mobile infants who can sit on the floor, love to bang empty plastic bowls and pots with their hands or a wooden spoon. If they cannot sit unassisted and you are able to join them on the floor – you can play along with them in your lap and help with holding objects, shaking them or banging along with the big kids on pots and pans. If you have the space, consider making one drawer or cabinet in your kitchen a “safe zone” that has boxes and containers for you little one can pull out onto the floor to explore on their own.
- For non mobile infants – once your instruments are done, they can enjoy being held and dancing along with you as the older children compose on their hand-made instruments.

### REFERENCES, MODIFICATIONS, & EXTENSIONS

#### References
Adapted from [Exploratorium’s Science Snacks](https://www.exploratorium.edu/).

#### Modifications
- The target ages for this activity are 7+, but it can be done with younger youth with adult or older youth support.
- COLLABORATE - Youth can do this activity with siblings or adults.
- Warm up for the activity by making music with your body’s instruments: voice and hands!
- Instead of, or in addition to, the sound sandwich, have campers:
  - Make wind instruments from [grass](https://www.exploratorium.edu/) or [leaves](https://www.exploratorium.edu/) or [a straw](https://www.exploratorium.edu/).
  - Make percussion instruments by putting dried beans or rice in a folded paper plate (or two plates sandwiched together) and securing with staples or glue.
  - Make experimental instruments from an assortment of recycled/craft materials.
  - Make another kind of [DIY musical instrument](https://www.exploratorium.edu/).

#### Extensions
- Make a video of music making and share with friends and family!
- Learn more about the physics of sound.