

A STEM in the Park Take Home Activity

STEM in the PARK

Science, Technology, Engineering, and Mathematics

Make Your Own Kind of Music

Invent your own musical instruments to discover where sound comes from and how sound is created.

What You Need

- Materials for instruments (see back)
- Scissors and duct tape
- Glue
- Markers or crayons and decorations (if desired)



What To Do

1. Gather the necessary household items for the experiment. Feel free to substitute items.
2. Using your imagination and what you know about musical instruments, create your own musical instrument with the household items listed on the back.
3. While you are making the instrument, think about how sounds are made and how sound travels.

Continued on back

Maracas - empty film canisters, Popsicle sticks, beans, rice, duct tape

Flute - toilet paper roll, wax paper, several rubber bands, a sharpened pencil

Clarinet - straws, scissors

Harmonica - a clean comb, wax paper

Guitar - shoebox, at least 6 rubber bands, pencil paper towel roll, duct tape.

Chimes - ruler, 4 washers, string, mixing spoon, duct tape

Trumpet - 1-2 feet of old garden hose, the top half of a two liter bottle, duct tape

Learn...

Sound can be made by plucking an elastic band, blowing through a pipe, banging pots together, and scraping or shaking something. When something makes a sound, like clapping your hands, it's because when you clap your hands the air molecules around your hands shake and vibrate. This vibration travels in waves shaking the air molecules a little further away from your hands and keep on going until the air molecules inside your ear vibrate, too. When the air molecules inside your ear begin to shake, they wobble tiny hairs inside your ear that are connected to nerves under your skin that send a message to your brain. That message says, "You heard a sound". There are three families of musical instruments; string, wind and percussion. When a string is plucked on an instrument, like a guitar, that vibration is passed into the air. Blowing into a horn makes the air inside the pipes vibrate. Drums and other percussion instruments produce vibrations when you bang on them.

Investigate...

1. Play your instrument and think about where the sound is being made.
 - What vibrates to create the sound for your instrument?
2. What can you do to make different sounds with your instrument?
Experiment with your instrument. Add or subtract things from your instrument. How does the sound change?