



Project Exploration creates transformative learning opportunities for youth underrepresented in the sciences --particularly students of color and girls -- by equipping them with the skills, practices, and mindset needed for a lifelong pursuit of learning. STEM@Home makes activities around science, technology, engineering, and math accessible and fun to do at home. This STEMbook activity, resources, and more are available at www.projectexploration.org/stemathome.

In this activity, you will:

Learn about string instruments and they create sound, then build your own sound making instrument.



Supplies Required:

- 1 Box with a lid (example: shoe box)
- Tape
- 4 popsicle sticks or pencils
- 4 rubber bands (various sizes)
- Scissors

Video

What is a string instrument? <https://youtu.be/V26Wjqs0l4w>

Overview

Try this! Touch your hand to your throat as you hum a song. Do you feel the vibration of your throat? Try singing a song. Do the vibrations feel different?

There are many examples of string instruments: piano, guitar, violin. Sound is created when the strings are tapped, strummed, or pushed. The action causes the strings to vibrate (move side to side quickly) creating a sound that you can hear. Different types of strings move in different ways when played. The length and thickness of the string changes the sound it creates.

Instructions



1. Look at the materials and design your string instrument. Create a drawing of what your instrument will look like.
2. Think about these questions while you create your drawing:
Will the box make better sounds with the lid on or off?
How will you attach the strings?
Which direction going over the box will the strings go?
3. TIP: The length of the rubber bands will affect the pitch. Short, tight, thin rubber bands will produce lower pitched sounds.
4. Choose the rubber bands you want and attach it to the box.
5. TIP: You can slip rubber bands around a box or you can cut the rubber bands open to make strips to poke through holes in the box or to tape on the outside of the box.
6. Test your instrument, run your fingers across the stings or pluck them. What sounds do they make?

Additional Resources

1. Want to learn more about sound? Here is a Youtube playlist created by National Geographic all about the sciend of sound:
<https://tinyurl.com/57sf725j>
2. Check out Chrome Music Lab to experiement with sound waves, create your own songs, or make cartoon characters sing:
<https://musiclab.chromeexperiments.com/Experiments>

Share It Out

Share on social media: Record a video or take a picture of your activity and post the results online using the hashtags:

#Instruments
#ProjectExploration
#StemAtHome

Tag a friend and challenge them to do it, too!

For more activities like this one, go to www.projectexploration.org/stemhome. If you're interested in learning more about Project Exploration and our free events, programs, and activities, please find us on social media and be sure to follow!



Call or text us for help: 312-772-6634

www.projectexploration.org