



Preschool Educator Guide: Music and Sound

National Standards (K)

4.1 Science as Inquiry

- Understanding scientific inquiry
- Abilities necessary to do science inquiry



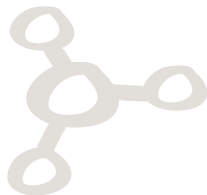
The Learning Continuum: Before, During and After Your Visit

Guide Theme

In preparation for a visit to the New York Hall of Science, each child will imagine that he or she is a scientist. As a group of scientists, your students will use the inquiry method to practice observation skills and make discoveries through exploration and play. Placing a NYSCI visit at the center of an inquiry provides the students with continuity and purpose, and provides teachers with a way of assessing student understanding.

Begin Exploration at School

Before coming to NYSCI, students can practice being scientists at school by trying the continuum activities and reading books from the list provided. These continuum activities vary in time, depth and work to prepare early learners to get the most out of their trip.



Exploration at NYSCI

Students will experience a music—and sound-themed activity at NYSCI. The workshop focuses on music, sound and what creates them, especially vibrations. After the guided activity, the students will have time to use their skills and explore the exhibits in the Preschool Studio.

Preschool Studio Exhibits List

- Loft
- Ball Drop Wall
- Discovery Boxes
- Puppet Theater
- Brickworks
- Train Table
- Soft Arch



Finish Exploration at School

Students can continue their experience at school with one or more of the continuum activities.





Preschool Educator Guide: Music and Sound

Continuum Activities

Good Vibrations

What is sound made of? Vibrations! We can't see sound vibrations but we can definitely feel them.

Time: 10 minutes

Materials

- 10 rubber bands tied to each other to create a long rubber band rope

Instructions

1. Ask all students to say "ahhhhh" for a few seconds. Can they feel the vibrations?
2. This time, have them place hands on their throats and say "ahhhh." Do they notice anything now? What do they feel? Those are vibrations. But what do these vibrations look like?
3. Take out the rubber band rope.
4. Stretch and secure it along the board or have two students hold on to it.
5. Ask the class to listen and watch carefully. What happens when the string is plucked? The vibration in the rubber rope creates the sound we all hear. This is also how guitars, violins and banjos make their musical sounds.
6. Try stretching the rubber band rope tighter or more loosely. Did anything change when you plucked the rope?

What is making that sound?

How good are you at identifying what you hear? We'll try it out with our eyes closed, using everyday materials that you might know.

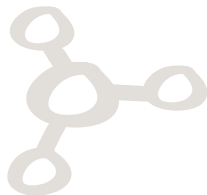
Time: 15 minutes

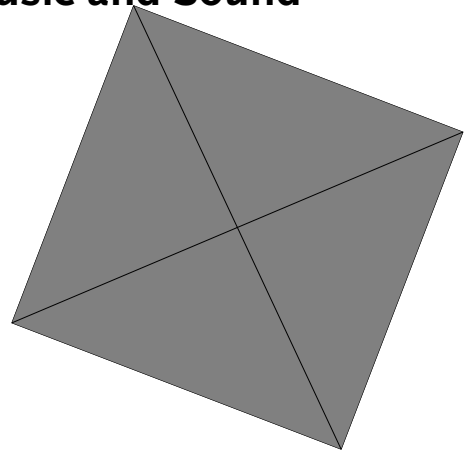
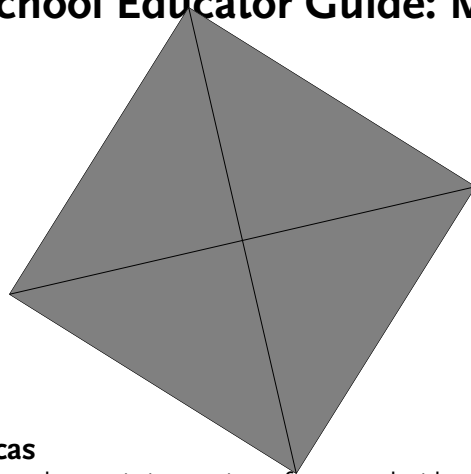
Materials

- Paper
- Pencil
- Glass, wood or metal
- Coins
- Rubber bands
- A book
- Scissors

Instructions

1. Try making a practice noise while the students watch. Make sure they can hear the noise you make. Now tell them to imagine that they can't see you. They will have to use only their ears to identify the sound. After each sound, demonstrate for students and have the students replicate or act out the sound.
2. Have students face the opposite direction and ask them to listen carefully to the next sound.
3. Can they figure out what was making that sound?
Some sounds to include: Tearing paper, sharpening a pencil, clapping hands, tapping on glass, wood or metal, jingling money, snapping rubber bands, leafing through a book, cut with scissors or anything else you can think of, especially instruments if they are available.
4. We can see that different materials create different noises and even music! Scientists can't always see the things they study so they have to use their other senses to figure things out.





Maracas

We can make music in a variety of ways and with many different materials. Just because we have the same instrument, doesn't mean that it will make the same sound. The example we'll make today is maracas.

Time: 30 minutes

Materials

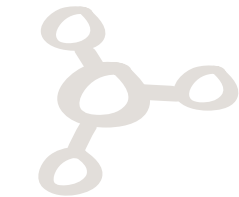
- Toilet paper tubes or halved paper towel tubes
- Different kinds of dried beans and grains such as unpopped popcorn, rice and black beans
- 2 pre-cut cardstock or paper circles for each tube, sized to match the diameter of the tubes
- Sheets of colored construction paper cut to 4.5 by 6 inches (one quarter of a 9 by 12 inch sheet)
- Crayons or markers
- Masking tape (about 10 inches per maraca project)
- Scotch tape (about 5.5 inches per project)

Preparation

Make one example of a finished maraca to show students. Prepare the tubes by taping one of the pre-cut circles to seal one end of each. Either apply the tape around the rim of the tube and fold the edge over the paper circle, or put the paper circle in place, make an "x" across it with the tape, and fold the edges of the "x" over onto the sides of the tube. (To reinforce the "x," add another strip across its middle.) Set aside an assortment of the dried grains and beans ready in bowls. Pre-cut pieces of tape for students, if desired.

Instructions

1. Have students begin by decorating one 4.5 by 6 inch paper with their names and a music-theme such as musical notes, musical instruments or people dancing to music.
2. Call students in small groups to bring a tube and choose from the different types of beans. Model the correct way to handle the beans, so that they will not spill.
3. Demonstrate a "sound check" by gently shaking an unfinished maraca. Students can try out different combinations and amounts of beans and find a sound that they like before sealing the tops of their maracas.
4. As each small group finishes adding their beans, help them tape the tops of their tubes on, just like the bottoms.
5. Have students add finishing touches to their drawings.
6. Finally, have students partner up or work in small groups to scotch tape the drawings around the tubes. Demonstrate with a student "partner" that one person can wrap the drawing around the tube and hold it in place, while the other person applies tape carefully along the seam.
7. When everyone is finished with their maracas, see if they sound the same or different from one another.





Preschool Educator Guide: Music and Sound

Clapping Class

A musical band works together to make a beautiful fun sound. We'll do the same thing together except we'll use something we all have: our bodies!

Materials

- Students

Instructions

1. Model a rhythm for your class to follow.
2. Try tapping different parts of your body and stomping your feet!
3. Create different beats and practice making rhythms in unison.
4. Discuss rhythm (pattern) and tempo (speed).

Curriculum Connections

Guide Theme

Classifying: Arranging or distributing objects, events or information according to some method or skill.

Creating Models: Displaying information, using multi-sensory representations.

Generalizing: Drawing general conclusion from particulars.

Observing: Becoming aware of an object or event by using any of the senses (or extensions of the senses) to identify properties.

Predicting: Making a forecast of future events or conditions expected to exist.

Animal Diversity: How do variations in form and function help animals meet their needs?

Book List

Dizzy Book – Jonah Winter

Can You Hear It – Metropolitan Museum of Art Staff

The Wheels on the School Bus Book – Mary-Alice Moore

Vocabulary List

- Vibration
- Tempo
- Instrument
- Sound
- Rhythm

Preschool and family programs at NYSCI are supported by the Altman Foundation, the Citi Foundation, the Liu Foundation, and the MetLife Foundation.

Major capital and operating support is provided by New York City through the Department of Cultural Affairs, the New York City Council, and the office of the Queens Borough President.

