



LESSON: Sounds Like Fun

Episode: "Jingle Dress"

Franny attends a pow wow in North America, where she helps Lacey, a Native American girl, decorate a ceremonial "jingle" dress. Lacey then dances to traditional drums. In *Franny's Treasures*, Franny, with the help of Bobby, the butterfly, prompts the audience to compare the sounds of Native American drum to those of an African djembe drum and bongos, played by a young Jamaican boy.

Grade
PreK - 2nd Grade

Subject
Physical Science

National Standards
NS.K-4.1, NS.K-4.2

Approx. Times
45 - 60 minutes
(Plus 30 minutes prep)

Learning Objectives/Skills

Children will:

- * **identify and recognize the source of various sounds.**
- * **learn that sounds are made by vibrations.**
- * **investigate and create sound vibrations.**
- * **observe sound vibrations through multi-sensory explorations.**

Overview

Sounds are produced by vibrations. Sound vibrations are produced from natural and man-made sources all around us (rustling leaves, street traffic, radio/TV, etc.). These vibrations travel through the air in the form of sound waves to our ears. Our ears hear the sound and our brain helps us to identify what the sound is.

In these activities, children are introduced to the concept of vibrations and how sounds are made from vibrations. Children will explore this concept further by engaging in a series of multi-sensory, hands-on explorations with various materials that will allow them to see, hear, and feel the effects of vibrations. They will make a musical instrument (a maraca) that they can shake to create vibrations.



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Materials

Classroom materials:

- Wooden ruler
- Metal coffee cans with lids
- Rice
- Wooden spoons
- Yarn or string
- Tape
- Ping-pong balls
- Tuning forks *
- Cups of water (1 cup per every 2 children)
- Duct tape, pre-cut into 3-inch strips (colored, if possible)
- Funnels
- Noise making materials (pennies, rice, seeds, beads, button etc.)
- Decorating materials (construction paper, crayons, markers, glitter, glue, or stickers)

Each child will need:

- Plastic drinking bottle or yogurt container (empty & clean)

(*Online you'll find many sources for tuning forks.)



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Prep

Activity 1:

- Set up a variety of noise-making objects that you can use to make sounds and hide them under a cloth or behind a box.

Activity 2:

- Set up the three sound stations with their appropriate materials on each table.

Station 1: *Materials: metal coffee cans with lids, rice, wooden spoons.*

- o Use duct tape to secure lid on can. Gather rice and wooden spoons (to be used as mallets).

Station 2: *Materials: yarn or string, tape, ping-pong balls, tuning forks*

- o Cut yarn or string into 12" pieces. Gather tape, ping-pong balls, and tuning forks.

Station 3: *Materials: tuning forks, cups of water*

- o Prepare plastic cups of water and gather tuning forks.





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Activity 1 - Mystery Sounds

1. Lead the children in a discussion about how we hear sounds and how different objects make sounds. Use the following questions to frame your discussion:
 - *How do we hear sounds?*
 - *What kinds of things make sounds?*
 - *Let's all be very quiet. What sounds do you hear now?*
2. Ask the children to close their eyes while you make various sounds for them to identify. Encourage them to name the object or action that is causing the sound. Shake coins, clap hands, rip paper, ring a bell, or create your own variety of sounds.
3. Instruct the children to open their eyes and congratulate them on identifying the sounds. Explain to the children that all of the sounds made were a result of some type of movement or vibration.
4. Demonstrate sound vibrations by placing a wooden ruler on the edge of a desk with eight inches of the ruler hanging over the side of the desk. Hold the ruler securely on the desk by placing your hand over it and use your other hand to pluck the end of the ruler that is hanging off the desk. The ruler will vibrate up and down and produce a low sound. Ask:
 - *What is happening to the ruler? Is it moving up and down or back and forth?*
 - *Does it make any sounds while it is moving?*
 - *Sounds are made from vibrations. A vibration is a back and forth movement. Can you wiggle your hand or body like a vibration?*
5. Tell the children that they are now going to feel a vibration from their own body. Direct each child to gently hold the tips of their fingers on their throat. On the count of three, all the children should say "aaahhhh." Ask:
 - *What do you feel?*
 - *Was your throat moving or shaking a little bit (Your throat or vocal cords were vibrating. When something vibrates, it makes a sound.)*
 - *In what other ways does your body make sounds?*



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Activity 2 - Sound Stations

1. Show the children the three sound stations that you've set up and explain that each station has different materials that they will explore. The materials at each station will help them see, hear, and feel vibrations. Ask the following questions before the exploration:
 - *Where do sounds come from? (Vibrations.)*
 - *How can we make a sound or a vibration? (A vibration is made when something moves back and forth.)*
 - *Do you think that we can see a vibration? Feel a vibration? Hear a vibration?*
 - *When you are at your sound station, look at all the materials on your table and think about how you could make those objects vibrate.*
2. Divide the children into three groups and assign them to one of the sound stations (six – eight children and one adult helper per station is recommended). Depending on the number of materials you have collected, children can work individually, in pairs, or as a group. Instruct the helper at each station to facilitate activities by assisting in sharing materials and encouraging the students to observe, predict, and experiment with different ways to make sounds using the materials.
3. Allow the children to explore the materials for at least five minutes at each station before rotating groups.
4. If time permits, once the children have finished the activities at each station, encourage them to use the materials to explore other ways to see, hear, or feel vibrations.





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Activity 2 - Sound Stations (continued)

Note: If you are limited in space or materials, instead of setting up sound stations, you can demonstrate each of the activities or have the children take turns trying out the activities in front of the class. Feel free to structure or modify the sound station activities according to your needs.

Sound Station 1

Materials: metal coffee cans with lids, rice, wooden spoons

1. Make sure the coffee can is empty and the plastic lid is tightly shut.
2. Sprinkle rice on top of the coffee can lid.
3. Strike the rim of the coffee can with a wooden spoon. Ask:
 - *What happens to the rice? Why is the rice jumping?*
4. Explain to the children that striking the coffee can with the wooden spoon causes a vibration. This vibration travels through the can to the lid causing the rice to jump up and down.

Sound Station 2

Materials: yarn or string, tape, ping-pong balls, tuning forks

1. Tape a piece of yarn or string to the ping-pong ball so that you can dangle it in front of you while holding the string.
2. Strike the tuning fork and then touch the ping-pong ball with the end of the tuning fork. Ask:
 - *What happens to the ping-pong ball? Why does it bounce repeatedly off the tuning fork?*
3. Explain to the children that vibrations can travel from object to object and even through the air. The vibrations traveling through the tuning fork are transferred to the ping-pong ball, causing it to bounce off the tuning fork.

Sound Station 3

Materials: tuning forks, cups of water

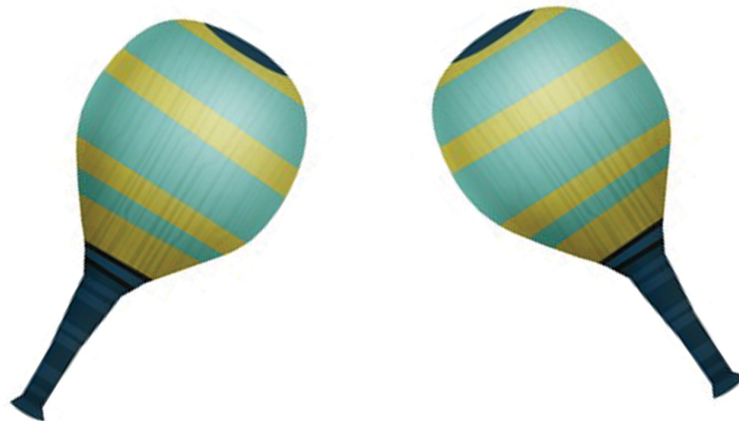
1. Strike the tuning fork.
2. Slowly place the tuning fork near the surface of water. Ask:
 - *What happens to the water? What is causing the water to spray?*
3. Explain to the children that the vibrations from the tuning fork will travel from the tuning fork to the water causing it to spray. Vibrations will also travel through the air before hitting the water and cause small waves to appear before the tuning fork actually touches the water. Ask:
 - *How close do you need to get for the water to start moving?*



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Activity 3 - Making Maracas

1. Now that the children have learned about sounds and vibrations, tell them that they are going to make a musical instrument called a maraca. Ask:
 - *Does anyone know what a maraca is? (A maraca is an object filled with materials that make sounds when you shake it.)*
2. Hand out an empty and clean plastic container (drinking bottle or yogurt container) with a lid to each child.
3. Assist the children in filling the container with your choice of noise-making materials: pennies, rice, seeds, beads, buttons, etc. Use the funnel if needed.
4. Ensure that the lid is securely shut by using duct tape (colored duct tape if available).
5. Encourage the children to be creative. Suggest that they decorate a pre-cut piece of colored construction paper that will fit around the container using crayons, markers, glitter, etc. Assist the children in wrapping and taping the decorated paper around the container. (If the shape of the bottle does not allow for paper to wrap around it, invite the children to decorate the bottle with stickers, glitter or other items)
6. Play some music and prompt the children to parade around the room shaking their maracas.





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Science Extensions

1. Assist the children in making a jingle wrist or ankle bracelet out of buttons or bells and string. Help them tie the jingle bracelet onto their wrist or ankle. Invite them to jingle their bracelet to different rhythms or tempos (fast or slow) while dancing in a circle.
2. Go on a sound expedition outside. Encourage the children to listen to all the different sounds around them.
 - *Play a listening game about the things you observe on your walk. Invite the children to complete the following sentence about their observations: "I hear with my little ear.... (for example, "I hear with my little ear a car passing by.")*
 - *Challenge the children to point to where the sound is coming from and describe what they hear.*
3. Listen to various types of world music. Show pictures of musical instruments from around the world. Ask:
 - *Can you match the musical instrument in the picture to the musical instrument being played in the music?*
4. Use household objects made from different materials as musical instruments (for example: pots, pans, bowls, spoons, paintbrushes, pencils, pens, etc.) Ask:
 - *How many different sounds can you make?*
5. Challenge the children to create a sound using only their bodies (for example, clapping hands, stomping feet, clicking tongues, whistling, toe tapping, slapping thighs, etc.) Ask:
 - *Your body is a musical instrument. How many different sounds can you make?*
6. Use a garden hose as a telephone to demonstrate how sound vibrations travel through the air. Have one child talk through one end of the hose while the other child listens. Ask the listener to report what the speaker said, and have the speaker verify it.



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Literacy Connections

- ***D is for Drum: A Native American Alphabet***, by Debbie Shoulders and Michael Shoulders
- ***Music, Music for Everyone***, by Vera B. Williams
- ***Northwoods Cradle Song: From a Menominee Lullaby***, by Douglas Wood

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