STEM to Read

Listen Carefully!

Explore the production of sound through multiple activities! Make your own instrument, experiment with tuning forks, learn about the vibration of sound, and more in this kit!

NEW MEXICO STATE LIBRARY

INVENTORY OF TRUNK

SHHHHH! Listen Carefully

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		<u>Activity Binder</u>
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❑	❑	Who Do You Hear?
❑	❑	Strumming Along
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❑	❑	Chiming Silverware and Hangers
❑	❑	Consumable and Restocking List
❑	❑	SHHHHH! Listen Carefully Supplement
❑	❑	*What are the Characteristics of Sound Waves?*
❑	❑	*How Fast Does Sound Travel?*
❑	❑	*Sound Facts*
❑	❑	*Encyclopedia - Sound*
❑	❑	*What is Sound?*
❑	❑	Parent surveys
❑	❑	4 laminated activity sheets
		<u>Books</u>
❑	❑	*Clink Clank* by Kelly Doudna
❑	❑	*The Country Noisy Book* by Margaret Wise Brown
❑	❑	*The Listening Walk* by Paul Showers
❑	❑	*Night Noises* by Mem Fox
❑	❑	*Oscar and the Bat: A Book About Sound* by Geoff Waring
❑	❑	*Polar Bear, Polar Bear, What do You Hear?* by Bill Martin Jr.
❑	❑	*Sound: Loud, Soft, High, and Low* by Natalie M. Rosinsky
❑	❑	*Sounds All Around* by Wendy Pfeffer
❑	❑	*Squeak, Rumble, Whomp, Whomp, Whomp!* by Wynton Marsalis
❑	❑	*Too Much Noise* by Ann McGovern
		<u>Who Do You Hear</u>
❑	❑	5 tin can telephones
❑	❑	4 plastic cup telephones

Over →

Strumming Along

- ❑ ❑ Plastic bowls
- ❑ ❑ Plastic cups of various sizes
- ❑ ❑ Small plastic containers

In Tune

- ❑ ❑ 2 sets of tuning forks (13 forks and 1 mallet)
- ❑ ❑ 2 blocks of wood
- ❑ ❑ 3 rubber mallets
- ❑ ❑ Index cards (blank)
- ❑ ❑ Plastic ziptop bags

Chiming Silverware and Hangers

- ❑ ❑ Hangers
- ❑ ❑ Silverware

To Be Provided by Borrowing Library*

- ❑ ❑ Balloons
- ❑ ❑ Salt
- ❑ ❑ Nylon string
- ❑ ❑ Rubber bands

* Some of these materials are provided in the kit but may be recommended to purchase as they will not be restocked by NMSL in the future.

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Who Do you Hear?

Beforehand:

Check that cup phones are not tangled together. Sound travels through the string/cording when cup phones are pulled so that string is taut.

Materials:

- Cup phones made with plastic cups
- Cup phones made with metal cans

Preparation:

Set cup phones on the table. Set up prompt.

Questions to Extend Discoveries:

Invite participants to talk to each other using a pair of cup phones. Have one person talk into the open end of the cup on one end of the cord while the other person listens in the cup at the other end. Listen to their discoveries and extend with the following questions:

"Talk into one cup while the other person listens at the other cup. What do they hear?

"Take turns talking and listening. What do you notice?"

"Experiment with holding the string taut and holding it loose. Is there a difference?

"Try whispering. Can the person at the other end still hear you? How quietly can you talk and still be heard?"

"Try the different types of cup phones. Does the cup material make a difference in sound quality?"

Strumming Along

Beforehand:

Check that there are a variety of rubber bands of different sizes and widths. Replace any that have dried out.

Materials:

- Rubber bands in a variety of widths and lengths
- Plastic cups of different sizes, heights, widths, and volumes

Preparation:

Set out a small handful of rubber bands and 6-8 cups of different sizes.

Create an example. Set up prompt.

Questions to Extend Discoveries:

Invite participants to create a mini banjo with the rubber bands and plastic cups. Encourage them to see what they can discover about sound by using the different size rubber bands and cups. Listen to their discoveries and extend them with the following questions:

"Try plucking the rubber band. What does it sound like?"

"Try strumming the rubber band. What does it sound like?"

"What do you notice about the sound made by a skinny rubber band?"

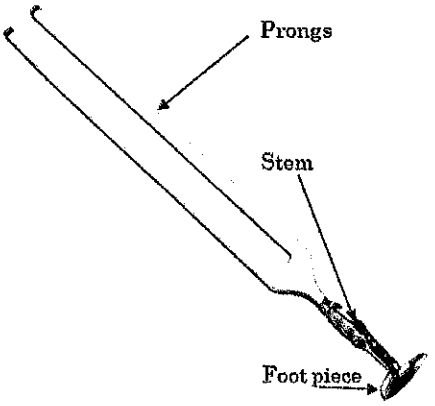
"What do you notice about the sound made by a wide rubber band?"

"Try the same type of rubber band on different size cups. What do you notice about the sound?"

In Tune

Beforehand:

Check to make sure no tuning forks are broken or have cracks.



Materials:

- Tuning Forks (2 sets of 8)
- Rubber Mallets
- Wood block strike plates
- Plastic re-sealable bags
- Index cards
- Plastic cups of different sizes
- 9 oz clear plastic cups (10)
- 2 oz portion cups (5)
- Balloons
- Salt

Preparation:

Place one (1) set of eight (8) tuning forks on the table. Set rubber mallets and wood strike plate, plastic bag, index card, and plastic cups on the table. Set up prompt.

Option: Cut the neck off of a balloon. Stretch the balloon over a 9 oz clear plastic cup so that it is like a drum. Make four. Half fill 2-3 portion cups with salt.

NOTE: Model appropriate use of the tuning forks. Tuning forks should be tapped with the rubber mallet or gently tapped on the wood strike plate to avoid breaking or cracking the prongs.

Questions to Extend Discoveries:

Invite participants to see what they can discover about sound by tapping the tuning fork with the rubber mallet. Alternatively, participants can tap the prongs of the tuning fork on the wood strike plate to start it vibrating. Invite participants to share discoveries and extend the exploration with the following questions:

"Tap the prongs of the tuning fork gently with the rubber mallet. What do you hear? What do you feel?"

"Gently touch the prongs of the tuning fork after you tap it. What do you notice? What do you feel?"

"Try different size tuning forks. What do you notice about the sounds that are made?"

"Hold the stem of a vibrating tuning fork to the middle of your forehead. What do you notice? What do you feel?"

"Touch the vibrating tuning fork to the plastic bag. What happens?"

"Try holding the bag in the air. Touch it again. What happens?"

"Touch the vibrating tuning fork to an index card. What happens?"

"Touch the vibrating tuning fork to the plastic cup. What happens?"

Option: Jumping Salt Patterns

Ask participants to sprinkle salt on top of the drum made from the plastic cup and balloon. Gently touch the vibrating tuning forks to the surface of the drum. Watch what happens. Encourage participants to repeat but with different size tuning forks or by touching the vibrating tuning fork to different locations on the cup and membrane.

"What happens to the salt?"

"Try with different size tuning forks. What do you notice?"

Chiming Silverware and Hangers

Beforehand:

Tie the middle of a 3-foot length of string around the spoon handle. Repeat for the other utensils and the metal hangers. On the hangers, tie the middle of the 3-foot length of string around the top hook of the hanger.

Materials:

- Metal silverware such as spoons or butter knives and clothes hangers, each with a string tied around the center.

Preparation:

Set a selection of 3 to 5 pieces of silverware and 3 to 4 hangers on the table. Set up prompt.

Questions to Extend Discoveries:

Start with a spoon. Model for participants how to wrap the one end of the spoon's string around one index finger and the other end of the string around the other index finger. Then carefully place their fingers in their ears. Ask participants to gently swing the spoon so that it bangs against the edge of the table. Listen to their discoveries and encourage them to extend their exploration using the following questions:

"Gently swing the spoon so that it bangs into the edge of the table. What does it sound like?"

"Try tapping the metal object(s) against a different surface. What happens to the sound?"

"Try tapping a knife. What does it sound like?"

"Try tapping a hanger. What do you hear?"

"Try changing the length of the string. What happens to the sound?"