

DO YOU HEAR WHAT I HEAR?

Background Information for Activity Leaders

Overview

Children will use their sense of hearing to observe the world around them. Children will also differentiate between observations and conclusions derived from their observations.

Key Concepts

- The sense of hearing provides an important source of information about the environment. Hearing is perhaps the one sense we take for granted the most. We often do not realize how many different sounds constantly flood our ears.
- Our ears capture **sound** and through a complex system transmit the information to the brain. The brain interprets the sound and thus we are able to hear. All of this takes place in a split second. We usually never think about how our ears and brains are doing their jobs to allow us to hear.
- Scientists make observations about the world around them. These **observations** require them to use their senses (sight, hearing, touch, smell taste). By experimenting with sound children begin to understand that sound can be observed, measured, and controlled in various ways.
- Children can form **inferences** from their observations. Sometimes their observations lead them to the wrong inference and that is perfectly all right. Inferences become hypotheses. A hypothesis is a tentative explanation for a feasible question. It is formulated from background information gained through experience or from research.

What to Expect

- Children will want to talk about what they hear DURING the walk; remind them that there will be time to talk about their observations AFTER the walk.
- Children should be encouraged to ask questions, seek information and validate explanations in thoughtful and creative ways.
- Children will need to be encouraged to describe things as accurately as possible, because careful, complete observations will enable them to compare their observations with those of the other children.

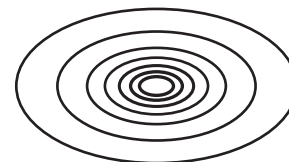
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Common Misconceptions

- *Children may believe that, "You can hear sounds in outer space."*

Sound travels as waves that cause the molecules of air to vibrate. Think about throwing a rock into water. The waves that occur are like sound waves. Without matter to vibrate, there would be no sound. This is why in a vacuum like outer space, there is no sound.



- *Children may believe that, "Listening to sounds won't help me make observations."*

The sense of hearing is often not recognized by children as an important source of information about their environment.

DO YOU HEAR WHAT I HEAR?



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Listening Walk Data Collection of Sounds

On my listening walk, I noticed the following sounds:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

DO YOU HEAR WHAT I HEAR?

Data Collection Sheet

Name: _____

Date: _____

WONDER What can you find out from the way something sounds?

RECORD Write down what you hear, in the order you hear it.

Data Table: Sounds

1.	6.
2.	7.
3.	8.
4.	9.
5.	10.

INFERENCE What can you tell us about what made this sound?

- _____
- _____
- _____
- _____
- _____

- _____
- _____
- _____
- _____
- _____

Set Up the Expedition

Materials:

For the activity leader:

- *Do You Hear What I Hear?* Learning Cards
- (1) audio sound track of common sounds on the APEX Science CD

For each child:

- (1) *Do You Hear What I Hear?* Data Collection Sheet
- (1) *Listening Walk Data Collection Sheet* per child
- (1) clipboard per child, or a hard surface to write on during the walk
- drawing paper
- crayons

Prepare the demonstration:

1. Walk around the school to identify good places to visit during the Listening Walk (near a road, an athletic field, a tree with birds, etc.)
2. Prepare a CD player that will be used to play the audio sound track of common sounds on the APEX Science CD.

Prepare the exploration:

1. Review the rules about being quiet and listening during this activity.
2. Give each child a clipboard, a pen or pencil, and a copy of the *Data Collection Sheet*.

DO YOU HEAR WHAT I HEAR?

Activity Leader's Guide

Group Size: whole group

Time: 45 minutes

Engage

- 1 Gather the children together.

Say:

"Today we will go on a very purposeful walk. We will be very quiet and we will 'tune in' to the sounds in and around the school." As you hand them their Listening Walk Data Collection Sheets, ask the children what sounds they think they might hear on the walk.

Say:

"If we make too much noise all we will hear is ourselves. We want to be detectives and listen to the sounds of the world around us. We will listen as we walk, and describe what we hear on the Listening Walk Data Collection Sheet." Children may carry clipboards to hold their Listening Walk Data Collection Sheets and to record what they hear. Remind younger children that when they come inside they will need to tell you what they heard so that you can write it down for them.

Walk children to the first 'listening area.' Remind children that they are not to talk at all and that they must record their listening observations. Walk the children slowly around the area. Follow the same procedures as you walk the children slowly around different areas of the school.

- 2 Bring children back to the activity room.

Ask:

"What did you hear during our walk?" Allow children time to share with the group the different sounds they heard.

Say:

"Listening closely is a way of observing or noticing things about the world. Scientists are very careful observers."

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Activity Leader's Guide

Explore

- 3** Distribute the Data Collection Sheets and the Learning Cards. Allow children time to complete the WONDER section and read the EXPLORE and RECORD sections.

Say:

“Let’s see how good you have become at noticing sounds. I am going to play a series of sounds, and you will try to notice what sounds you hear.”

- 4** **Say:**

“Write down observations about what you hear, but do not make inferences about what you hear. For example, if you notice that you hear monkeys howling, and birds screeching, you made an observation. Using these observations you might infer that you heard jungle animal sounds.”

Play the sounds from the audio sound tracks of common sounds on the APEX Science CD. Pause after playing each sound so that the children have enough time to think about the sound and record their observations on their Data Collection Sheet.

- 5** Allow children enough time to complete the RECORD and CONCLUDE sections of their Learning Card.

Conclude

- 6** Gather the children together and ask the following questions:

“What sounds did you observe?”

“What can you tell us about what makes this sound?”

Key to Sounds: telephone dial, dog barking, guitar, lion roaring, children playing, car horn, cow moo, seagulls and surf, ball play, burp.

Expand

- 7** **Say:**
“We notice things and make observations using our senses. Hearing is one of our senses. Let’s see how well you remember the sounds you heard in your favorite place.”

Ask the children to follow the EXPAND instructions on their Learning Card.

If time allows, gather the children together again and discuss what sounds they associate with their favorite place.

- 8** **Say:**
“Congratulations! You have earned your ‘Ask Me About Sound’ stamp. You are ready to tell people about sound.”

DO YOU HEAR WHAT I HEAR?

Expedition Learning Card

 How can you use sound to observe the world?

 **sound observation inference**

 Explore how sound can provide important information for a scientist.

1 WONDER What can you find out from the way something sounds?

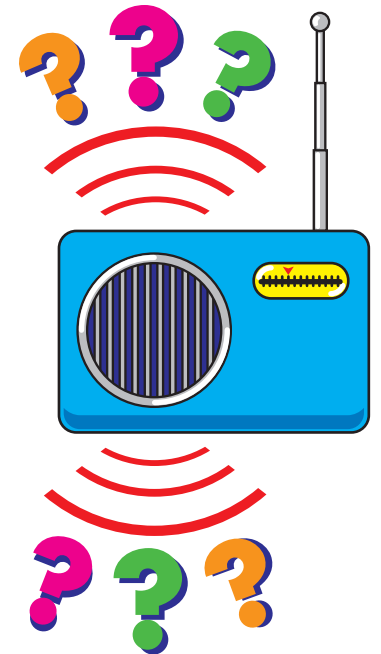
 Write or draw your ideas on your Data Collection Sheet.

2 EXPLORE Your activity leader will play a series of sounds, and you will listen carefully to notice what sounds you hear.

3 RECORD Write down observations about what you hear, but do not make an inference about what you hear.

Inferences are explanations of an observation. For example, if you observe sounds that you can identify as monkeys howling and birds screeching you might infer that you are at the zoo.

 Draw or write on your Data Collection Sheet what you hear.




DO YOU HEAR WHAT I HEAR?

Expedition Learning Card

- 4 CONCLUDE** Think about each of the sounds you just observed. Can you make an inference and identify what you think made each sound?



- 5 EXPAND** Sounds are everywhere. Through our experiences, we associate some sounds with certain places or certain people.

 Use drawing paper to make a drawing of your favorite place and make a list of all the sounds you heard when you were there.

Discovery

Why did we do that?

- Sounds are used by scientists to learn more about things in their environment.
- Sounds make us think of places and things.
- Some sounds can be misleading.

Congratulations!

You have earned your "Ask Me About Sound" stamp! Now you are ready to tell people about sound!

