Animal Sounds

Authors: UCLA Science Project
Grade Level / Course:1, Physical Science (Waves)
Slide Deck: Grade 1 Waves [Web Ver.]

A. Storyline Unit Overview:

1. Performance Expectations: Identify all the performance expectations that support this phenomenon. (The Wonder of Science)

1-PS4-1. Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.
1-PS4-4. Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.*
Supporting Performance Expectations
1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
1-LS1-2. Read texts and use media to determine patterns in the behavior of parents and offspring that help offspring survive.

Science and Engineering Practices What key SEP(s) will you be emphasizing in this unit? How is this emphasis appropriate for your grade band? (learning progression)	**Disciplinary Core Ideas** What are the Big Ideas in the bundle and how do they connect to the phenomenon? These should be sentences and not words.	**Crosscutting Concepts** What key crosscutting concept(s) will help students connect lessons together over time?
Observing and collecting data around parent-offspring relationships help us understand different ways we can compare and describe objects that make sound. Look	Babies learn or inherit behaviors and traits that are similar to parents; this includes the sounds and languages that we speak. Communication through sound helps us survive. Sound is made when an object vibrates and we can use our senses to see and hear it.	There is a cause and effect relationship between vibration and sound. Animals have different sounds that are made for different reasons. We can observe and use these patterns to communicate in different ways. .

2. Anchoring Phenomenon: *Does the phenomenon address concepts, accessible to students and can be leveraged for questions and thinking?*	***3. Driving Question:*** *What question will frame the phenomenon and students revisit throughout the storyline to develop an understanding?*
Videos of animals making sounds for different reasons.	How and why do animals make different sounds?

4. Summary Story/Gapless Explanation: Write an explanation of the observable & unobservable processes that explain the anchoring phenomenon.

Animals use sound for many different reasons. Baby animals can use sound to communicate needs like they are hungry. Parents can communicate to each other about danger. Sound is created when things vibrate. We can't hear all the sounds that are made. Making sounds is a behavior that animals and humans do. Sometimes humans make certain types of instruments that make special sounds and we call that music.

Available online on the SPIRAL Project website: https://www.spiralproject.org/storylines/waves-phenomena

B. Storyline		
Storyline Chapter Question to Make Sense of or Figure Out:	***How will the students use the SEPs to uncover the DCIs ? (What are they doing to figure out the concepts?)***	**What Students Figured Out about the Phenomenon**
What question about the phenomenon will be used to frame this "chapter" of the story?	*Investigable phenomena are small scale experiences that help develop one or more aspects of the Anchoring Phenomenon.* *What types of structures and strategies will deepen student thinking?*	*What should students take away and what new questions might arise from this lesson and learning?*
Chapter 1 **What is that sound?** **Materials:** ● Presentation deck with speakers ● My favorite stuffie template	**Target SEP: Asking Questions** **Introduction:** The unit opens with the teacher asking students to think about whether they or their family has any special sounds or words they use to get each other's attention? How did you learn to make that sound? Students participate in a quiet Listening walk - what types of sounds can we hear within and around our school? Can you point out where the sounds are coming from? **Process:** 1. Students collect data by looking at videos of different animals species interacting with each other and responding to the prompt: What do you see and hear? What do you wonder? Students see that many animals make sounds. Sounds create a reaction between the two animals. Triple Anchor chart: the sound we hear, the animal that's making it, what we think the sound means. **Initial Model:** 1. Students share their stuffie or a photo of their stuffie. Students describe their stuffie (if the stuffie was alive) and the types of sounds it might make and where they might come from. 2. Students may also choose one animal shown from the phenomenon clips to draw and describe the sound they make. ● Show where the sound comes from ● Tell your partner how you think the sound is made. **Closing** In this unit we will be studying the different types of sounds animals make and whether we can make devices that make similar sounds.	● Animals make sounds and it looks like they are talking. ● Humans use sound to talk or use language with animals too. ● Animals interact with each other to communicate sometimes with or without sound. ● Many animals use sounds for a lot of different purposes and especially for communication.

Chapter 2 **How can we compare babies and adults?** **Materials: Optional** ● [Book] Born in the Wild ● [Book] What Animal Parents Do ● [Book] Follow Me (Nat. Geo.)	**Target SEP: Asking Questions and Data collection (patterns)** **Introduction** We talked about different reasons animals make sounds. This made me wonder, do you or anyone you live with have a special sound they can make or use? Copy-Cat: Copy the sound being made in either small groups or the whole class. What do you think the sound means? **Process** 1. Students share a picture of a trusted adult and how they are similar and different. Similarities and differences can be either a behavioral or physical feature or trait. 2. Discuss similarities and differences of "**traits**", or features in organisms. 3. Students sort cards to match animal parents to animal babies and discuss how do parents and babies compare? What types of sounds do we think they make? Do you know how to use a different name for this animal (nickname, synonym, or different language)? Next, a Read Aloud, Are You My Mother? 4. Language identified in the Read Aloud will help students use comparison words to describe and compare animal babies and adults. **Additional Opportunities:** Students can engage in more fictional and informational text around animals and their parents to explore that relationship. Additionally, students can further explore how sound, specifically music, might spur emotions or other behavior; that is, sound can have an effect on someone or something. **Closing:** Parents and babies make similar sounds but babies are more squeaky and high.	● Adult animals look different depending on what type of animal it is. ● Different animals have different types of bodies and we can use many different words to help us describe how animals might be similar or different. ● We predict that many babies look similar to their parents, just much smaller. Babies and adults can make similar sounds.

Chapter 3 **What do different animals sound like?** **Materials:** ● Chromebook with Animal sounds page loaded or shared to google classroom ● Animal sounds chart	**Target SEP: Asking Questions and Analyzing Data (patterns)** **Introduction:** Start with asking students about different animal sounds and if they can make them, or introduce the Animal Sounds Quiz. It might be hard for us to understand or make the sound but it is easy for the animal. **Process** 1. Small Groups: Students use soundboard books or a digital soundboard to collect observations that describe the different types of sounds animals make. Each student chooses two-three animals to listen to the sound, as well as records how they think that sound can be written out. 2. As a small group, students share their favorite animals and sound from the habitat. 3. Groups return to the whole group and listen to different animal sounds together. Would we describe sounds differently if we spoke another language? **Closing:** Looking back to our list of sounds, do you think that people around the world use the same word to describe what a dog sounds like?	● Animals make different sounds. ● We can compare the sounds animals make to everyday sounds. ● Some animals make more sounds than others. ● Animals of the same species know what the sounds mean. ● Babies learn how to make sounds from their parents.
Chapter 4 **Where does sound come from?** **Materials** ● Rubber Bands ● Plastic Cups ● Tuning Fork ● Striking Block ● Rubber Chicken ● Shakers ● Whistling tube or Balloons ● Sounds centers journal handout	**Target SEP: Carry Out an Investigation and Analyzing Data (patterns)** **Introduction:** Can we think of anything in the world that sounds similar to a bird that sounds like a whistle? **Process** 1. Students will start the unit by placing their fingers on their larynx or voice box and answering simple questions. The students should be able to feel vibrations when they respond. 2. Students use vibrations to make different sounds. Students rotate through sound centers to explore the concept of vibrations such as rubber band cups, tuning forks, rubber chickens and shaker bottles.	● Sounds are made when things vibrate. ● Different vibrating materials make different sounds.

	3. As they rotate through the stations students will record observations about what they see and hear. 4. Did all of the instruments make the same sound? Why do you think they made different sounds? How was your throat similar to materials in the sound centers? What did everything need to do to make a sound? **Additional Opportunities:** Students will also hear a Peruvian water whistle as a class and the ways in which it sounds like the animal depicted on the jar. Interview friends and family-are there any instruments important to you, your family, your culture or your traditions? **Closing:** To make a sound all materials must vibrate. Update Summary Wall.	
Chapter 5 **Can I create a device to communicate like an animal?** **Advance Prep Materials (collect or ask students to bring in)** ● Provide assorted recycled materials e.g. shoe boxes, paper rolls, plastic water bottles with lids, beads or beans for percussion, saran wrap, ● Rubber bands, balloons, tape, twine or string,plastic wrap	**Target SEP: Planning and Carrying out an Investigation** **Introduction:** The class begins by reflecting on what they learned in the previous chapter. To support language development, students practice using different forms of the word vibrate for a video and within a sentence. **Process** 1. Students first consider how they might communicate with each other over a large distance like a soccer field. They then think about other animals that might want/need to communicate over long distances. 2. Students find inspiration from animals to make a device that makes sound or music. 3. Students have the option to build instruments in pairs or alone. 4. Groups test instruments to see how far away the instrument can be sound outside.	● If an animal has been taught what a sound means then I can use it to communicate. ● We can use body movements to communicate too. ● We can use our sounds or body gestures to communicate important transitions and events in our classroom such as quiet, recess time, stretch time, patience time.

	Closing: We can use what we have learned about materials, vibration, and sound to make an instrument. Some sounds are easier to hear further away than others. Sounds made with instruments can be used to connect us together. It helps us feel a sense of belonging.	
Chapter 6 **How do animals make different sounds?** **Materials:** ● Final Model Handout	**Target SEP: Obtaining and Communicating Information and Construct Explanations** **Introduction:** Have students take time to review the summary individually or as a class. ● On a purple sticky note students will record what was their favorite part of the unit ● On a yellow sticky note students will record what they think is the most important thing they have learned from the unit ● Have students connect with two people they haven't spoken with in the last two chapters to share their sticky and then collect. **Process** 1. Students create a final draft about their stuffies and the sounds that they might make. 2. Next, students model how their instrument works and the vibrations of sound that are produced by it. 3. Students share their final writing with a partner. **Closing:** Have students share their final draft with a partner in the class.	**Final Model Criteria** ● Model shows/explains how their stuffie (animal) would make a sound ● Model shows/explains how their instrument would make a sound ● Model shows/explains sound is made by vibration or a vibration can make the sound ● Model compares how the sound made from the stuffie compares to the sound made from the instrument
Chapter 7 (Bonus) **How can I share what I have learned with my community?**	**Target SEP: Design a Solution** **Introduction:** Who might be an important person to hear about what we have learned and listen to our instruments? Students present their instrument and model to a buddy (4th grade has sound standards too) or a person they are connected to outside the class e.g. trusted adult or older sibling.	

	Process 1. Brainstorm: What is another thing could we use our instruments for? Students come up with some other options for their instruments and then choose one to do. a. Option A: Send secret messages: b. Option B: Combine instruments together to make a class song c. Option C: Student/Teacher Choice	

Resources:

- **Birds Feeding in Nest**
- **Puppy Whining from Mom**
- **Baby Seal Calling for Mom**
- **Moms and Babies Compilation**
- **Moms Feeding Babies**
- **Giving Birth and Very Early Babies**
- **Animal Moms Compilation**
- **Mom and Baby Picture Slideshow**
- **Awesome Animal Moms**
- Bird baby vs. adult photos