



Sound Mapping

Grade Level: 3-8
Length: 15-30 Minutes
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Adapted from a lesson plan by Cindy Lou Aillaud and an activity by Katie Gavenus, Center for Alaskan Coastal Studies

NGSS Standards

If you repeat the activity in different habitats, this can support:

2-LS4-1 Make observations of plants and animals to compare the diversity of life in different habitats

3-LS3-4 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all

Crosscutting Concepts

Patterns Observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them.

Scale, Proportion, & Quantity In considering phenomena, it is critical to recognize what is relevant at different size, time, and energy scales, and to recognize proportional relationships between different quantities as scales change.

Overview

Paying attention to sounds can help us understand how ecosystems function.

Objectives

- Students will listen for five minutes in a semi-isolated space
- Students will observe sounds and record them on their sound map
- Students will develop a sense of place through listening in their environment.

Materials

- Notecards, Journals, or Paper
- Pens, Pencils, or Colored Pencils/Markers

Background

Any relevant background information that puts lesson into greater perspective.

Preparation

Find an outdoor area. This spot should be safe, comfortable, and in a location where students can observe quietly without disrupting others.

Introducing the Lesson

Begin by taking students to an outdoor area and explain that they are going to find a place to sit in the ecosystem.

Notes

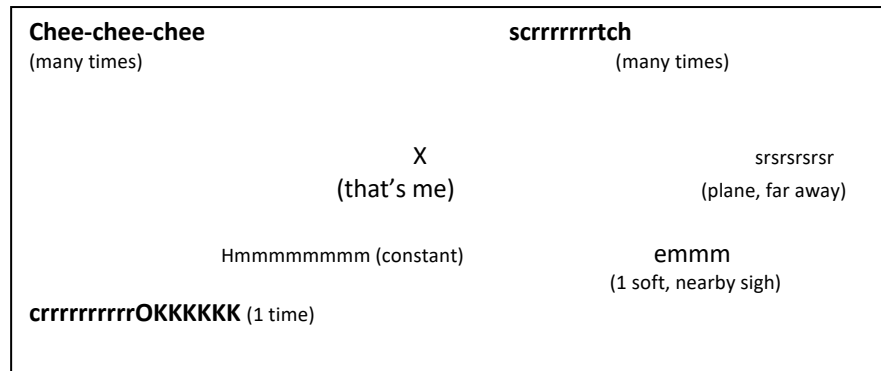
>>Educator Tip: While you might think that ecosystems only exist “outside,” human built environments are ecosystems too! It is great to do this activity outdoors, but it can also happen indoors. An open window, if possible, allows for observing sounds coming from both inside and outside the building. If it isn’t possible to open a window, that’s fine too! There are plenty of sounds inside buildings. If you are inside, try to find a place that isn’t dominated by one loud, nearby sound (like a TV or radio); instead, choose a spot where you can hear a variety of sounds.

Activity

>>Educator Tip: Use a quiet and calm, but enthusiastic tone as you describe the activity. Clearly explain how students should select their spot. I’ve found it useful to require them to choose a spot that is safe, comfortable, and where they can quietly focus. You will also want to set boundaries for how far they can go in selecting their spot and provide a specific amount of time (usually about 1-2 minutes) for them to find a good spot.

1. Once students have picked their spot, provide them with a notecard, journal or paper and a pencil/pen. Instruct them to make an X in the center of the map. This marks their location in the ecosystem.
2. Explain that over the next 5-10 minutes, they will listen closely and document the sounds they observe around them, noting both the type of sound and the location. Each sound should be somehow recorded on their map; they can use drawings, symbols, simple descriptions, or onomatopoeia to mark the sounds. Each time they mark a sound, they should be sure to choose the location on the map that indicates both distance from them and direction.

>>Educator Tip: Before they disperse, demonstrate to students how to complete a sound map, by actually listening yourself and marking on a whiteboard or piece of paper what you hear. Suggest a variety of ways for students to record sounds on their map: common words, descriptions of the sounds, onomatopoeia, symbols, shapes, etc. Ask students to record the location, description, and frequency/number of times heard for each sound. Below is a sound map I did while writing this lesson plan. I’m in the house, but windows are open so I can hear noises from the front and back yard:



3. Have students disperse to their locations and work on their sound maps. Make sure you let students work for at least five minutes on their sound map. Extend for longer if they continue to be engaged and you are not confronted by time constraints or environmental factors.

Wrap-up

After the sound mapping is finished, have learners share their observations with you, partners or a larger group. If needed, question prompts include:

- Did you hear anything surprising?
- What was your favorite sound? Can you imitate it?
- Did you notice more sounds coming from a certain direction? Why do you think that is?
- Did you hear any animal sounds?
- Did you hear any sounds created by plants?
- Did you hear any sounds of water?
- Did you hear any human sounds?
- Did you hear any mechanical/machine sounds?
- Did you notice any repetitive sounds or specific patterns of sounds?
- How did it feel to listen to sounds?
- After sound mapping, what questions do you have about the ecosystem?

You can repeat the sound mapping activity in different locations, at different times of day, or in different seasons. How do morning sounds on the playground compare to evening sounds on the playground? How do the sounds in the forest compare to sounds near a creek? How do the sounds of late winter compare to the sounds of early spring?

Assessment

Review student sound maps for thoroughness and effort. Listen during discussion for evidence that students have gained the content knowledge and skills in the scientific practice(s) relevant to your target performance expectations.