

DIGITAL DISCOVERY WORKSHOPS

Teacher Toolkit: Global Soundscapes | Grades K–21



PROGRAM OVERVIEW

Get familiar with the program content.

Program Description

Embark on an ear-opening journey into the science of sound and the exciting new field of soundscape ecology. Hear sounds from across the globe as we investigate the properties of sound and learn about the tools that scientists use to record and analyze complex soundscapes. Discover what soundscapes can tell us about the changing health of our planet.

Program Objectives

Participants will become aware of the new field of science known as soundscape ecology and be introduced to scientists working in this field across the world.

Participants will understand that sound is a vibration and has measurable properties such as frequency and amplitude.

Participants will practice interpreting a spectrogram graph.

Participants will compare and contrast soundscapes from different times or locations to identify patterns and make inferences about the biodiversity of the ecosystem.

Participants will become familiar with various ways that animals use sound and how human activity may impact those sounds.

Program Key Words (English/Spanish)

Soundscape / el paisaje sonoro

Ecologists/ el ecologista; la ecologista

Biophony / la biofonía

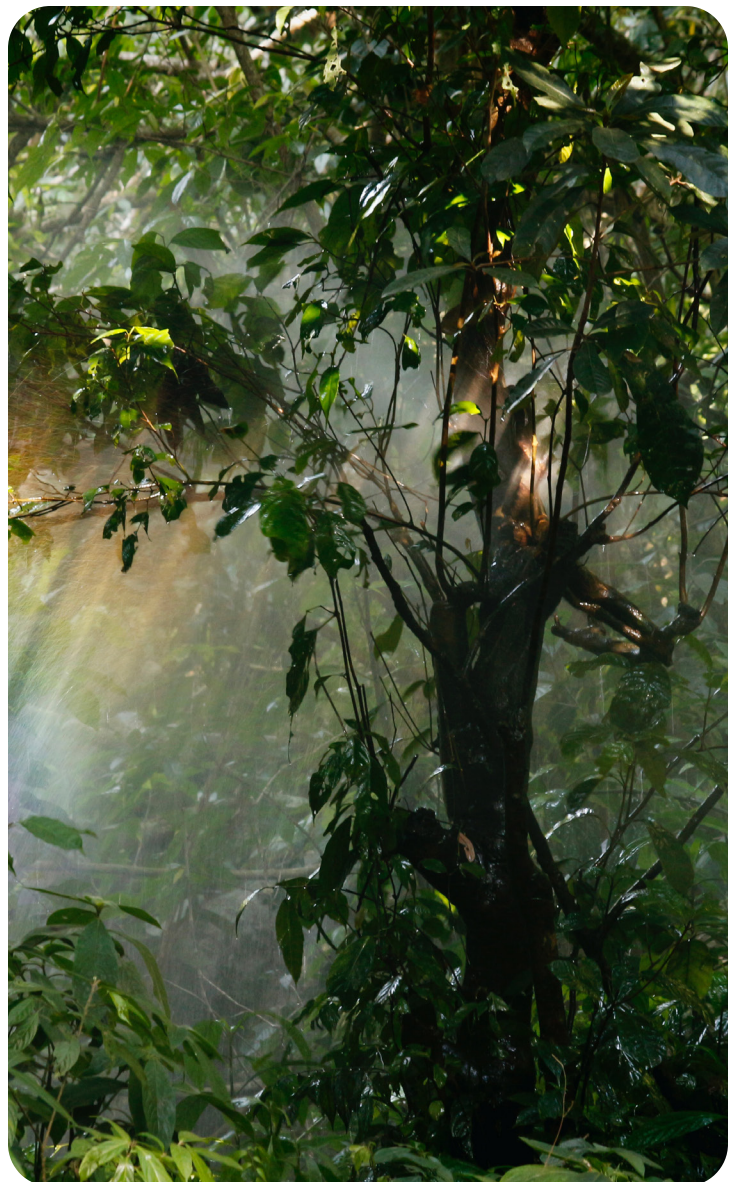
Geophony / la geofonía

Anthrophony / la antrofonía

Vibration / la vibración

Frequency / la frecuencia

Amplitude / la amplitud



Show us how you're being curious! Share your results with us.

PACIFIC
SCIENCE
CENTER



DIGITAL DISCOVERY WORKSHOPS

Teacher Toolkit: Global Soundscapes | Grades K–21



Program Outline

Subject to change

- Introduction of program and expectations.
- Listen to and describe a soundscape.
- Categorize sounds into biophony, geophony, anthrophony.
- Introduction to Costa Rica soundscape:
 - Sound as a vibration.
 - Demonstrate frequency and amplitude.
 - Learn to read a spectrogram graph.
 - Compare two rain forest spectrograms.
- Introduction to Hawaiian reef soundscape:
 - Compare two reef soundscapes and discuss acoustic masking.
- Introduction to Mongolian soundscape:
 - Explore human vs animal sound ranges.
- Make our own spectrogram!
- Program conclusion.

[View Supported NGSS](#)



BEFORE THE PROGRAM

DISCUSSION PROMPTS

Use these prompts to lead an optional pre-program discussion and reflection in your class.

- What sounds do you hear around you each day?
Draw a picture or write a list of the sounds in a place you often visit.
- What do you think sound can tell us about a place?
If you showed your picture or list to someone else, what would they be able to learn about the place?
Try it!



Show us how you're being curious! Share your results with us.

PACIFIC
SCIENCE
CENTER



DIGITAL DISCOVERY WORKSHOPS

Teacher Toolkit: Global Soundscapes | Grades K–21



DURING THE PROGRAM

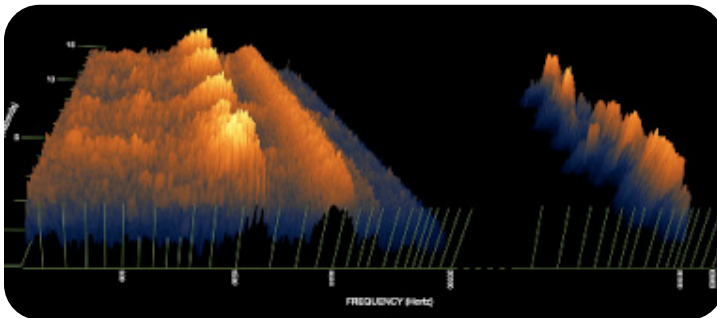
Print the optional worksheet for your students to follow along with during the live presentation. The back of the worksheet includes additional prompts for after the program.

PRINTABLE WORKSHEET

- Global Soundscapes Printout: [Click to download](#), then print double sided.

AFTER THE PROGRAM

These optional extension resources can be used within the learning space, or shared with students to do at home with their families.



ACTIVITY GUIDES

- **Observations in Sound | Observaciones en el Sonido:** Use your new sound observation skills to create a sound map of a place of your choosing. Activity time: 15–30 minutes.
- **Dancing Salt:** Explore vibration and sound waves in this challenge to make salt dance using a simple drum. Activity time: 20–30 minutes.

ADDITIONAL RESOURCES

- Make your [own Spectrogram](#) and visit [ilisten.org](#) for an interactive virtual exploration of a soundscape lab.
- Explore the [Your Ecosystem Listening Lab \(YELL\)](#) Instructor Guide for dozens of lesson plans and activities from the Center for Global Soundscapes and Purdue University. (*Recommended for grades 5–8*) time: 20–30 minutes.



Show us how you're being curious! Share your results with us.

PACIFIC
SCIENCE
CENTER



DIGITAL DISCOVERY WORKSHOPS

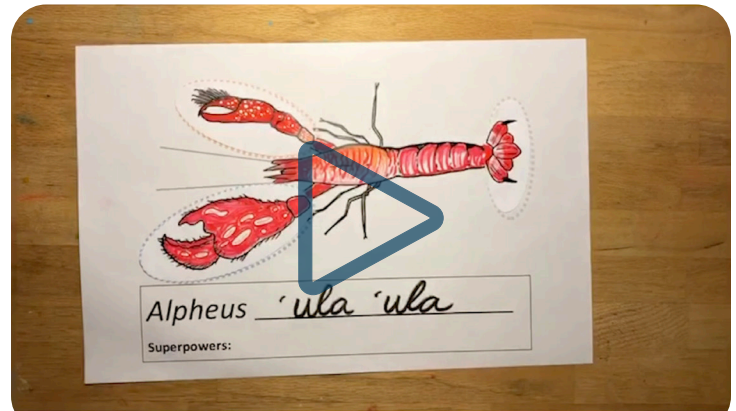
Teacher Toolkit: Global Soundscapes | Grades K–21



AFTER THE PROGRAM CONTINUED

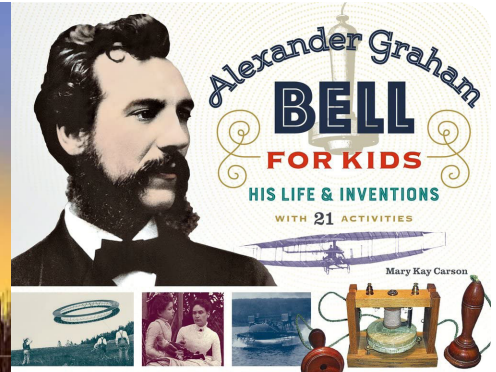
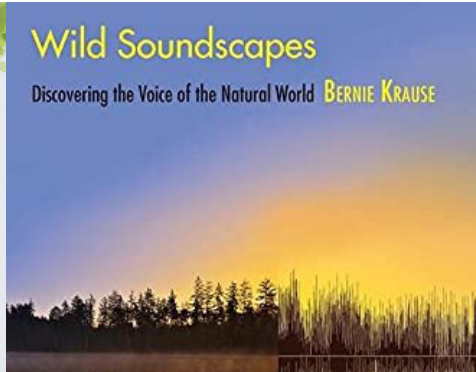
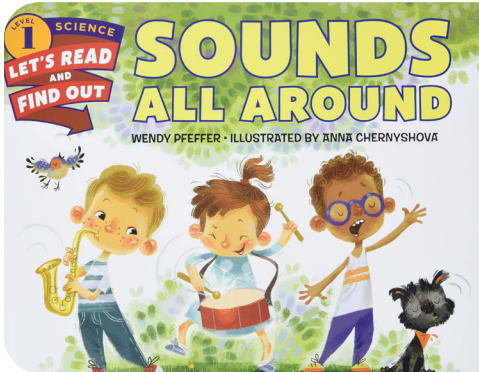
STEAM VIDEO

- **Meet Snapping Shrimp and Make Your Own:** In our program we heard some snapping shrimp. In this five-minute video, meet a scientist studying these shrimp and make your own snapping shrimp using the [follow along template](#). Activity time: 30 minutes.
- Build your own rubber band guitar using simple materials as you explore the physics of sound in this follow-along activity video: [Amped about Acoustics](#). Activity time: 20 to 30 minutes.



READING LIST

- Check out the [Global Soundscapes reading list](#) for STEAM books related to the program themes.



For more activities with simple materials, check out the [Curiosity at Home / Curiosidad en Casa](#) web page. Explore activity sheets by age group and topic in both English and Spanish



Show us how you're being curious! Share your results with us.

PACIFIC
SCIENCE
CENTER

