



LESSON PLAN

The Value of Listening



RELATED FILM

Sanctuaries of Silence

BY ADAM LOFTEN
AND EMMANUEL VAUGHAN-LEE



The Value of Listening

Key Idea

Increasing noise pollution and the loss of silence in our modern world significantly impacts people as well as the environment. Learning how to listen may be one solution.

Background

The world is becoming increasingly loud with noise pollution. Fewer and fewer geographical areas remain free from the sounds of airplanes, cars, trains, and other modern human activities.

Recent research states that in the most protected areas within the United States—including national parks, wilderness areas, and open spaces—noise pollution is on the rise. A recent study by the National Park Service and Colorado State University shows that noise levels caused by human activity are twice as loud as natural sounds, such as wind, running water, animal noises. In 12 percent of U.S. wilderness areas, the most protected of public lands in the U.S, noise levels are twice as high, primarily due to human transportation sounds.* This increase in noise, according to a study published in *Science Magazine*, goes beyond the levels that are currently known “to interfere with human visitor experience and disrupt wildlife behavior, fitness, and community composition.”**

The impacts of noise are predictable, such as hearing loss and sleep disturbances, while other impacts can be surprising, such as an increase in blood pressure, cognitive delays, memory loss, and general heart health. The U.S. Environmental Protection Agency warns that noise can impact children during specific phases of development, hindering speech, language acquisition and language-related skills like reading and listening.*** Noise also impacts the non-human world. Sound is critical to animal communication and noise pollution can interfere with the capacity to hear and transmit important information, such as avoiding danger and locating prey. Some effects include the interruption of mating rituals and the relocation of birds and animals from noisy areas, which can have far-reaching impacts throughout the ecosystem.****

In this virtual reality/360 film, *Sanctuaries of Silence* by Adam Loftin and Emmanuel Vaughan-Lee, acoustic ecologist Gordon Hempton describes the impact, value, and power of silence on human beings. The film is set in the Hoh Rain Forest within Washington State’s Olympic National Park,



Film: 7 minutes

Class: 60 minutes

SUBJECT AREAS

HIGH SCHOOL

- English Language Arts
- Geography
- Environmental Science
- Modern World Studies
- Sociology

COLLEGE

- English
- Ecology
- Geography
- Environmental Studies
- History
- Sociology

THEMES

- Effects of modernization
- Human connection to the environment
- Connection to place
- Listening

MATERIALS

- Online access to the film
- Equipment for showing the film
- VR equipment (Mobile phones, Tablets, or VR headsets)
- Conversation Cards

PREPARATION

- None



The Value of Listening

one of the most ecologically diverse environments in the United States, as well as one of the quietest places in North America. The area is filled with the natural sounds of the temperate rainforest. The film provides an opportunity to experience the soundscape of the Hoh rainforest through Hempton's perspective. He considers the impacts of noise pollution on humans and the natural world while sharing perceptions that illustrate the power of silence as a gateway to beauty and reflection in our noisy world.

*Tom James, "[Human noise pollution 'pervasive' in U.S. protected areas.](#)" *Reuters*, May 4, 2017.

**Rachel T. Buxton, Megan F. McKenna, Daniel Mennitt, Kurt Fristrup, Kevin Crooks, Lisa Angeloni, and George Wittemyer, "[Noise pollution is pervasive in U.S. protected areas.](#)" *Science Magazine*, May 5, 2017.

***Environmental Protection Agency, "[Noise and Its Effects on Children.](#)" PDF.

****Penn State Department of Ecosystem Science and Management, "[Noise impacts to wildlife – A review of pertinent studies.](#)" PDF.

Connections to National Standards

Common Core English Language Arts. SL.9-10.5 and SL.11-12.5. Make use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understandings of findings, reasoning, and evidence and to add interest.

Common Core English Language Arts. SL.11-12.1.c. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives.

College, Career, and Civic Life (C3) Framework for Social Studies. D2.Geo.6.9-12. Evaluate the impact of human settlement activities on the environmental and cultural characteristics of specific places and regions.

Next Generation Science Standards. HS-LS2-7. Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.



The Value of Listening

Lesson

SETTING THE STAGE

Ask students if they have heard the terms acoustic ecology or soundscape ecology. Share with students that this field of study identifies and documents sounds—natural as well as man-made sounds—to deepen our understanding of the relationship between humans and the environment.

Prepare to share with students this brief 3-minute video, [Soundscape Ecology](#), from PBS and NOVA, which defines and describes this field of ecology.

Ask students to list three characteristics of soundscape ecology they learned from the video. (Some answers include: Soundscapes reflect the noise of an environment in a single moment of time, recorded soundscapes can monitor environmental change; soundscapes include 3 categories of sound—geophysical, biological, human; in diverse ecosystems, areas disturbed by humans have less active and less diverse soundscapes; and listening to soundscapes over time can reveal which elements in the environment are struggling, thriving, or disappearing.)

ENGAGING WITH THE STORY

Explain to students that they will be viewing a film about Gordon Hempton, an acoustic ecologist and researcher who has been studying the impacts of sound and silence for 35 years. Hempton records the sounds of nature and founded One Square Inch, a non-profit research project committed to studying and preserving an area in the Hoh Rainforest of Olympic National Park on the west coast of the United States. One goal of the project, according to the organization's website, is described in the following statement: "Our hope is that by listening to natural silence, it will help people to become true listeners to their environment, and help us protect one of the most important and endangered resources on the planet, silence."

Ask students to watch the film while taking note of Hempton's experience of sound and silence. Share the following questions with students prior to watching the film: How would you characterize Hempton's relationship to silence? Why do you think Hempton values silence? What role does silence play in his life and his work?



Delving Deeper

After viewing the film, lead a discussion with questions such as:

- In the film, Gordon Hempton says a sound transformed his life. What was that sound? Where and when did he experience this sound? (A storm, thunder and rain, while on a road trip when he was 27.)
- Hempton is an acoustic ecologist, committed to recording the earth's rarest sounds. Based on evidence from the film, describe Hempton's view on how humans impact the environment. What is his view on how the sounds of nature impact humans?
- Hempton said in an interview, "Listening is not about sound." What do you think he means by this statement? In your own words, define what it means to listen. Is the experience of listening to a person while in conversation different to the experience of listening in nature? Describe the similarities and differences.
- A microphone has some qualities that make up a "good listener," suggests Hempton. What are some of these qualities? (Answers include: It doesn't listen for what's important; it doesn't judge; it doesn't interfere.) If we listened in this way, without judgment or interference, do you think we could hear more of our surroundings, including each other? Why or why not?
- Research shows that even just two minutes of silence can have positive impacts on a person's heart rate, blood pressure, and respiratory frequency, according to the National Center for Biotechnology. "Silence nurtures our nature," said Hempton in the film. What do you think about this statement? Do you think silence could nurture humans? Why or why not? Drawing from your own perspective and experiences, what might be one positive impact of silence?
- Hempton says that there are only 12 places in the United States not impacted by noise pollution. In these places, one can experience uninterrupted natural noise for at least 15 minutes. What might be the human costs if silence became extinct?



The Value of Listening

- Hempton said in the film, “Silence is the poetics of space; what it means to be in a place.” What do you think he means? What might you hear if you were listening to a whole place versus listening for a particular single sound?
- “Noise detaches us—not only from our surroundings but from each other,” said Hempton in an interview with *The Sun Magazine*. In what ways have you noticed noise as a cause of distraction in your life? In those around you? What might happen if noise wasn’t a distraction or didn’t “detach” us?
- Hempton suggests that listening “connects us back to the land.” Do you agree? Why or why not? What are some of your favorite sounds in nature? Why? Describe the sound in detail as well as the land/location of where you were when you heard this sound. How do these sounds connect you to where you live?
- “Silence, said Hempton, “isn’t the absence of something, but the presence of everything.” What do you think he means by “presence”? How might silence have a presence?
- Do you think silence might challenge us to become active listeners? Why or why not?

For additional classroom discussion prompts, use the conversation cards to further engage students with the film in small groups.

Reflecting and Projecting

Give students one of the following reflective writing prompts or activities to demonstrate their understanding of the story. (Note for teachers: Just as quotes from a book or text are used to prove an analytical thought, students use the film to justify their reasoning.) The conversation cards can also be used for reflective writing activities.

- To combat noise pollution and protect the environment, the Japanese Ministry of the Environment appointed 100 Soundscapes of Japan. Residents completed a survey nominating their most favorite and beautiful soundscapes within Japan. From the nominations, 100 sounds were selected to protect that place and sound, similar to a heritage site. Listen to one of the sounds protected, [a bell at the Zenko-ji Temple in Nagano](#). Listen to a few of the [100 sounds](#) by clicking twice at the top of the sound column.



The Value of Listening

- You will conduct your own survey and ask five people—including students, teachers, family members, and community members—what their favorite sound is near their home/community. Ask them the following questions: What is your favorite sound near your home/community? Why? In what way has this particular sound impacted your life in a positive way? How might this sound act as a symbol for your local place? What might happen if this sound was no longer heard? In 2-3 paragraphs describe your experience in conducting this survey and include the answers to your questions. Were you surprised by any of the responses? Did anyone include stories associated with these sounds? If so, include those in your description. (CCSS.ELA SL.11-12.1.c)
- In a TEDx talk, Gordon Hempton said, “If you are going to listen, you have to be willing to change.” What are some changes we can all take towards protecting our environment from noise pollution? One example of a positive implementation towards solving noise pollution is at [Muir Woods National Monument](#), a forest of old growth redwoods on the coast of northern California. The managers at the park posted signs for visitors indicating “Quiet Day” or “Quiet Zone” to encourage visitors to reduce noise pollution. Sound levels decreased significantly.
- As a homework assignment, you will interview 2-3 people which could include parents, neighbors, or community members. Describe that you would like to propose a “Quiet Zone” or a “Quiet Day” in your community to reduce noise pollution. Ask your interviewees the following questions: Where would you post a “Quiet Zone” in your neighborhood? Alternatively, where would you place a sign for a “Quiet Day”? Do you think this approach would work in your community/neighborhood? Why or why not? What impacts do you think the sign could have on the community as well as on the natural environment? Record your answers as well as any insights this activity provided. Did you come across any challenges? If so, what were they? (NGSS.HS-LS2-7)

A Listening Activity: Part 1

Gordon Hempton said that sound is part of what it means to be in a place. Included below are five exercises to guide you through the exploration of



The Value of Listening

place through sound and listening. For best results, turn off your phone to avoid distractions. (C3.D2.Geo.6.9-12)

1. Where is the place you spend the most time indoors? Go to this place. It could be a room in your home. Sit or lay down in a comfortable position. Close your eyes and listen to all of the sounds around you, nearby and far away. What do you hear?
2. Find an urban environment—for example a local coffee shop, a busy street corner, or your rooftop. For 5 minutes, listen to the sounds around you, near and far. Try to take it all in, in equal value. What do you notice?
3. Find a natural/green space within your town or city—a public park or garden or a tree in your yard. Close your eyes. Listen. How is the quality of sound different in this location compared to the location in exercise #2?
4. Seek out a natural space, away from the hustle and bustle of the city. This space could be a wooded trail or a meadow with a stream. Sit or lay down with your eyes closed. For 10 minutes listen to the sounds around you. What do you notice?
5. Return to the place where you spend the most time indoors. Repeat the first exercise. Has your experience of listening changed? If so, how? In 2-3 paragraphs describe your experience, noting the sounds you heard and your general observations in each exercise. Include which sounds had the biggest impact on you and why.

A Listening Activity: Part 2

Create a sound map for each of the locations in Part 1. After each exercise, draw the sounds you heard in each area. Compare each location. Which sounds overlap? (C3.D2.Geo.6.9-12)

Resources

Gordon Hempton and John Grossmann, *One Square Inch of Silence: One Man's Search for Natural Silence in a Noisy World* (New York: Free Press, 2009).



The Value of Listening

(Organization founded by Gordon Hempton) [One Square Inch](#).

(Website) [The Sound Tracker](#).

(Interview) Leslee Goodman, "[Quiet, Please: Gordon Hempton On The Search For Silence In A Noisy World](#)." *The Sun Magazine*, September 2010.

Ula Chobrak, "[Noise pollution is invading even the most protected natural areas](#)." *Science*, May 4, 2017.

(Interview) Krista Tippett, "[Silence and the Presence of Everything](#)." *On Being*, December 29, 2016.

Daniel A. Gross, "[This Is Your Brain on Silence](#)." *Nautilus*, July 7, 2016.

Purdue University: [Soundscape Ecology Research Projects](#).

Stephen A Stansfeld and Mark P Matheson. "[Noise pollution: non-auditory effects on health](#)." *British Medical Bulletin* 68, no.1 (December 1, 2003): 243-257.

Meghan O'Rourke, "[Lessons in Stillness From One of the Quietest Places on Earth](#)." *The New York Times Magazine*, November 8, 2017.

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Alexis C. Madrigal, "[Smart Things in a Not-Smart World](#)." *The Atlantic*, July 23, 2014.

Gordon Hempton, *Earth is a Solar Powered Jukebox: A complete guide to listening, recording, and sound designing with nature* (Quiet Planet, 2016). PDF/eBook.