Global Soundscapes Show:
Connections with the Next Generation Science Standards

You may choose to use these practice and content connections in a number of ways.

- You may be covering the same topics in your classroom, in which case you can use the show to supplement your own lessons.
- If the science center or museum you are visiting offers additional lab experiences or has exhibits that connect with the content described below, you can use that information to more effectively plan your field trip.

Please Note: The Global Soundscapes show is not designed to teach all of the content described below. It is designed, however, to connect to your classroom and be used to extend students' understanding and application of these ideas.

NextGen Standards - Science and Engineering Practices Connections:

Practice	3-5 Grade Band	6-8 Grade Band	9-12 Grade Band
Asking Questions	- Ask questions about what would happen if a variable is changed.	- Ask questions that arise from careful observation of phenomena, models, or unexpected results, to clarify and/or seek additional information. - Ask questions that require sufficient and appropriate empirical evidence to answer. - Ask questions that can be investigated within the scope of the classroom, outdoor environment, and museums and other publics facilities with available resources and, when appropriate, frame a hypothesis based on observations and scientific principles.	- Ask questions that arise from careful observation of phenomena, models, or unexpected results, to clarify and/or seek additional information. - Ask questions that can be investigated within the scope of the school laboratory, research facilities, or field (e.g. outdoor environment) with available resources and, when appropriate, frame a hypothesis based on a model or theory.
Analyzing and Interpreting Data	- Analyze and interpret data to make sense of phenomena, using logical reasoning, mathematics, and/or computation. - Compare and contrast data collected by different groups in order to discuss similarities and differences in their findings.	- Distinguish between causal and correlational relationships in data. - Analyze and interpret data to provide evidence for phenomena. - Analyze and interpret data to find similarities and differences in findings.	- Analyze data using tools, technologies, and/or models (e.g., computational, mathematical) in order to make valid and reliable scientific claims or determine an optimal design solution.

Disciplinary Core Idea Connections:

Grade Level	Discipline	Core Ideas
3rd Grade	3-LS4 Biological Evolution: Unity and Diversity	LS4.D: Biodiversity and Humans
		Populations live in a variety of habitats, and change in those habitats affects the organisms living there.
4th Grade	4-PS3 Energy	PS3.B: Conservation of Energy and Energy Transfer
		Energy is present whenever there are moving objects, sound, light or heat. When objects collide, energy can be transferred from one object to another, thereby changing their motion. In such collisions, some energy is transferred to the surrounding air; as a result the air gets heated and sound is produced.
	4-PS4 Waves and Their Applications in Technologies for Information Transfer	PS4.A: Wave Properties
		Waves of the same type can differ in amplitude (height of the wave) and wavelength (spacing between wave peaks)
Middle School	MS-PS4-1 Waves and their Applications in the Technologies for Information Transfer	PS4.A: Wave Properties
		A simple wave has a repeating pattern with a specific wavelength, frequency, and amplitude.
		A sound wave needs a medium through which it is transmitted.
	MS-LS2 Ecosystems: Interactions, Energy, and Dynamics	LS2.C: Ecosystems Dynamics, Functioning, and Resilience
		Ecosystems are dynamics in nature; their characteristics can vary over time. Disruptions to any physical or biological component of an ecosystem can lead to shifts in all its populations.
High School	HS-PS4 Waves and Their Applications in Technologies for Information Transfer	PS4.A: Wave Properties
		The wavelength and frequency of a wave are related to one another by the speed of travel of the wave, which depends on the type of wave and the medium through which it is passing.

Crosscutting Concept Connections:

Crosscutting Concept	3-5 Grade Band	6-8 Grade Band	9-12 Grade Band
Patterns - observed patterns in nature guide organization and classification and prompt questions about relationships and causes underlying them.	- Similarities and differences in patterns can be used to sort, classify, communicate, and analyze simple rates of change for natural phenomena and designed products.	- Patterns can be used to identify cause and effect relationships. - Graphs, charts, and images can be used to identify patterns in data.	
Cause and Effect: Mechanism and Prediction – Events have causes, sometimes simple, sometimes multi-faceted. Deciphering causal relationships, and the mechanisms by which they are mediated, is a major activity of science and engineering.	- Events that occur together with regularity might or might not be a cause and effect relationship.	- Relationships can be classified as causal or correlational, and correlation does not necessarily imply causation. - Cause and effect relationships may be used to predict phenomena in natural or designed systems.	
Stability and Change – for both designed and natural systems, conditions that affect stability and factors that control rates of change are critical elements to consider and understand.		- Explanations of stability and change in natural or designed systems can be constructed by examining changes over time and forces at different scales, including the atomic scale. - Small changes in one part of a system might cause large changes in another part. - Stability might be disturbed either by sudden events or gradual changes that accumulate over time.	- Much of science deals with constructing explanations of how things change and how they remain stable. - Change and rates of change can be modeled over very short or very long periods of time. Some system changes are irreversible.