Science A-Z

SOUND (3–4)

Correlation of Resources to National Science Standards

Use the chart below to discover how selected Science A–Z resources in the Sound unit support certain Next Generation Science Standards (NGSS). While a single reading resource, science activity, comprehension support, or lesson cannot satisfy an entire Performance Expectation, using these resources together can help students develop the understandings and abilities they will need in order to satisfy each standard listed below. Most standards cited align with the grade level of this Science A–Z unit. For a reverse correlation tool that connects the standards to resources, visit our NGSS correlations page: www.sciencea-z.com/main/NextGenerationScienceStandards.*

Check the Performance Expectations Key below this chart for the complete text of the standards cited for each resource.

Resource Type	Resource Title	Performance Expectations
Unit Nonfiction Book	*Sound* (3 reading levels)	**1-PS4-1; 4-PS3-2; 4-PS3-4; 4-PS4-1; MS-PS4-1; MS-PS4-2**
Project-Based Learning Pack	*Communicating with Sound Patterns*	**1-PS4-4; 4-PS3-2; 4-PS4-3; 3-5-ETS1-1**
Interactive Science Lesson	*Wave Properties* Part 1: Amplitude of Waves	**4-PS4-1; MS-PS4-1**
Interactive Science Lesson	*Wave Properties* Part 2: Wave Cycles and Wavelength	**4-PS4-1; MS-PS4-1**
Interactive Science Lesson	*Wave Properties* Part 3: Frequency of Waves	**4-PS3-2; 4-PS4-3; MS-PS4-1**
Interactive Science Lesson	*Wave Properties* Part 4: Amplitude, Wavelength, and Frequency	**4-PS3-2; 4-PS4-1; 4-PS4-3; MS-PS4-1**
Process Activity	*Identify Objects by Sound*	**4-PS3-2**
Process Activity	*String Telephones*	**1-PS4-4; 4-PS3-2; 4-PS4-3; 3-5-ETS1-3**
Process Activity	*Water Music with Soda Bottles*	**4-PS4-1; 4-PS4-3**
FOCUS Book	*Making Music*	**4-PS3-2; 4-PS4-1**
FOCUS Book	*Animal Ears*	**4-LS1-2; 3-5-ETS1-2**
FOCUS Book	*Animal Sounds*	**4-PS3-2; 4-LS1-2**
FOCUS Book	*Seeing Sound*	**4-PS4-1; 4-PS4-3; MS-PS4-1**
FOCUS Book	*Shhh!*	**4-PS3-4; 4-PS4-1; MS-PS4-1; MS-PS4-2; 3-5-ETS1-1; 3-5-ETS1-3**

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Resource Type	Resource Title	Performance Expectations
Investigation Pack	Topic: Properties of Sound I. Files: *Digital Music; Echolocation; Sonar; Sonic Boom; Ultrasonic Sound; Live Music* Mystery File: *Radio Waves*	**4-PS3-4; 4-PS4-1; 4-PS4-3; 4-LS1-2; MS-PS4-2; MS-PS4-3**
Debate	*Noise Control*	**4-PS3-2; 4-LS1-2**
Science Video	*Ears and Hearing*	**4-LS1-2; MS-PS4-2**
Science Video	*Pipe Dream by Animusic*	**4-PS4-1; 4-PS4-3**
Science Video	*Seeing Through Sound*	**4-PS4-1; 4-LS1-2; MS-PS4-1; MS-PS4-2**
Science Video	*The Power of Sound*	**4-PS4-1; 4-PS4-3; MS-PS4-1; MS-PS4-2**
Career Files	*Acoustical Engineer; Musician; Audiologist*	**4-PS4-1; 4-PS4-3; 4-LS1-2; MS-PS4-2**
Quick Read	*Bug Sounds* (3 reading levels)	**4-PS4-1; 4-LS1-2**
Quick Read	*CDs: Sound From Light* (3 reading levels)	**4-PS4-3; MS-PS4-3**
Quick Read	*Cochlear Implants* (3 reading levels)	**4-PS3-4; 4-PS4-1; 4-LS1-2**
Quick Read	*Elephant Sounds* (3 reading levels)	**4-PS4-3; 4-LS1-2**
Quick Read	*Measuring Sound* (3 reading levels)	**4-PS4-1**
Quick Read	*Protecting our Ears* (3 reading levels)	**4-PS4-1; MS-PS4-2**
Quick Read	*Using Echoes to See* (3 reading levels)	**4-PS4-1; 4-LS1-2**
Quick Read	*Whale Talk* (3 reading levels)	**4-PS4-3; 4-LS1-2**

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Performance Expectations Key

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.

4-PS3-2. Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

4-PS3-4. Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

4-PS4-1. Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.

4-PS4-3. Generate and compare multiple solutions that use patterns to transfer information.

4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

MS-PS4-1. Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.

MS-PS4-2. Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.

MS-PS4-3. Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.