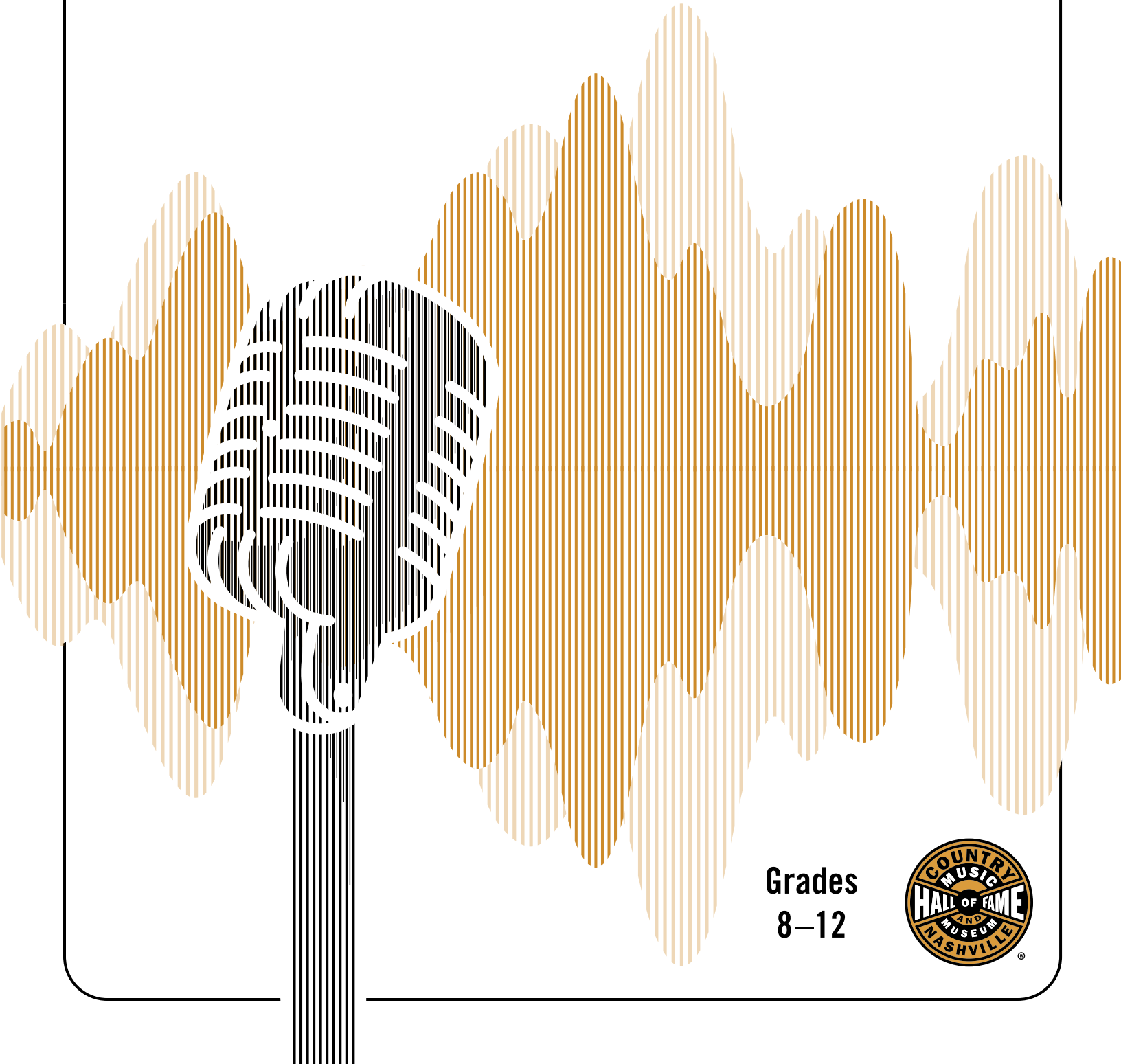


STEAM

THE SCIENCE OF SOUND AT HISTORIC RCA STUDIO B
Pre- and Post-Lessons



Grades
8-12





CURRICULUM STANDARDS

ENGLISH
LANGUAGE ARTS

8–12.RI.KID.1:..... Analyze what a text says explicitly and draw logical inferences; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.

8.SL.CC.2:..... Analyze the purpose of information presented in diverse media formats; evaluate the motives, such as social, commercial, and political, behind its presentation.

8.SL.PKI.4:..... Present claims and findings in a focused, coherent manner with relevant evidence, valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.

8.L.AU.4:..... Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on 8th grade-level text by choosing flexibly from a range of strategies.

MUSIC

FOUNDATION CN2:..... Relate artistic ideas and works with societal, cultural, and historical context.

HS.GM.R1.A:..... Identify and describe the elements of music in visual and aural examples using appropriate vocabulary.

HS.GM.R1.B:..... Use suitable terminology and concepts to compare and contrast music from various historical periods, styles, and cultures within the appropriate context.

SCIENCE

8.PS4.1:..... Develop and use models to represent the basic properties of waves including frequency, amplitude, wavelength, and speed.

8.PS4.2:..... Compare and contrast mechanical waves and electromagnetic waves based on refraction, reflection, transmission, absorption, and their behavior through a vacuum and/or various media.

SOCIAL AND EMOTIONAL
LEARNING INDICATORS

3A:..... Demonstrate awareness and consideration of other people's emotions, perspectives, and social cues.

4A:..... Use positive communication and social skills to interact effectively with others.

5B:..... Develop, implement, and model effective decision-making skills to deal responsibly with academic and social situations.

OVERVIEW

During this program and accompanying activities, students act as sound engineers as they evaluate the properties of sound waves and learn about Nashville's oldest operating recording studio, Historic RCA Studio B. Students learn how energy is transferred and how science, technology, history, and music converge in creative and critical-thinking experiences.

The following pre- and post-lessons support *Science of Sound at Historic RCA Studio B* as a live on-site experience; a synchronous program with a Museum educator; or as a pre-recorded asynchronous program for students learning remotely. In the **pre-lesson**, students make predictions and inferences based on a song recorded at Historic RCA Studio B, and they analyze an article from *The Tennessean* that provides historical context. In the culminating **post-activity**, students are challenged to imagine themselves as sound engineers. In that role, they utilize the science of sound to create an ideal recording using only household materials and spaces.

SYNCHRONOUS PROGRAM

Students can dive into the history and explore the science behind recording at Historic RCA Studio B during a 60-minute interactive program. Using a personal computer or device, students access www.menti.com and communicate with Museum educators by answering questions and responding to various prompts throughout the program.

ASYNCHRONOUS (PRE-RECORDED) PROGRAM

This version of *Science of Sound at Historic RCA Studio B* features a four-part, 30-minute video series about the history and professions of those who worked at Studio B, as well as the science behind recorded sound, past and present.

OBJECTIVE

- Students will ...** make predictions and inferences based on a sound recording.
- Students will ...** read and analyze a nonfiction text for historical context.
- Students will ...** review vocabulary related to electromagnetic waves including **absorption, amplitude, frequency, reflection, refraction, transmission, and wavelength.**
- Students will ...** discover how recording technology has changed over time.
- Students will ...** analyze acoustics and manipulate sound waves in their own environment.



CROSS CURRICULAR CONNECTIONS

English Language Arts,
Music, Social and
Emotional Learning,
STEAM

PRE-LESSON

45 MINUTES

Students listen to the song “End of the World,” recorded by singer Skeeter Davis, as an introduction to Historic RCA Studio B and the Nashville Sound, a musical style that developed in the 1950s as a response to rock & roll. They make predictions and inferences based on the recording, and they analyze an article from *The Tennessean* that provides historical context for the upcoming program.

Essential Question:
Why is Historic RCA Studio B significant, and what is the Nashville Sound?

Materials

Recording of Skeeter Davis’s “End of the World”

Printed or digital copies of *The Tennessean* article

Student computers or phones (optional if article is printed and song is projected for the class)

[Recording and printed article are available in the Teacher and Student Resource Portal](#)



Don Bowman, Skeeter Davis, Hubert Long, and friend during a RCA Studio B session. From the Hubert Long Collection of the Country Music Hall of Fame and Museum

LESSON PROCEDURE

1. As a bell ringer, share the following definition with the class, and have students answer one or more of the following questions:

“The Nashville Sound is a phrase that denotes a style of country music and an era in which that style was especially influential. Nashville Sound recordings are frequently cited as one of country music’s key responses to the popularity of youth-oriented rock & roll in the mid-1950s, which temporarily cut into mainstream country’s sales.”

–The Encyclopedia of Country Music

- Predict what the Nashville Sound sounds like and explain your reasoning.
- What instruments do you think were used to create the Nashville Sound and why?
- Who do you think the Nashville Sound was created for and why?

Answers should reflect on “country music’s key responses to the popularity of youth-oriented rock & roll” in the above definition. Since young people were listening to rock & roll and country music record sales were declining, country music executives sought to create a new sound that would appeal to older audiences and ultimately boost sales.

2. Play “The End of the World” sung by Skeeter Davis for the class as an example of the Nashville Sound. Allow students to answer the following questions either individually or in small groups.

- How does this recording sound different than songs recorded today?
- Based on this recording, how might you define the Nashville Sound? Were your predictions from the bell ringer correct? Explain.
- What sounds typically associated with country music do you not hear that you expected to?

Possible answers: stringed instruments, piano, vocal reverb (or echo)

- Why do you think country music executives made these choices?
- What audience might this appeal to? Explain.

TEACHER NOTE:

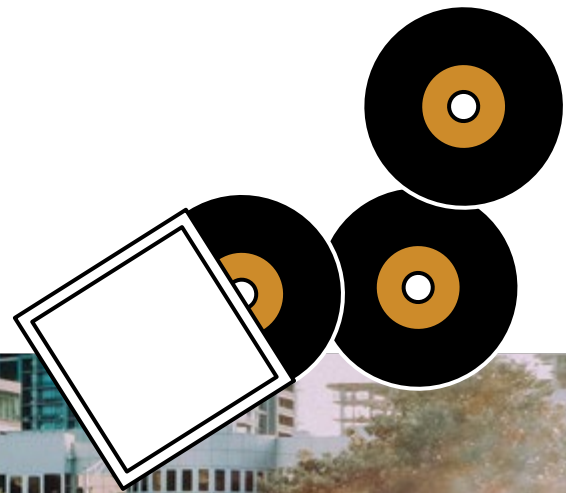
In 1963, Skeeter Davis’s “The End of the World” was a Top Ten hit on four Billboard charts: country, pop, R&B, and easy listening. For additional information about Skeeter Davis, go to www.studiob.org/blog/artist/skeeter-davis/

3. Provide article from *The Tennessean* to students:

After reading the article, have students independently answer the following questions:

- What is unique about Studio B? Where is it located?
- What is the significance of Studio B? Describe at least two reasons why it is significant.
- What might be the benefits and drawbacks of recording at Studio B today?

Extension idea: Research the Nashville Number System and its significance.



POST-LESSON

45 MINUTES

Students imagine that they are sound engineers limited to the spaces and materials available to them at home. Students will create an illustration, written explanation, photo with captions, or a video that explains how soundwave science can be used to create an ideal sound.

Essential Question:
How can I manipulate soundwaves to create an ideal recorded sound?



Materials

Flexible, based on the selected project scope below

LESSON PROCEDURE

Provide the following instructions to students:

Think of a style of music that appeals to you and the type of acoustics that are needed to create your ideal sound. Then, create an illustration, a written explanation, a photo with captions, or a video that answers the following questions:

- Identify the place in your home that creates the best acoustics for you to record your ideal sound. Is it on your front porch, your bedroom, the kitchen, the bathroom, a closet? Why?
- How can you **transmit** and record sound in this space?
- What items in the room **absorb** sound? Why is the amount of sound absorption in this space preferred for your recording?
- What household materials can be used to **refract** sound in your recording? Explain what sounds need to be refracted in your recording and why.
- What household materials can you use to **reflect** sound in your recording? Explain what reflective sounds would be used in your recording and why.

Extension idea: *Students can record a song in their chosen space, and explain where they recorded and what materials were used to transmit, absorb, reflect, and refract sound in their recording.*



Learn more about Historic RCA Studio B at www.studiob.org

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CountryMusicHallofFame.org

SCHOOL PROGRAM FUNDERS



METRO ARTS
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