

# Shouting Whales

## Lesson B: Properties of Sound

### Assignment Option One: Make a Written Piece

Throughout this lesson you have explored how sound travels from the initiation site to the listener. Different mediums allow sound to move differently, and our ears can receive sound differently depending on its tone, harmony, and amplitude. Using what you know, or additional information from a variety of sources, create a written piece to show what you know.

**Pretend you are a reporter interviewing a molecule that has had three different sounds travel through it. How would the molecule describe the experience, and how would you explain to your readers what happened to Mr. Molecule?**

Your assignment should answer the following questions:

- How did the molecule know he had been affected by a sound wave?
- What kinds of waves affected him? Were they low frequency, high intensity, or part of a harmony? How did he know?
- What kind of molecule is he (i.e. does he make a up a solid, liquid, or gas)? How would his experience be different if he was in a different medium?
- What do readers need you to explain to them about sound?

Criteria:	4	3	2	1
Article explains how molecules and sound are related.	Article shows a thorough understanding of the relationship between sound and molecules.	Article shows a good understanding of the relationship between sound and molecules.	Article alludes to molecules and sound, but is not clear.	Article shows no understanding of the sound/molecule relationship.
Article accurately describes three types of waves.	Article accurately describes three types of waves using examples and relevant information.	Article is mostly accurate, and uses relevant information.	Article has some inaccuracies, and irrelevant information.	Article has major inaccuracies and does not present any relevant information.
Piece is engaging and shows creativity.	Discussion is engaging and acknowledges multiple perspectives.	Discussion is engaging, but some perspectives are missing.	Discussion is present though not engaging. Important perspectives are missing.	Piece is neither engaging, nor does it address other perspectives.
Article has been proofread for spelling, grammar, and accuracy, and includes name, date, and title.	No mistakes.	1-2 mistakes.	2-4 mistakes.	Many mistakes are evident.

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### Assignment Option Two: Make a Media Presentation

Throughout this lesson you have explored how sound travels from the initiation site to the listener. Different mediums allow sound to move differently, and our ears can receive sound differently depending on its, tone, harmony, and amplitude. Using what you know, or additional information from a variety of sources, create a media piece (such as a poster, Prezi, PowerPoint, Glogster, or other) that explores the following ideas:

**Use what you have learned to visually represent the key concepts about sound. Imagine you are helping someone who is unable to hear to understand sounds through the use of pictures and images. What would you show them to help them understand what we hear?**

Your presentation should include all of the following:

- A clear presentation of the different key vocabulary such as amplitude, frequency, tone and harmony.
- A text or visual explanation of how sound travels through different media.
- A text or visual explanation of how sound is detected by a listener.
- Creativity that engages and informs the reader while having visual impact.

Criteria:	4	3	2	1
Key vocabulary is represented.	Includes all key vocabulary with understandable and relevant definitions.	Includes most vocabulary and is relevant and understandable.	Some vocabulary is missing, or definitions are difficult to understand.	Vocabulary is missing or undefined.
Sound travel through media is well explained.	Clearly explores how sound travels, and includes clear explanations noting the differences and similarities in the media.	Mostly explains how sound travels through different media, noting the differences and similarities in the media.	Does not clearly explain how sound travels or does not provide enough examples of similarities and differences.	Key features of sound travel are missing.
Project has creativity and visual impact.	Project grabs attention, is creative, and interesting.	Project is interesting and creative.	Project is either creative or interesting, but improvements are needed.	Project is not inspired and creativity is not apparent.
Project has been proofread for spelling, grammar, and accuracy, and includes name, date, and title.	No mistakes.	1-2 mistakes.	2-4 mistakes.	Many mistakes are evident.

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### Assignment Option Three: Take on a Role

Throughout this lesson you have explored how sound travels from the initiation site to the listener. Different mediums allow sound to move differently, and our ears can receive sound differently depending on its, tone, harmony, and amplitude. Using what you know, or additional information from a variety of sources, create a character or performance piece that you could present to your class. This could include a monologue, speech, presentation or interview.

**Take on the role of an audiologist. How would you explain sound to someone unfamiliar with it? If you were asked to speak on the properties of sound in the ocean, what would you say? Consider recording your performance or presenting it in the form of an interview.**

Your presentation should include all of the following:

- An introduction as to who you are, and why sound science is important to you.
- A clear presentation of the different key vocabulary such as amplitude, frequency, tone, and harmony.
- An explanation of how sound travels through different media and how molecules and sound are related.
- An explanation of how sound is detected by listeners.

Criteria:	4	3	2	1
Presenter introduces him or herself and explains why sound science is important to her or him.	Role is defined, and uses, or understanding, of sound is clear.	Role is mostly defined and uses, or understanding of sound is mostly clear.	Role or sound science is not clear, though it is implied.	Role or intent is not clear.
Presenter explains how molecules and sound are related.	Presenter shows a thorough understanding of the relationship between sound and molecules.	Presenter shows a good understanding of the relationship between sound and molecules.	Presenter alludes to molecules and sound, but is not clear.	Presenter shows no understanding of the sound/molecule relationship.
Key vocabulary is represented.	Includes all key vocabulary with understandable and relevant definitions.	Includes most vocabulary with understandable and relevant definitions.	Some vocabulary is missing, or definitions are difficult to understand.	Vocabulary is missing or undefined.
Active participant, respectful audience member.	Fully active participant who shows respect for others.	Active participant, who shows encouragement and respect for others.	Minimally active participant who struggles to respect others.	Non-participant, who shows disrespect for others.