

Volume: Loud & Soft Sounds

Whisper Tunnel with Echoling

Learning target

Distinguish loudness from pitch.



Before you begin

Use the reference page and discussion prompts on their own, or open the optional browser adventure. No earlier lesson or physical kit is required.

For online play: use an internet-connected current browser with local storage enabled. Read the three-part Gemling briefing, answer the quick check, and apply the evidence at three checkpoints. Retry feedback supports review; results are not a secure test or gradebook.

Use for teacher-led review, science centers or partner practice. Independent readers may need support with the vocabulary below. The design target is grades 3-5; choose support based on the learner.

Vocabulary and concepts to discuss

Strength of vibrations; loudness; distance; controlling sound

Open Whisper Tunnel - direct lesson link

Scan the QR code or use the clickable link. This guide is usable offline; the adventure runs on an external educational website.



Volume: Loud & Soft Sounds - key ideas

1. The first clues

Loudness relates to the strength of vibrations reaching a listener, among other factors. Larger vibration amplitude generally produces a louder sound under comparable conditions.

2. How the clues connect

Distance and surroundings also matter. Moving farther from a source often makes the received sound quieter; this does not necessarily change its pitch.

3. Our evidence record

Our record keeps vibration rate the same but uses a stronger vibration in Trial A. A is louder in the record, while the pitch stays the same.

Keep the science accurate

Pitch and loudness differ. Sound needs a medium; no decibel calculations or exposure to loud demonstrations required.

Apply the evidence

Use a specific observation from this lesson to explain one choice. Point to a clue, then connect that clue to a scientific idea.

Curriculum reference:

<https://www.nextgenscience.org/dci-arrangement/1-ps4-waves-and-their-applications-technologies-information-transfer>

Talk through the evidence

1. Which trial is louder here?

Expected answer: A

Reasoning: Our record keeps vibration rate the same but uses a stronger vibration in Trial A. A is louder in the record, while the pitch stays the same.

2. Which property stays the same with unchanged vibration rate?

Expected answer: Pitch

Reasoning: Our record keeps vibration rate the same but uses a stronger vibration in Trial A. A is louder in the record, while the pitch stays the same.

3. What often happens farther from the source?

Expected answer: The received sound is quieter

Reasoning: Distance and surroundings also matter. Moving farther from a source often makes the received sound quieter; this does not necessarily change its pitch.

4. Which change mainly targets loudness in this comparison?

Expected answer: Vibration strength

Reasoning: Loudness relates to the strength of vibrations reaching a listener, among other factors. Larger vibration amplitude generally produces a louder sound under comparable conditions.

Guide the discussion

Ask learners to name the evidence that supports their answer. If an answer differs, revisit the matching key idea on page 2 and invite a revised explanation.

Online rewards: this lesson grants one fixed digital Expedition Discovery. Five saved digital Gemling friends become available only after all six distinct subject lessons are complete, in any order. Digital rewards do not establish physical ownership.