Mini Film Festival: Sound!

**Name:**

**Class Period:**

STUDENT LEARNING OBJECTIVE:

* Students will learn about the various facets of sound and how it works from a science perspective.
* Students will learn about how to learning about sound can lead to unique careers
* Students will learn about what sound looks like

INSTRUCTIONS:

1. Read through the questions for each video
2. Watch the following short videos, most are less than 5 minutes in length
3. Pick a different type color than black or white and use it answer the questions
4. Use complete sentences to answer the questions – be careful to use “it,” “they,” etc.

**VIDEO #1**: [NASA’s “What is Sound?”](https://www.youtube.com/watch?v=XDsk6tZX55g)

1. What does sound produce?
2. What direction do sound waves travel?
3. What type of wave is a sound wave and why?

**VIDEO #2**: [Crash Course “Sound](https://www.youtube.com/watch?v=XDsk6tZX55g)”

1. Explain how sound travel…
2. What is a longitudinal wave?
3. What is a compression wave?
4. What are some qualities of sound? Explain 2 qualities of sound.
5. When does a high pitch sound happen?
6. When does a low pitch sound happen?
7. When does loudness increase?
8. Explain what the Doppler Effect is.

**VIDEO #3**: [“What’s the Loudest Sound Possible?”](https://www.youtube.com/watch?v=wi_aawsChqA&t=72s)

1. What happens at the peak/crest of a sound wave? What happens at the valley/trough of a sound wave?
2. How loud is traffic?
3. How loud is a jet plane?
4. How loud is a gunshot?
5. What is the decibel level like when a NASA rocket when it is launched? This level of sound is able to do what?
6. To keep sound waves from what you’ve listed in #5, what does NASA do? Why does this help? Explain.

**VIDEO #4**[: “The Science of Hearing”](https://thekidshouldseethis.com/post/the-science-of-hearing-ted-ed)

1. What system allows us to hear sounds?
2. What is in the cochlea?
3. What does the ear drum do?
4. Hair cells in the ear move based on what? Explain.
5. What is the benefit of having 2 ears?
6. What is the 3rd most common disease in humans?

**VIDEO #5**: [“Resonance: Forced vibration and a tuning fork demonstration](https://thekidshouldseethis.com/post/resonance-forced-vibration-and-a-tuning-forks-demonstration)”

1. What does striking a tuning fork produce?
2. What does resonance mean based on what you have seen and heard in this video?

**VIDEO #6**: [“Sound is a Vibration](https://thekidshouldseethis.com/post/sound-and-vibration-demonstration)”

1. What can a vibrating object produce?
2. What happens when the tuning fork is hit with the rubber pad?
3. What happens to the pith ball when it’s next to tuning fork, after the tuning fork has been hit? What does this prove?
4. What is sound?
5. What kind of wave is a sound wave?

**VIDEO #7**: “[What Does Sound Look Like?”](https://thekidshouldseethis.com/post/schlieren-flow-visualizations-sound)

1. How fast does sound travel?
2. How does Schlieren Flow Visualization work? Explain in detail.
3. Write your observations for one of the sounds that is demonstrated using the Schlieren Flow Visualization technique.



YOUR CHOICE!

INSTRUCTIONS:

1. Pick 1 of the following 3 videos that involve applications of sound in real life.
2. Watch the video
3. Explain how sound is used in the video. Your explanation should be thorough and enable someone who hasn’t watched the video to have a good understanding of what the video explains in terms of sound.

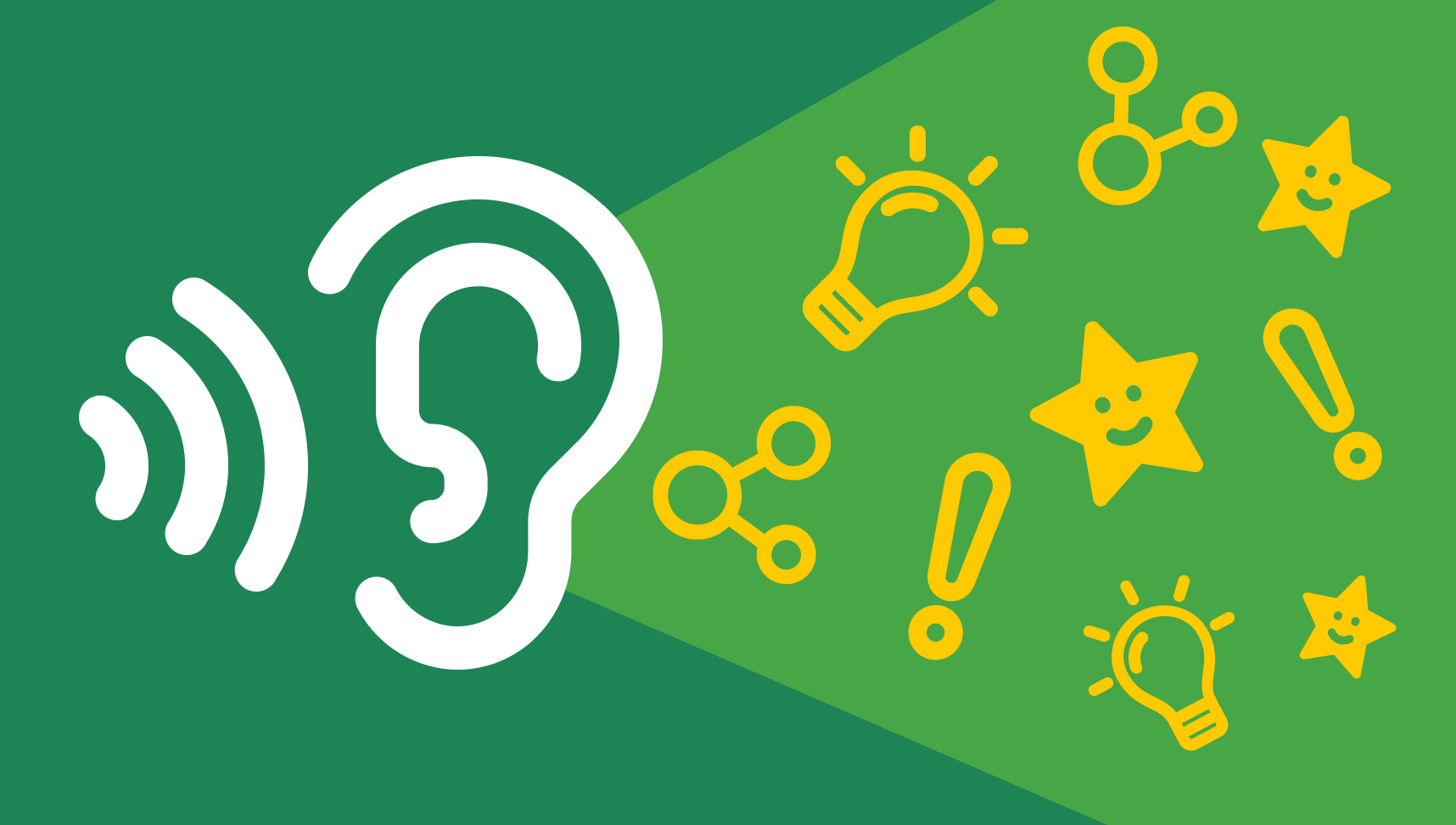
Choice #1: “[Can you call a cell phone in a Microwave Oven](https://www.pbslearningmedia.org/resource/cell-phone-microwave-physics-girl/cell-phone-microwave-physics-girl/#.WmIoyT5961s)?”

Choice #2: “[How Dolphins use Echolocate](https://www.pbslearningmedia.org/resource/nvds-sci-echolocate/how-dolphins-echolocate-and-imitate/#.WmIoij5961s)”

Choice #3: “[Sound Waves Underwater: The Loch Ness Monster](https://www.pbslearningmedia.org/resource/phy03.sci.phys.mfw.lochness/sound-waves-underwater-the-loch-ness-monster/#.WmInHj5961s)”

Title of Video you watched:

Explanation of how sound is used in the video.



SOUND AND CAREERS

INSTRUCTIONS:

1. Watch the short videos
2. Write a thorough explanation as sound is used in this career.

**Career**

**Video #1**: “[Waterless, chemical free…”](https://thekidshouldseethis.com/post/a-waterless-chemical-free-sound-wave-fire-extinguisher)

Explain how sound is used in this video? What application does this new tool have?

**Career**

**Video #2**: “[The Art of Sound Design: How to be a Foley Artist](https://thekidshouldseethis.com/post/the-art-of-sound-design-how-to-be-a-foley-artist)”

Explain what a Foley Artist does and how do they do it?