

# Introduction to Human Hearing

Created by: Miss deBoth

Date: December 2, 2015

Length: 45 Minutes

<p>Content: (Topic)</p> <ul style="list-style-type: none"><li>• Students will learn about the parts of the human ear and understand how humans hear.</li></ul>	<p>Instructional Strategies: (Specific)</p> <ul style="list-style-type: none"><li>• Verbal instruction</li><li>• Creation of a Kazoon (Representation of an Inner Ear)</li></ul>
<p>Outcome(s):</p> <ul style="list-style-type: none"><li>• SO4.1 Explore natural and artificial sources of sound in the environment and how those sounds are detected by humans and animals.</li><li>• SO4.2 Draw conclusions about the characteristics and physical properties of sound, including pitch and loudness, based on observation.</li></ul>	<p>Indicator(s):</p> <ul style="list-style-type: none"><li>• Recognize and demonstrate that sound energy originates from vibrating objects (e.g., larynx, tuning fork, radio speaker, and musical instruments).</li></ul>
<p>Cross Curricular Competencies:</p> <ul style="list-style-type: none"><li>• Developing Thinking: Thinking Contextually</li></ul>	
<p>Content Background: (See Attached Sheet)</p> <ul style="list-style-type: none"><li>• Vibration - what is it and how does it work</li><li>• Parts of the Human Ear</li><li>• How the human ear works</li></ul>	
<p>Prerequisite Learning:</p> <ul style="list-style-type: none"><li>• Sounds in everyday life</li><li>• Purpose of sound in regards to communication</li></ul>	
<p>Adaptive Dimension:</p> <ul style="list-style-type: none"><li>• This lesson could be adapted to allow students to work in groups or use different forms of media to create the Kazoos.</li></ul>	
<p>Preparation: (Equipment/materials/set-up)</p> <ul style="list-style-type: none"><li>• Ear Diagram</li><li>• Music (Good Vibrations by the Beach Boys)/ Speaker to play it on</li></ul>	



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- Paper Towel Rolls
- Tap or Water source
- Elastics
- Scissors
- Wax Paper
- Pencil Crayons, Crayons, Markers
- Projector and Computer
- Sticky Notes

Set: (5 Minutes)

- Ask the students some questions:
  - *Have you ever thought about how our ears work? What sense does our ears pick up? What is sound?*
  - *I want each of you to put your hand on your throat and hum. Can you feel the Vibrations? Explain Vibration. We are going to look at how we hear sound today.*

Development: (20 Minutes)

- Hand out Ear Diagrams
- On a projector, pull up the image of the year and go through the different parts of the ear and how they work so that you hear sound. Have the students follow along with a pencil crayon to show the flow of vibration.

Student Engagement/Classroom Management Strategies:

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| <ul style="list-style-type: none"><li>● Play Good Vibration song for a few moments. <i>When we listen to this song, the sound travels into the outer ear, through the ear canal to reach the cochlea (middle ear).</i></li><li>● Get the student to repeat the term cochlea. The sound is then transformed into electronic pulses (in the cochlea, or inner ear) that travel down the nerves to the brain, in which the sound is processed. Our brains then determines what we are hearing. Ask volunteer to go through the steps that the sound travels through the ear.</li><li>● Go over the terms such as ear drum, Eustachian tube, hammer, anvil and stirrup and get students to repeat terms.</li><li>● <i>We are going to create a Kazoos!</i> which helps us see sound waves in action. Give each student a paper towel tube that they can color. Cut a square piece of wax paper, enough to cover one end of the tube. Hold the wax paper in place at one end of the tube, or fasten with an elastic band. Talk or sing into the Kazoo. The wax paper will vibrate as the sound waves bounce</li></ul> |  |
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through the tube. Ask the group what happening.

Closure: (10 Minutes)

- Hand out a sticky note to each student.  
*Please write on this sticky note, one thing that you learned today.*
- *Let's work together to clean up all of the scrap paper and make sure that your sheets are in your science book.*

Lesson Modified From:

[https://docs.google.com/document/d/14WMD0iDDgWjxpfZFoF5OZyYR6PjyIL2iZvj8eC\\_VH4/edit?usp=sharing](https://docs.google.com/document/d/14WMD0iDDgWjxpfZFoF5OZyYR6PjyIL2iZvj8eC_VH4/edit?usp=sharing)