

Grade 4	Science	Week 5
<b>Lesson Title:</b> Sound		
<b>Weekly Learning Targets:</b> Students can describe sound energy and how it travels.		
<p><b>Next Generation Science Standards</b></p> <p><b>4.PS3.2</b> – Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.</p> <p><b>4.PS4.1</b>– Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves and cause objects to move.</p>		
<b>MONDAY</b>		
<p><b>Daily Learning Target:</b> Students can create an initial model for sound.</p> <p><b>Learning Tasks:</b> After reviewing the different energies, the teacher can tell the class that they will be looking at a specific energy this week and show this video of a glass shattering using a person’s voice. (SM A) Then, students can talk with their partners about their observations and the class can create a list of observations. Then, students will choose an observation and turn to a partner and share what caused that observation to happen and again create a list. Then, students can record what they saw and why. (SM B page 25) Next, students can read page 17 in their textbooks about sound energy and answer the questions. The students can also practice the vocabulary sound, pitch, frequency, volume, wavelength, and amplitude. Students can write and vocabulary words they encounter in their science notebooks.</p> <p><b>Daily Formative Assessment:</b> The teacher can check the work in the students’ notebook.</p>		
<b>TUESDAY</b>		
<p><b>Daily Learning Target:</b> Students can explain how sound travels.</p> <p><b>Learning Tasks:</b> At the start of class, the students can review the previous lesson. After review, the class can read about how sound travels on page 18 and answer the questions. They can also watch this video (SM C) to show that sound can travel through different forms of matter and at different rates or the class can create their own type of demonstration. Then, the students will do an activity where they put their ear on and off a table and knock on the table strongly or softly and record their observations. (SM D page 54) In addition to or alternatively, students can try to stop sound from being generated from inside a box.</p> <p><b>Daily Formative Assessment:</b> The teacher can check the students’ observation sheet.</p>		
<b>WEDNESDAY</b>		
<p><b>Daily Learning Target:</b> Students can explain frequency, amplitude, volume, and wavelength as it relates to sound.</p> <p><b>Learning Tasks:</b> At the start of class, the students can review what they learned about how sound travels. Then, the class can read about frequency and wavelength as it relates to sound on page 19. As a class, students can draw a sound wave in their science journal and label the different parts. Following that, the students can do an activity together. For the activity, students can use a slinky and record what kind of wave they make by moving the slinky in different ways. The students can record the wave and label its amplitude, frequency, and wavelength. Then, the students will predict if that was an actual sound wave what they would hear. The class may be able to recreate some of these sound waves using programs. (SM E and SM F)</p> <p><b>Daily Formative Assessment:</b> The teacher can give feedback on the students’ notebook.</p>		
<b>THURSDAY</b>		
<p><b>Daily Learning Target:</b> Students can explain pitch as it relates to sound.</p> <p><b>Learning Tasks:</b> At the beginning of class, the teacher can review frequency, amplitude, volume, and wavelength. Then, the students can read about pitch and volume as it relates to sound on page 20. Next, the class can do a quick lab where there are four identical bottles filled with different amounts of water. Then, the students must blow across the bottles to hear the sound and arrange the sound in order from highest to lowest and make any</p>		

observations. Then, the students can answer questions #9 to #12 on page 21. Following that, the students can write the definition of pitch in their science notebooks.

**Daily Formative Assessment:** The teacher can give feedback on the students' response on exercises #9-12.

#### FRIDAY

**Daily Learning Target:** Students can create a model of sound energy.

**Learning Tasks:** NOTE: This lesson plan borrows from (SM B Activity 1: Human Voice) After reviewing all the different parts of sound energy, the teacher can refer back to the video (SM A) where the person shatters the glass using only their voice. The teacher can explain to the students that today they will be looking at the properties of a human voice. First, the teacher will ask students how they make sounds with their voice. After discussing, the teacher will inform the class that they will be making observations by feeling their vocal cords as they whisper, hum, and talk. Then, the students will identify any patterns and what they learned by doing the activity and filling out the recording sheet. The students can also relate this back to the video of the singer shattering the glass.

**Daily Formative Assessment:** The teacher can check the students recording sheet.

Grade 4– Science – Week 5	MATERIALS / RESOURCES
	<p>pencil, science journal, box, slinky</p> <p><b>A</b> – Shatter Glass with Voice Video - <a href="https://www.youtube.com/watch?v=10IWpHyN00k">https://www.youtube.com/watch?v=10IWpHyN00k</a></p> <p><b>B</b> – Recording Sheet (page 25) - <a href="http://ambitioussciencelearning.org/wp-content/uploads/2014/09/4-Sound-Unit-All-in-One.pdf">http://ambitioussciencelearning.org/wp-content/uploads/2014/09/4-Sound-Unit-All-in-One.pdf</a></p> <p><b>C</b> – Sound and Matter - <a href="https://www.youtube.com/watch?v=q9ezMbDpIHl">https://www.youtube.com/watch?v=q9ezMbDpIHl</a></p> <p><b>D</b> – Sound and Matter Recording Sheet - <a href="https://www.youtube.com/watch?v=q9ezMbDpIHl">https://www.youtube.com/watch?v=q9ezMbDpIHl</a></p> <p><b>E</b> – Keyboard - <a href="https://academo.org/demos/19-tet-keyboard/">https://academo.org/demos/19-tet-keyboard/</a></p> <p><b>F</b> – Amplitude Modulation Website - <a href="https://academo.org/demos/amplitude-modulation/">https://academo.org/demos/amplitude-modulation/</a></p> <p><b>Additional Resources</b></p> <p>Energy Science - <a href="https://www.teacherspayteachers.com/Product/Energy-Science-823866">https://www.teacherspayteachers.com/Product/Energy-Science-823866</a></p> <p>Energy PowerPoint - <a href="https://epicscience.net/4th/unit-4/">https://epicscience.net/4th/unit-4/</a></p> <p>Sound Unit Pack - <a href="http://ambitioussciencelearning.org/wp-content/uploads/2014/09/4-Sound-Unit-All-in-One.pdf">http://ambitioussciencelearning.org/wp-content/uploads/2014/09/4-Sound-Unit-All-in-One.pdf</a></p> <p>NGSS - <a href="https://www.nextgenscience.org/sites/default/files/4%20combined%20DCI%20standardsf.pdf">https://www.nextgenscience.org/sites/default/files/4%20combined%20DCI%20standardsf.pdf</a></p> <p>Sound and Light - <a href="https://www.fossweb.com/delegate/ssi-wdf-ucm-webContent/groups/public/@guestmktgfoss/documents/document/mday/nzmz/~edisp/g3931780.pdf?MappedFolderRedirect">https://www.fossweb.com/delegate/ssi-wdf-ucm-webContent/groups/public/@guestmktgfoss/documents/document/mday/nzmz/~edisp/g3931780.pdf?MappedFolderRedirect</a></p>