



Sound and Vibrations Integrated Unit for 2nd Grade

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Introduction and Rationale

This science-based integrated Unit Plan will be carried out over a period of two weeks. All activities and assignments within the two-week period will gradually increase in difficulty and comprehension requirement so build up to an end of the unit assessment. The students' main goal for the entire unit is to understand the connection between sound and vibrations. The teacher will have planned many engaging and hands-on activities to implement within the two-week period. Activities range from journaling observations to creating artistic projects such as making a guitar from boxes and rubber bands. Each activity also provides room for student inquiry as they explore the materials and the relationship between vibrations and sound. The activities will be based around the singular scientific concept, but the activities will range in subject area. For example, the students may experiment with creating music from glasses filled with water. This activity is a musically integrated activity. The students may also be engaged in sorting activities that integrate math concepts. All practices will also be developmentally appropriate for the children. This means they will be appropriate based on childhood research, current child development, and cultural significance (Bredekamp & Copple, 2009).

Since there are many diverse learners within a classroom, all activities presented in the two-week unit plan will provide for differentiation if/when needed. Each activity will be planned in a way that allows for differentiation for students who may need more support and students who may require more of a challenge. Providing differentiation ensures all students are able to participate to the best of their ability and allows them to demonstrate their knowledge alongside their peers. For example, students who need more assistance/support may be assisted in their creation of art-based projects such as the index card bees. More advanced students may provide assistance in this area. For another example, students needing more support may not be required to include as much detail in their science journals OR may be asked verbal questions one-on-one as an alternative. Students needing more of a challenge may help other students in the class. They may also be given more of a challenge during the final project (playing Twinkle Twinkle Little Star with glasses full of water). All activities are suitable for second grade according to the second grade standards (Tennessee Board of Education, 2016). During a meeting with the children, it was shown that they have been previously exposed to the words "vibration" and "force" and were exceedingly knowledgeable on the effects of force and motion. These concepts are important when learning about the relationship between vibrations and sound.

The two-week unit is based on the concept of sound and more specifically "the cause and effect relationship between vibrating materials (tuning forks, water, bells) and sound" (Tennessee State Board of Education, 2016). Students will be conducting and helping plan investigations on how to observe the relationship. They will be involved in inquiry-based practices and will be encouraged to become involved in academic discussion and question one another. During the final experience, I will first pass out cups and water to each small group of students. I will ask them what they believe we can do with the cups and water based on the sound concepts we learned during the two-week period. I will then show a video demonstrating someone using glasses filled with water to play a simple nursery rhyme song. Upon watching the video, I will then ask the students to experiment and try and recreate the popular children's song Twinkle Twinkle Little Star.

My activities will be based on the 5E's method, which includes Engage, Explore, Explain, Elaborate, and Evaluate. The teacher will Engage the students by introducing the topic in a way that is fun and causes the students to ask questions. Secondly, the teacher and students will Explore the topic by reading books and conducting further investigations with a variety of materials. In order to Explain their findings, the students will be questioned by the teacher as a form of formative assessment. They will also be asked to write about their observations/findings in their science journals after each investigation has been carried out. Students may Elaborate by participating in the activities that require the students to create their own products such as the rubber band guitars and the musical glasses. Students must rely on their prior investigations to help them create these products and answer questions about them. Lastly, students will Evaluate themselves and their investigations in their science journals. The teacher will also use a variety of formative and summative assessments throughout the two weeks to keep track of student progress. The teacher will use these assessments to determine what concepts need to be reviewed with the whole class, which can be reviewed during teacher-table, and which can be reviewed one-on-one. They will also help the teacher determine which students have met the goal of the two-week unit.

References for introduction and rationale

Bredenkamp, s. & Copple, C. (2009). *Developmentally appropriate practice* (3rd Edition). Washington, D.C.: National Association for the Education of Young Children.

Tennessee State Board of Education (2016). *Tennessee Academic State Standards for Science*. Nashville, TN: Author. Retrieved on 4/4/2019.

Focal Standard

My focal standard is a second grade standard. This standard focuses on the relationship between vibrations of different materials and sound. Throughout this unit, all activities will be based around the focus of this specific standard. The unit will also integrate standards and objectives from math, literacy, music, and movement/physical health.

2.PS4: Waves and Their Applications in Technologies for Information Transfer

1) Plan and conduct investigations to demonstrate the cause and effect relationship between vibrating materials (tuning forks, water, bells) and sound.

Unit Goals

1. The learners will understand what sound is and how it is created.
2. The learners will be able to connect new knowledge to prior knowledge in order to create more developed understandings.
3. The learners will communicate and cooperate in order to answer questions and/or solve problems.
4. The learners will develop experiments in order to test hypotheses.

Unit Objectives

1. TLW be able to effectively identify the cause and effect relationship between vibrations and sound.
2. TLW conduct investigations to experiment with sound and vibrations.
3. TLW participate in the creation and execution of different projects to meet unit goals and objectives.
4. TLW recognize that different objects make different sounds and be able to express this thought verbally.

Unit Web



Two-Week Schedule for Vibrations and Sound Unit

Week 1 of 2

Time of Day	Monday	Tuesday	Wednesday	Thursday	Friday
Morning	Introduction to Unit: Humming and feeling as throat vibrates.	Movement integration: Stomp and Clap song.			
Music					BoomWhackers exploration. Why do they make different sounds?
Math			Hand bells experimentation: Sorting bells in order from highest to lowest pitch.		
Science	KWL Chart	Index card and rubber band bee swarm		Tuning forks exploration. What are they?	Second KWL Chart
Literacy	After introduction: read <i>Sounds All Around</i> by Wendy Pfeffer		Journal activity: Journal findings from Hand bell exploration.	Journal activity: Journal findings from Tuning Fork exploration.	

Week 2 of 2

Time of Day	Monday	Tuesday	Wednesday	Thursday	Friday
Morning	Reading: <i>How Sound Moves</i> by Sharon Coan		Reading: <i>Vibrations Make Sound</i> by Jennifer Boothroyd		
Music	Musical Instruments: Straw Kazoos	Musical Instruments: Rubber Band Guitars	Musical Instruments: Maracas and drums	Musical Instruments: Playing different songs using water-filled glasses	
Math					
Science	Social studies integration: Phone history: engineering tin-can phones	Technology integration: Musical Instruments' sounds video	SEND HOME SOUND SCAVENGER HUNT SHEET		PERFORMANCE OF INSTRUMENTS AND FINAL DISCUSSION
Literacy	Movement integration: Recreating sound waves with body movements and Journaling observations.			Journaling activity: How are the instruments different? Why do they make different sounds?	Journaling activity: Water in glasses experiment. Final thoughts.

Description of Learning Experiences

Week One

Day 1.

I will engage the students' interest by singing a song. After teaching the children the song, I will ask if they know we make different noises with our mouths. I will then ask the students to sing the song again, but this time by placing their hands on their throat to feel the vibrations. I will explain that different vibrations cause different sounds. We will continue by singing multiple notes so they can feel the different ways their vocal chords/throat vibrates. Following the initial engagement, I will read the students a book detailing more information about sound and the interesting noises vibrating materials make. The book is *Sounds All Around* by Wendy Pfeffer. During the reading, I will stop to ask the students questions about their own experiences with such materials and if they have ever felt the vibrations. The students may ask questions as well. The students will also complete a KWL chart.

Day 2.

On Day 2, in the morning, the students will learn a short dance that involves a lot of movement including stomping and clapping. The students will be asked if they were able to feel the floor vibrate under their feet what sounds their feet and hands were making. The activity will then be repeated on a large rug, and the same questions will be asked. I will explain that the rug caused the vibrations to be muffled or quieted. Later in the day, the students will create an index card bee swarm as an art integrated activity. The "bees" are created with index cards, rubber bands, and pencils. When the children move the cards around, they will vibrate and create the distinct buzzing sound of bees. The children will experiment with the quickness at which they move their bees and the different sounds they make. I will also encourage them to experiment with how the sound changes based on how many "bees" are buzzing at one time.

Day 3.

On Day 3, we will revisit vibrations and sound by experimenting with different hand bells. The hand bells will create different sounds based on the vibrations of the different length spring inside of each bell. The students will be asked to shake each bell and arrange them in order from highest pitch to lowest pitch. Afterwards, I will first ask the students what they believe is causing the bells to sound differently. I will then explain that the sound is caused by the vibration inside the bell and invite the students to close their hands around the bells and shake them hard to feel the vibrations. After the activity has concluded, the students will be asked to write about their exploration of the hand bells while using words such as "vibration" and "pitch." They will also be encouraged to draw pictures to add detail to their observations and writings.

Day 4.

On Day 4, the students will conduct investigations with tuning forks during the science portion of the day. I will provide different styles and lengths of tuning forks and place them on a table for each small group. I will ask the students to explore the items and produce guesses for what they believe the tuning forks are and what they are used for. The students

may compare the sounds and talk about the vibrations of each tuning fork. They will be engaged in academic discussion with one another as they explore the forks as well. Afterward, the students will complete a journal entry, in which they write down what they learned about the tuning forks and what they originally thought the tuning forks were. They may also include observations such as: What kind of sound did the longer tuning fork make? What kind of sound did the shorter tuning fork make? Etc.

Day 5.

The students will be provided with a large variety of Boom Whackers. Boom whackers are colorful, hollow, plastic tubes that make different noises when hit on the ground or on each other. They can be used to create music as well. Similar to the tuning forks, the students will be given no instruction besides to explore the materials and guess what they are used for. The students will also be asked why they think the Boom Whackers make different sounds. Afterwards, the students will complete a second KWL chart to end the first week of the unit.

Week Two**Day 6.**

On day 6, the teacher will begin by reading *How Sound Moves* by Sharon Coan. The teacher will periodically stop to ask questions, and the students may interject with questions as well. After the reading, the teacher will talk about the tin-can phones seen in the reading. The teacher will discuss the purpose and history of the phones as well. Afterwards, the students will be given all the materials to create tin-can phones by themselves. They will then be asked to demonstrate how they are used. The students can then witness the vibrations of the string between the two cans. The teacher will explain that this vibration is like a sound wave. The students will then use their bodies to recreate the motion of the waves.

Day 7.

On Day 7, I will show the students a video on YouTube titled "Musical Instruments' Sounds." I will discuss the instruments and sounds with the students, and explain the different parts that vibrate to create the distinct sounds. Afterwards, the students will be provided with the materials to make kazoos out of straws. After they have completed their kazoos, they may demonstrate how the kazoos work. I may ask the students to explain how the kazoo makes a certain sound, and what they can do to alter that sound while playing the kazoo. Students should connect the vibration of the straw to the different sounds.

Day 8.

I will begin day 8 by reading the students a book titled *Vibrations Make Sound* by Jennifer Boothroyd. The book mentions the different sounds made by a guitar, and the students will be creating rubber band guitars. They will be provided with all the materials including empty rectangular containers and different sizes of rubber bands. The students will be asked to use the materials and create an instrument they saw in the reading. Since it is easy to watch rubber bands vibrate, the students should be able to better connect vibrations to sound. The different thicknesses of rubber bands will vibrate differently,

which, in turn, will create different sounds similar to a guitar. At the end of the day, I will send the students home with a sound scavenger hunt sheet. This sheet will be due on Day 10. For this scavenger hunt, the students will be required to find a variety of objects that make different sounds (such as high pitch and low pitch) and write the name of that object on their sheets.

Day 9.

On day 9, the students will be continuing their musical exploration by creating maracas and drums. These are both percussion instruments; however, they are very different and require different types of vibrations. The students will be shown pictures and videos of the instruments, and asked to create them using the provided materials. After they have completed their percussion instruments they will complete a journal activity. In their journal entry, they should include answers to questions such as: Why do the instruments sound different? What parts of the instruments vibrate to make their sounds? How are these instruments different from and similar to the straw kazoos and the guitars?

Day 10.

On Day 10, The students will complete the unit by attempting to replicate Twinkle Twinkle Little Star through water in glasses. I will first show a video of other people making music with water filled glasses, and I will then guide the students as they attempt to create the song themselves. They will need to fill the glasses to the correct height with water and then arrange them to play the song. I will be sure to iterate that the sound is caused by the way the water and glass vibrate together. After the song has been completed, or if students are struggling, they will be asked to use the water and glasses to create their own tunes. They can experiment with how much water should be in each glass to create specific sounds and how hard they should tap the glasses. Afterwards, if the students wish, they will put on a band performance in which they use all of their instruments. Lastly, I will engage in a final discussion with the children about sound and vibrations.

Lesson Title: Sound and Vibrations- Tin Can Phones

Grade/Level: 2

Date/Learning Experience #: N/A

Curriculum Standards	Essential Question(s)/I Can Statement(s)	
<p><i>State Curriculum Standards – Underline your language/vocabulary words</i></p> <p>2.PS4: Waves and Their Applications in Technologies for Information Transfer</p> <p>1) Plan and conduct investigations to demonstrate the cause and effect relationship between vibrating materials (tuning forks, water, bells) and sound.</p>	<p><i>What question(s) or I Can statement(s) drive your instruction?</i></p> <ul style="list-style-type: none"> • Can the students connect the vibrations of different materials to the sounds they make? • Will the students question the relationship and test hypotheses to answer their questions? 	
Lesson Objective(s) – Student Learning Outcome(s) for this learning experience		
<p><i>Objectives use active verbs, are measurable (if applicable), and link to standards. Consider using Bloom’s Taxonomy or Webb’s Depth of Knowledge.</i></p> <ul style="list-style-type: none"> • TLW strengthen their understanding of vibrations and sound via tin-can phone exploration in small group. • TLW exemplify the movement of vibrations using their bodies. • TLW express their findings and thoughts via journal entry as a form of summative assessment. 		
Knowing Your Learners		
<p><i>Describe pre-requisite skills students already know that will help them meet the lesson objective(s). What is your evidence that students need this/ these skills(s)? This may include pre-assessment data; student personal, cultural or community assets you have gathered and observations you have made concerning your students.</i></p> <p>The learners have gained a variety of knowledge about many of the physical science standards. They have mastered most, if not all, of the objectives excluding the standards and objectives relating to sound and sound vibrations. The students have already learned the vocabulary words “vibration” and “speed” in terms of collisions and force. This will give them prior knowledge that they may rely on to master some of the sound concepts.</p>		
Assessment/Evaluation		
<p><i>How will students demonstrate understanding of lesson objective(s)?</i></p> <p>Formative: <i>How will you monitor student progress towards lesson objectives as you are teaching?</i></p> <ul style="list-style-type: none"> • For formative assessment, the teacher will conduct observations and record anecdotal notes. These will be completed as the students are engaged in building a tin can phone, as they are using the phone, and as they are performing the movement of the string vibration with their bodies. The teacher will record all questions the children ask and all answers the students give. The teacher will also record student conversations as they relate to the lesson. The teacher will use these notes to determine which students may need more assistance in completing the lesson objectives, and which students are near/have met mastery. While the teacher questions each small group of students, the assisting teacher may do the same and record answers as well. The questions will revolve around the vibration of the string between the cans, the sounds the students hear, and what they think causes the sounds. <p>Summative: <i>What evidence (formative and/ or summative) will you collect and how will you document student learning/ mastery of lesson objective(s)? A summative assessment is not needed for every lesson, however, it is <u>required for every lesson submitted for CAEP data collection points I, II, and III.</u></i></p> <ul style="list-style-type: none"> • As aforementioned, the teacher will continually take anecdotal notes and conduct observations throughout the lesson. As a form of summative 	<p>Assessment/Evaluation Modifications</p> <p><i>What modifications will you make on assessments/ evaluations for students with diverse and/ or special needs (i.e. students with IEP or 504, struggling learners, advanced learners) and will these modifications be within/ for small groups or individuals?</i></p> <ul style="list-style-type: none"> • Any students with an IEP of 504 Plan will be provided with modifications to meet those requirements. • Any students needing more assistance may 	

assessment, the teacher will use a rubric to assess the students' journal entries. The journals should include thoughts and opinions on the task as well as things they learned from creating the tin-can phones, using the phones, and recreating the vibrations with their bodies. The rubric's scale will range from a score of 0 to 10. The students will be required to receive a score of at least 8 in order to master the lesson objectives. For students that did not master the lesson objectives, the teacher may choose to review concepts via whole group instruction or teacher-table instruction. The teacher may also decide to speak one-on-one with students as well.

Academic Feedback: *How will you give academic feedback? How will your academic feedback promote student understanding of the learning objective(s) or state standard(s)?*

- The teacher will provide the students with academic feedback in the form of questioning and suggestions. When the students are engaged in the small group activity, the teacher may ask them to verbally describe how the vibrations in the cans travel across the string. The teacher may also ask the students to demonstrate how to use their tin can phones. If a group of students are struggling, the teacher may suggest that they refer to the reading in order to gain a better understanding of how the phones are made and how they work. The teacher will guide the students as they experiment with their phones and will encourage them to engage in academic discussion and provide feedback to each other.

receive assistance from the teacher or assisting teacher.

- Small groups may be divided based on student need.
- The teacher may change his/her questioning techniques based on what is developmentally appropriate for each student.

Academic Language Demands

Function and Product of the Lesson *The function is the verb, usually a Blooms verb (e.g., analyze, interpret, recount), that guides the language objective of the lesson. This includes a product that students will either write, say, present, or do that involves Academic Language (e.g., essay, present, recount).*

- TLW create a model of the relationship between sound and vibrations (tin can phone) and demonstrate an understanding of the relationship via movement activity and journal entry.

Academic Vocabulary *What specialized terms and phrases do students need to understand what they are expected to do? How does this vocabulary connect to the objectives, state standards and function of the language demand?*

- Relationship (review)- The teacher will introduce and redefine this term during the set motivator. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall. The students must understand what a relationship is in order to define how sound and vibrations relate to each other.
- Vibration (review)- The teacher will introduce and redefine this term during the set motivator. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall. In order to meet lesson objectives, the students must understand what vibration is and how to describe it.
- Sound (review)- The teacher will introduce and redefine this term during the set motivator. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall. In order to meet lesson objectives, the students must understand what sound is and how it relates to vibration.
- Speed (review)- The teacher will introduce and redefine this term during the set motivator. The term

will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall. In order to meet lesson objectives, the students must understand what sound is and how it relates to vibration and sound.

- Sound wave (new term)- The teacher will introduce and define this term before the beginning of the reading and again before the students engage in the movement activity. Each student will also be provided with a handout version of the word wall. The students must understand the basics of sound waves in order to understand how the vibrations travel.

Content Vocabulary *What are the key vocabulary words, symbols, or sounds in this lesson? How does this vocabulary connect to the objectives, state standards and function of the language demand?*

- Discuss (review)- The teacher will redefine this term before the students begin the small group activity. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall.
- Demonstrate (review)- The teacher will redefine this term before the students begin the small group activity. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall.
- Describe (review)- The teacher will redefine this term before the students complete their journal entries. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall. In order to meet lesson objectives, the students must be able to accurately express their thoughts and define what the tin can experience taught them.

Language Supports *What general instruction will you provide to help students in the whole class (e.g., word walls, learning partners, guided notes) learn the discourse/syntax? What focused instruction (e.g., Venn diagrams, graphic organizers, outlines, student examples, sentence stems) will you provide to help students learn the discourse/syntax (can be completed in small groups)? What individual instruction that targets the needs of an individual student(s) will you provide to help that student(s) learn the discourse/syntax? What opportunities will you provide for students to practice language/vocabulary and develop fluency? What tools (e.g., EQ or vocabulary board, Venn diagram, anchor chart, vocabulary cards, graphic organizer, peer support, sentence stems, pictures, table, chart, thinking map, modeling, sort, song, body movements, games) will you use to help students meet the language demands?*

General Supports – *Strategies used to support the whole class and may be used to support more than one demand (e.g., Venn diagram, learning partners, word wall, anchor chart, vocabulary cards, graphic organizer, sentence stems, pictures, table, chart, thinking map, modeling, sort, song, body movements, games). These strategies can cross disciplines and be used in a variety of lessons.*

. Students will have constant access to a large word wall within the room. The word wall will be interchangeable for every unit and include all the necessary vocabulary required to complete lesson objectives. In order to make the word wall interchangeable, each vocabulary word will be printed in large, easy-to-read font on a strip of cardstock. The cardstock will then be laminated and placed into a pocket of the word wall. Each word will also include a small picture and short definition to further assist the students in their language development. Each student will also receive a laminated copy of the word wall that they may use independently at their desks or take home for individual practice. Multiple copies of *How Sound Moves* by Sharon Coan will also be available for students to use as a reference for their tin can phones.

Targeted Supports – *Strategies that focus toward a specific language demand (e.g., Venn diagrams, graphic organizers, outlines, examples, sentence stems). These may be addressed during small groups. These can be general supports that are modified for specific students or groups of students.*

Each student will receive a personal copy of the word wall. The student may use this copy in any manner they choose such as an individual study tool. It may be left in the classroom or taken home for practice. Providing individual copies ensures that each student has easy and full access to all of the academic vocabulary whether in school or at home.

Individual Supports – Supports used to target the specific needs of an individual student (e.g., ELL, student with autism, struggling reader or writer, student with significant language delays). These students may or may not have been formally identified and may or may not have an IEP or 504 plan.

Any students who are ELLs, speak English as a second language, or are struggling readers may be provided with differentiated word wall handouts. These handouts may include more pictures that help define each vocabulary word. During whole group discussion and the small group activity, these students may receive assistance in writing or reading. There will also be an audiobook version of *How Sound Moves* by Sharon Coan available for the struggling readers as well.

Instruction – When designing your instruction, consider when you will implement formal and informal assessments/evaluations, when you will provide feedback, and when you will teach academic language. Therefore, this section should include aspects written above.

Lesson Part	Description of Activities and Instruction (Teacher Does)	Description of Activities and Instruction (Students Do)	Meeting Individual & Group Needs /Learning Styles <i>Plans instruction to meet the needs of individual students. Adaptations are tied to learning objectives. Specific individual or group learning includes requirements in IEP or 504 plans.</i>
<p>Set/Motivator: <i>Restate and address your Essential Question. How do you engage student interest in the content of the lesson? How does this relate to previous learning? Use knowledge of students' academic, social, and cultural characteristics.</i></p>	<ul style="list-style-type: none"> • The teacher will call the students to the rug for circle time. • The teacher will begin the lesson by saying, “Boys and girls, what have we been learning about for the past few days? ... You are right! We have been learning about sound! Today I have a very fun activity for you all that involves these. • The teacher will show the class two tin cans. • We will keep learning about sound and vibrations with these, but first I have a book to read to you all and I need to review some vocabulary. • The teacher will redefine vocabulary. 	<ul style="list-style-type: none"> • Students will sit on the carpet for circle time. • Students will answer teacher questions and listen as the lesson is introduced. • Students will listen as vocabulary is defined. 	<p>Students with an IEP or 504 plans will have modifications to meet their needs as required in the plans.</p> <p>Students needing more assistance may receive help from the assisting teacher.</p>
<p>Instructional Procedures/Learning Tasks: <i>Provide specific step-by-step details of lesson content aligned with objectives, utilizing a variety of teaching strategies.</i></p>	<ul style="list-style-type: none"> • The teacher will read <i>How Sound Moves</i> by Sharon Coan • The teacher will periodically stop reading to mention and define vocabulary and write 	<ul style="list-style-type: none"> • The students will listen as the teacher reads <i>How Sound Moves</i> by Sharon Coan. • The students will ask questions at any point if 	<p>All students with IEPs or 504 plans will have their needs met.</p>

	<p>it on the board.</p> <ul style="list-style-type: none"> • The teacher will draw special attention to the tin can phones in the reading. • After the reading, the teacher will quickly discuss the history and purpose of tin can phones. • The teacher will then state, “Boys and girls, you are going to be making these phones in small groups today. The materials should be on your table, and you are welcome to reference the book for assistance. I want you to explore your materials and experiment with the phones once you have finished them.” • The teacher will walk around and take anecdotal notes and complete observations. • The teacher will use questioning techniques as he/she walks around the classroom and may also ask higher order thinking questions. • The teacher will provide the students with academic feedback. • The teacher will also ask the groups to demonstrate how their phones work. • Upon the completion of each group’s phone, the teacher will direct them to the center of the room. • The teacher will state, “Class, can anyone describe to me how the string moved between the two cans? ... yes it did vibrate. It vibrated because your words were 	<p>they need clarification or wish to share ideas.</p> <ul style="list-style-type: none"> • The students will answer teacher questions. • The students will listen as the small group activity is introduced and ask questions for clarification. • The children will return to their desks and use the provided materials to create their tin can phones. • As the teacher walks around, the students will be engaged in academic discussion and respond to teacher questions. • The students will respond to academic feedback. • The students will demonstrate how their tin can phones work. • The learners will describe how the vibrations move along the string and demonstrate by using their bodies. • The students will return to their desks and begin writing in their science journals. • The students should include what they learned, what they enjoyed, what they disliked, etc. • The learners will give their journals to the teacher to be graded and return to the carpet. 	<p>Students who need more assistance may be split up into groups based on developmental needs.</p> <p>The assisting teacher may aid students in re-reading the text.</p> <p>Students needing more of a challenge may be asked to include more detail in their science journals.</p> <p>Students needing more of a challenge may also be asked more higher order thinking questions.</p>
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	<p>creating sound waves that were travelling across the string. Can you all think of how to use your body to represent how the string vibrated?”</p> <ul style="list-style-type: none"> • The teacher will assist the students in using their bodies to recreate the vibrations. • Afterward, the teacher will direct the students to their desks to write in their science journals. • Their journals should include what they learned, what they enjoyed, what they disliked, etc. • The teacher will take each journal and grade it based on a rubric. • The rubric is based on a scale from 0-10. • Any student receiving a score of 8 or higher will have achieved mastery of the lesson objectives. • The teacher may use this information to help guide further instruction and decide what needs to be reviewed with the whole class and what can be reviewed either one-on-one or during teacher table. 		
<p>Questions and/or activities for higher order thinking: <i>These are open-ended and cannot be answered by yes or no. These can be asked at various points throughout the lesson and guide rather than direct student thinking.</i></p>	<ul style="list-style-type: none"> • What would life be like if you could not hear sounds? • How do sounds affect our everyday life? 	<ul style="list-style-type: none"> • “It may be scary because I wouldn’t know what is going on.” • “They let me know when a car is coming so I can get out of the way.” 	<p>The teacher may assist the students in answering higher order thinking questions based on developmental level of the</p>

<p>Closure: <i>Makes clear connections to real-world situations and requires students to reflect on and apply their learning through verbal or written expression.</i></p>	<p>“Boys and girls, would anyone like to volunteer and tell me what you learned from the activity today? ... Yes, you did learn that vibrations move like a wave. Does anyone else have something that they learned? ... You’re right, it is hard to understand words through the phones. You can still hear sound though, because the vibrations travel along the string. I have placed an audiobook copy of <i>How Sound Moves</i> on the computers if you would like to listen to it during centers or silent reading. It is also available in the library corner as well. Thank you all for working so hard on your phones and journals today.</p>	<ul style="list-style-type: none"> • TLW answer teacher questions about what they learned during the group activity. • The students will learn when and where the audiobook version is accessible and where to find the hard copy of the text. 	<p>students. IEP’s and 504 Plans will be met. During circle time, the students may be arranged in a way that best suits their development.</p>
<p>Material/Resources: <i>What do you need for this lesson? Identify, within a bulleted list, the specific materials and resources that you will use. Describe how these materials and resources add value, depth, and extend students’ learning.</i></p> <ul style="list-style-type: none"> • Multiple copies of <i>How Sound Moves</i> by. Sharon Coan • Audiobook of <i>How Sound Moves</i> by. Sharon Coan • Computers • White board • Dry erase markers • Tin cans • String • Paper clips • Science journals • Word wall • Laminated copies of word wall • Journal entry rubric 		<p>Technology: <i>(a) Describe the technology you plan to use in your lesson, (b) How does the identified technology in your lesson improve student learning? If applicable, (c) explain how you will use this technology to support a variety of student needs within the learning environment, and (d) If you used this technology to design and implement formative and/or summative assessments, please explain. Did you use the technology to collect and/or analyze your data to inform instruction? Explain.</i></p> <ul style="list-style-type: none"> • Students will have access to an audiobook version of <i>How Sound Moves</i> by. Sharon Coan. This allows struggling readers, ELLs, and ESLs the opportunity to participate in the activity. Students who understand spoken English better than written English may benefit as well. They may use the Audiobook during reading time or during the small group activity. 	
<p>Co-Teaching Strategies Used: <i>(highlight and explain all that apply): One Teach, One Observe; One Teach, One Assist; Station Teaching; Parallel Teaching; Supplemental Teaching; Alternative (Differentiated); Team Teaching</i></p> <ul style="list-style-type: none"> • One teach, one assist. The assisting teacher will help question students during the formative assessment portion of the lesson and may also help students needing more assistance. 			
<p>Management</p>			

Management: *Explanation of processes and/or procedures, transitions from one activity to another, strategies for gaining attention, motivating students to engage in the lesson and focus on learning (e.g. work boards, posted procedures, modeling, positive feedback, redirection). If management decisions were addressed above, please bold those processes and procedures.*

- The students must be aware of how to move from one section of the room to another. They will also need to know how to engage in academic discussion with each other. Safety concerns are involved in the movement activity. Students must be aware of their body and the area around them as they move to demonstrate the vibrations of the string in the tin can phones.

Theory/Rationale

- For the formative assessment, the teacher will continually make observations and take anecdotal notes. These notes allow the teachers to write down what the children are doing and saying, which can then be referenced later to help guide further instruction. The students will be engaged in a group activity in order to meet lesson objectives. This allows the children to develop communication and cooperation skills as they work together to create their tin can phones. The teacher will question the students as a way to further gauge their understanding of the lesson and lesson objectives. The teacher will use the strategy of one teach – one assist in order to provide students with further access to assistance and so the teacher may receive more anecdotal notes from the assisting teacher. The book *How Sound Moves* by Sharon Coan will be used to introduce the tin can phones and the movement activity. The teacher will use a rubric for the science journals as a summative assessment in order to gauge how well the students understood the lesson and because it provides a basis for which to grade the journals since they will all be different and based on personal learning experience (Morrow, 2012) (Bredekamp & Copple, 2009).

Lesson Title: Sound and Vibrations: Water music

Grade/Level: 2

Date/Learning Experience #: N/A

Curriculum Standards	Essential Question(s)/I Can Statement(s)	
<p><i>State Curriculum Standards – Underline your language/vocabulary words</i></p> <p>2.PS4: Waves and Their Applications in Technologies for Information Transfer 1) Plan and conduct investigations to demonstrate the cause and effect relationship between vibrating materials (tuning forks, water, bells) and sound.</p>	<p><i>What question(s) or I Can statement(s) drive your instruction?</i></p> <ul style="list-style-type: none"> • Can the students connect the vibrations of different materials to the sounds they make? • Will the students question the relationship and test hypotheses to answer their questions? 	
Lesson Objective(s) – Student Learning Outcome(s) for this learning experience		
<p><i>Objectives use active verbs, are measurable (if applicable), and link to standards. Consider using Bloom’s Taxonomy or Webb’s Depth of Knowledge.</i></p> <ul style="list-style-type: none"> • TLW strengthen their understanding of vibrations and sound via water music experimentation and exploration in small group. • TLW express their findings and thoughts via journal entry as a form of summative assessment. 		
Knowing Your Learners		
<p><i>Describe pre-requisite skills students already know that will help them meet the lesson objective(s). What is your evidence that students need this/ these skills(s)? This may include pre-assessment data; student personal, cultural or community assets you have gathered and observations you have made concerning your students.</i></p> <p>The learners have gained a variety of knowledge about many of the physical science standards. They have mastered most, if not all, of the objectives excluding the standards and objectives relating to sound and sound vibrations. The students have already learned the vocabulary words “vibration” and “speed” in terms of collisions and force. This will give them prior knowledge that they may rely on to master some of the sound concepts</p>		
Assessment/Evaluation		
<p><i>How will students demonstrate understanding of lesson objective(s)?</i></p> <p>Formative: <i>How will you monitor student progress towards lesson objectives as you are teaching?</i></p> <p>For formative assessment, the teacher will conduct observations and record anecdotal notes. These will be completed as the students are engaged in exploring the materials and creating music with the water and glasses. The teacher will record all questions the children ask and all answers the students give. The teacher will also record student conversations as they relate to the lesson. The teacher will use these notes to determine which students may need more assistance in completing the lesson objectives, and which students are near/have met mastery. While the teacher questions each small group of students, the assisting teacher may do the same and record answers as well. The questions will revolve around the vibration of the water, the vibration of the glasses, how they connect, what sounds are being produced, etc.</p> <p>Summative: <i>What evidence (formative and/ or summative) will you collect and how will you document student learning/ mastery of lesson objective(s)? A summative assessment is not needed for every lesson, however, it is required for every lesson submitted for CAEP data collection points I, II, and III.</i></p> <p>As aforementioned, the teacher will continually take anecdotal notes and</p>	<p>Assessment/Evaluation Modifications</p> <p><i>What modifications will you make on assessments/ evaluations for students with diverse and/ or special needs (i.e. students with IEP or 504, struggling learners, advanced learners) and will these modifications be within/ for small groups or individuals?</i></p> <p>Any students with an IEP of 504 Plan will be provided with modifications to meet those requirements.</p> <p>Any students needing more assistance may receive assistance from the teacher or assisting</p>	

conduct observations throughout the lesson. As a form of summative assessment, the teacher will use a rubric to assess the students' journal entries. The journals should include thoughts and opinions on the task as well as things they learned from exploring the materials, experimenting, creating music, and what they enjoyed most. The rubric's scale will range from a score of 0 to 10. The students will be required to receive a score of at least 8 in order to master the lesson objectives. For students that did not master the lesson objectives, the teacher may choose to review concepts via whole group instruction or teacher-table instruction. The teacher may also decide to speak one-on-one with students as well.

Academic Feedback: *How will you give academic feedback? How will your academic feedback promote student understanding of the learning objective(s) or state standard(s)?*

The teacher will provide the students with academic feedback in the form of questioning and suggestions. When the students are engaged in the small group activity, the teacher may ask them to verbally describe how the vibrations from the water and the glass relate to each other. The teacher may also ask the students if the speed at which they strike the glass changes its sound. The teacher will provide suggestions to the students. If a group is struggling with understanding what to do with the materials, the teacher may ask, "I wonder what kind of sound the glass makes if you hit it. Do you think the water could be useful?" The teacher will encourage the students to engage in academic discussion and provide feedback to each other.

teacher.

Small groups may be divided based on student need.

The teacher may change his/her questioning techniques based on what is developmentally appropriate for each student.

Academic Language Demands

Function and Product of the Lesson *The function is the verb, usually a Blooms verb (e.g., analyze, interpret, recount), that guides the language objective of the lesson. This includes a product that students will either write, say, present, or do that involves Academic Language (e.g., essay, present, recount).*

- The learners will demonstrate their understanding of the connections between vibration and sound via small group activity and describe what they learned or observed via journal.

Academic Vocabulary *What specialized terms and phrases do students need to understand what they are expected to do? How does this vocabulary connect to the objectives, state standards and function of the language demand?*

- Relationship (review)- The teacher will introduce and redefine this term during the set motivator. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall. The students must understand what a relationship is in order to define how sound and vibrations relate to each other.
- Vibration (review)- The teacher will introduce and redefine this term during the set motivator. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall. In order to meet lesson objectives, the students must understand what vibration is and how to describe it.
- Sound (review)- The teacher will introduce and redefine this term during the set motivator. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall. In order to meet lesson objectives, the students must

understand what sound is and how it relates to vibration.

- **Speed (review)**- The teacher will introduce and redefine this term during the introduction of the group activity. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall. In order to meet lesson objectives, the students must understand what sound is and how it relates to vibration and sound.
- **Force (review)**- The teacher will introduce and redefine this term during the introduction of the group activity. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall. In order to meet lesson objectives, the students must understand what sound is and how it relates to vibration and sound.

Content Vocabulary *What are the key vocabulary words, symbols, or sounds in this lesson? How does this vocabulary connect to the objectives, state standards and function of the language demand?*

- **Discuss (review)**- The teacher will redefine this term before the students begin the small group activity. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall.
- **Demonstrate (review)**- The teacher will redefine this term before the students begin the small group activity. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall.
- **Describe (review)**- The teacher will redefine this term before the students complete their journal entries. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall. In order to meet lesson objectives, the students must be able to accurately express their thoughts and define what the tin can experience taught them.
- **Experiment (review)**- The teacher will redefine this term before the students begin the small group activity. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall.
- **Explore (review)**- The teacher will redefine this term before the students begin the small group activity. The term will be available to students on a word wall within the classroom. Each student will also be provided with a handout version of the word wall.

Language Supports *What general instruction will you provide to help students in the whole class (e.g., word walls, learning partners, guided notes) learn the discourse/syntax? What focused instruction (e.g., Venn diagrams, graphic organizers, outlines, student examples, sentence stems) will you provide to help students learn the discourse/syntax (can be completed in small groups)? What individual instruction that targets the needs of an individual student(s) will you provide to help that student(s) learn the discourse/syntax? What opportunities will you provide for students to practice language/vocabulary and develop fluency? What tools (e.g., EQ or vocabulary board, Venn diagram, anchor chart, vocabulary cards, graphic organizer, peer support, sentence stems, pictures, table, chart, thinking map, modeling, sort, song, body movements, games) will you use to help students meet the language demands?*

General Supports – *Strategies used to support the whole class and may be used to support more than one demand (e.g., Venn diagram, learning partners, word wall, anchor chart, vocabulary cards, graphic organizer, sentence stems, pictures, table, chart, thinking map, modeling, sort, song, body movements, games). These strategies can cross disciplines and be used in a variety of lessons.*

. Students will have constant access to a large word wall within the room. The word wall will be interchangeable for every unit and include all the necessary vocabulary required to complete lesson objectives. In order to make the word wall interchangeable, each vocabulary word will be printed in large, easy-to-read font on a strip of cardstock. The cardstock will then be laminated and placed into a pocket of the word wall. Each word will also include a small picture and short definition to further assist the students in their language development. Each student will also receive a laminated copy of the word wall that they may use independently at their desks or take home for individual practice.

Targeted Supports – *Strategies that focus toward a specific language demand (e.g., Venn diagrams, graphic organizers, outlines, examples, sentence stems). These may be addressed during small groups. These can be general supports that are modified for specific students or groups of students.*

Each student will receive a personal copy of the word wall. The student may use this copy in any manner they choose such as an individual study tool. It may be left in the classroom or taken home for practice. Providing individual copies ensures that each student has easy and full access to all of the academic vocabulary whether in school or at home.

Individual Supports – Supports used to target the specific needs of an individual student (e.g., ELL, student with autism, struggling reader or writer, student with significant language delays). These students may or may not have been formally identified and may or may not have an IEP or 504 plan.

Any students who are ELLs, speak English as a second language, or are struggling readers may be provided with differentiated word wall handouts. These handouts may include more pictures that help define each vocabulary word. During whole group discussion and the small group activity, these students may receive assistance in writing or experimenting.

Instruction – When designing your instruction, consider when you will implement formal and informal assessments/evaluations, when you will provide feedback, and when you will teach academic language. Therefore, this section should include aspects written above.

Lesson Part	Description of Activities and Instruction (Teacher Does)	Description of Activities and Instruction (Students Do)	Meeting Individual & Group Needs / Learning Styles <i>Plans instruction to meet the needs of individual students. Adaptations are tied to learning objectives. Specific individual or group learning includes requirements in IEP or 504 plans.</i>
<p>Set/Motivator: <i>Restate and address your Essential Question. How do you engage student interest in the content of the lesson? How does this relate to previous learning? Use knowledge of students' academic, social, and cultural characteristics.</i></p>	<ul style="list-style-type: none"> • The teacher will call the students to the rug for circle time. • The teacher will begin the lesson by saying, “Boys and girls, we have been learning about sound for the past two weeks, and I have created a fun final activity for you all.” • The teacher will show the class the water and the glasses. • We will keep learning about sound and vibrations with these, but first I need to review some vocabulary, and then I have a video to show you all. • The teacher will redefine vocabulary. 	<ul style="list-style-type: none"> • Students will sit on the carpet for circle time. • Students will answer teacher questions and listen as the lesson is introduced. • Students will listen as vocabulary is defined. 	<ul style="list-style-type: none"> • Students will be arranged based on developmental needs. • Some students may wear headphones connected to the video to properly hear.
<p>Instructional Procedures/Learning Tasks: <i>Provide specific step-by-step details of lesson content aligned with objectives, utilizing a</i></p>	<ul style="list-style-type: none"> • The teacher will show the students a YouTube video of people playing music with water-filled glasses. 	<ul style="list-style-type: none"> • The students will listen and watch as the teacher plays the YouTube video 	<p>All students with IEPs or 504 plans will have their</p>

<p><i>variety of teaching strategies.</i></p>	<ul style="list-style-type: none"> • The teacher will periodically stop the video to mention and define vocabulary and write it on the board. • The teacher will draw special attention to the vibration of the glasses and the water. • The teacher will then state, “Boys and girls, you are going to be making music like this in small groups today. The materials should be on your table, and you are welcome to reference the video for assistance. I want you to explore your materials and experiment with them.” • The teacher will walk around and take anecdotal notes and complete observations. • The teacher will use questioning techniques as he/she walks around the classroom and may also ask higher order thinking questions. • The teacher will provide the students with academic feedback. • The teacher will also ask the groups to demonstrate how to play music using the water and glasses. • The teacher may ask each group to try and recreate the beginning of Twinkle Twinkle Little Star depending on how quickly the groups are able to master the concept. 	<ul style="list-style-type: none"> • The students will ask questions at any point if they are confused or wish to share ideas. • The students will answer teacher questions. • The students will listen as the small group activity is introduced and ask questions for clarification. • The children will return to their desks and use the provided materials to create music • As the teacher walks around, the students will be engaged in academic discussion and respond to teacher questions. • The students will respond to academic feedback. • The students will demonstrate how they have created music. • The learners will describe how the vibrations between the water and glasses create different sounds. • The students will return to their desks and begin writing in their science journals. • The students should include what they learned, what they 	<p>needs met.</p> <p>Students who need more assistance may be split up into groups based on developmental needs.</p> <p>Students needing more of a challenge may be asked to include more detail in their science journals.</p> <p>Students needing more of a challenge may also be asked more higher order thinking questions.</p>
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	<ul style="list-style-type: none"> • Afterward, the teacher will direct the students to their desks to write in their science journals. • Their journals should include what they learned, what they enjoyed, what they disliked, etc. • The teacher will take each journal and grade it based on a rubric. • The rubric is based on a scale from 0-10. • Any student receiving a score of 8 or higher will have achieved mastery of the lesson objectives. • The teacher may use this information to help guide further instruction and decide what needs to be reviewed with the whole class and what can be reviewed either one-on-one or during teacher table. 	<p>enjoyed, what they disliked, etc.</p> <ul style="list-style-type: none"> • The learners will give their journals to the teacher to be graded and return to the carpet. 	
<p>Questions and/or activities for higher order thinking: <i>These are open-ended and cannot be answered by yes or no. These can be asked at various points throughout the lesson and guide rather than direct student thinking.</i></p>	<ul style="list-style-type: none"> • How do you think people realized that the glasses would make different sounds with different amounts of water? • How did your group realize that the glasses would make different sounds with different amounts of water? • Why do you think it is important to learn about sound? 	<ul style="list-style-type: none"> • “They probably knew that the water would vibrate differently.” • “You taught us that vibrations make things sound different and we experimented a lot.” • “Because we hear sound all day every day.” 	<p>The teacher may assist the students in answering higher order thinking questions based on developmental level of the students.</p>
<p>Closure: <i>Makes clear connections to real-world situations and requires students to reflect on and apply their learning through verbal or written expression.</i></p>	<ul style="list-style-type: none"> • The teacher will call the students back to the rug and ask, “Boys and girls, have you had fun learning about sound these past couple of weeks? ... I have had a lot 	<ul style="list-style-type: none"> • TLW answer teacher questions about what they learned during the group activity. 	<p>IEP’s and 504 Plans will be met.</p> <p>During circle time, the students may be arranged in a way</p>

	<p>of fun too. I want to thank you all for working so hard on all of the sound activities. Would anyone like to share something they learned from the water music activity or something they thought was interesting? ... I think the way the water moves is interesting too. Remember class, all we have left now is your instrument performance.”</p>		<p>that best suits their development.</p>
<p>Material/Resources: <i>What do you need for this lesson? Identify, within a bulleted list, the specific materials and resources that you will use. Describe how these materials and resources add value, depth, and extend students' learning.</i></p> <ul style="list-style-type: none"> • White board • Dry erase markers • Videos of people playing music with water-filled glasses • Tall, different colored glasses • Bowl of water • Spoons • Science journals • Journal rubric 		<p>Technology: <i>(a) Describe the technology you plan to use in your lesson, (b) How does the identified technology in your lesson improve student learning? If applicable, (c) explain how you will use this technology to support a variety of student needs within the learning environment, and (d) If you used this technology to design and implement formative and/or summative assessments, please explain. Did you use the technology to collect and/or analyze your data to inform instruction? Explain.</i></p> <ul style="list-style-type: none"> • Students may be directed to YouTube videos in which people are playing music with water filled glasses. This will provide guidance and inspiration for the students. 	
<p>Co-Teaching Strategies Used: <i>(highlight and explain all that apply): One Teach, One Observe; One Teach, One Assist; Station Teaching; Parallel Teaching; Supplemental Teaching; Alternative (Differentiated); Team Teaching</i></p> <p>One teach, one assist. The assisting teacher will help question students during the formative assessment portion of the lesson and may also help students needing more assistance.</p>			
<p>Management</p>			
<p>Management: <i>Explanation of processes and/or procedures, transitions from one activity to another, strategies for gaining attention, motivating students to engage in the lesson and focus on learning (e.g. work boards, posted procedures, modeling, positive feedback, redirection). If management decisions were addressed above, please bold those processes and procedures.</i></p> <p>The students will need to be aware of how to move from one area of the room to another. They will also be using glass containers that may break. The students will need to be aware of how to properly handle objects and respect property.</p>			
<p>Theory/Rationale</p>			
<p>For the formative assessment, the teacher will continually make observations and take anecdotal notes. These notes allow the teachers to write down what the children are doing and saying, which can then be referenced later to help guide further instruction. The students will be engaged in a group activity in order to meet lesson</p>			

objectives. This allows the children to develop communication and cooperation skills as they work together to create music with water-filled glasses. This activity is also interesting and engaging, which will encourage the students to strengthen their knowledge of the concepts. The teacher will question the students as a way to further gauge their understanding of the lesson and lesson objectives. The teacher will use the strategy of one teach – one assist in order to provide students with further access to assistance and so the teacher may receive more anecdotal notes from the assisting teacher. The teacher will use a rubric for the science journals as a summative assessment in order to gauge how well the students understood the lesson and because it provides a basis for which to grade the journal entries (Morrow, 2012) (Bredekamp & Copple, 2009).

Unit Evaluation Plan

Overview

The teacher will use formative assessments and summative assessments throughout the unit plan. The teacher will determine whether or not students have mastered unit objectives. The teacher will use these assessments to gather information about which students understand the relationship between vibration and sound, and which students may need more assistance in understanding this concept. The teacher will also assess whether or not students are able to relate vibrations to sound throughout their daily lives and use knowledge from class experiences to determine that fact.

The teacher will implement different assessments throughout the units to gauge students understanding in different ways. The teacher will be sure to account for the different students' developmental levels and make sure everything falls under DAP.

Formative

The most commonly used forms of formative assessment throughout the unit plan will be observations and anecdotal notes. Throughout each activity in the unit, the teacher will be sure to walk around from student to student or group to group and take notes about what the children say and do. These notes will relate to children's understanding of each activity's content and objectives. During this time, the teacher may ask the students questions as well.

During the teacher's introduction activity, the teacher will be sure to introduce and review any academic language/vocabulary words such as "sound," "vibration," and "speed." The teacher will demonstrate the meaning of each word and be sure to provide students with a developmentally appropriate definition.

The teacher will be sure to use verbal questioning as a form of form of assessment as well. For example, during the rubber band guitar activity, the teacher may ask the student questions such as, "Do you hear the sounds the rubber bands make? Why do you think they make different sounds? How do the rubber bands move when they are making sound?" The teacher will then record the student's answers and use these to determine how well the student comprehends the content.

After a few of the activities in the unit plan, the students will be asked to write about what they saw, heard, or thought about the activity, The teacher will review what the students have written in their journals, and take note of any questions or concerns the students may have, or anything that may have been misleading in the activities.

Summative

Throughout the activities, the teacher will be keeping and using a checklist as she walks around the room. The checklist will cover things such as vocabulary use, engagement, how detailed students' answers are to verbal questions, etc. The teacher will check under each skill the child has displayed and write the date in which it was witnessed to provide evidence of the skill.

Playful Learning Elementary
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Room #305

Dear Families,

We are quickly moving through this school year, and it has been a pleasure to interact, grow, and learn with your child. As you may know, your child has been involved in a multitude of fun and engaging classroom experiences this year. Before the year concludes, we have one final unit to complete. This unit is based on the relationship between vibrations and sound! Your child will be participating in a variety of learning experiences and creating experiments to witness this relationship. This unit will last for approximately two weeks, and I encourage you to talk with your child about what he/she is learning as the unit progresses.

During the second week of the unit, your child will be bringing home a scavenger hunt sheet as a take-home activity. Your child will be asked to go around the home, yard, or parent workplace to find objects that make different kinds of sounds. These sounds may be described as loud, soft, high-pitched, low-pitched, etc. Your child must find at least one object for each sound description and write the name of that object on their provided scavenger hunt sheet. The sheet is then to be returned to me in the classroom. This activity should be fun and foster familial bonding. I encourage you to engage in this interesting and enjoyable activity with your child. Have some laughs, learn new things, and bond with one another.

If you have any questions, comments, concerns, or suggestions, you may reach me at Boydsb@g.learning.edu or through text/call at (276)-701-2892. As always, you are also welcome to come by the classroom any time. Happy hunting!

Sincerely, Ms. Boyd.

Resources

Teachers.

<https://brownbagteacher.com/sound-1st-grade-science/>

<https://www.scienceworld.ca/resources/activities/sound-vibration-vibration-vibration>

https://www.pbslearningmedia.org/resource/phy03.sci.phys.howmove.lp_sound/sound-vibrations/

<https://sciencewiz.com/portals/sound/>

Families.

<https://brownbagteacher.com/sound-1st-grade-science/>

<https://www.dkfindout.com/us/science/sound/>

<http://www.sciencekids.co.nz/sciencefacts/sound.html>

<https://sciencewiz.com/portals/sound/>

Students.

<https://www.youtube.com/watch?v=AGjxfx8sy6s>

<https://www.pbslearningmedia.org/resource/phy03.sci.phys.mfe.ztunefork/sound-and-solids-visualizing-vibrations/>

<https://www.dkfindout.com/us/science/sound/>

<https://sciencewiz.com/portals/sound/>

Unit Resources

Brown, T., & Boehringer, K. (2007). Breaking the Sound Barrier. In *Science and Children* (pp. 35-39).

Gunning, A. M., Marrero, M. E., Buonamano, C., & Somers, V. (2018). Waves Sound Great! In *Science and Children*(pp. 33-38).

Scheunemann, L., Hall, S., & Jeley, A. (2016, July 22). Sound: 1st Grade Science. Retrieved from <https://brownbagteacher.com/sound-1st-grade-science/>