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| **Grade:** 1st | | | **Subject:** Science | |
| **Materials:** The Magic School Bus: In the Haunted House – Sound is Vibration from YouTube; shoeboxes, rubber bands, tape for each shoe box; 1 15 inch string for each shoe box | | | **Technology Needed:** Active Board | |
| **Instructional Strategies:**   * Direct instruction * Guided practice * Socratic Seminar * Learning Centers * Lecture * Technology integration * Other (list) | | * **Peer teaching/collaboration/**   **cooperative learning**   * Visuals/Graphic organizers * PBL * Discussion/Debate * Modeling | **Guided Practices and Concrete Application:** | |
| * Large group activity * Independent activity * **Pairing/collaboration** * Simulations/Scenarios * Other (list) | * **Hands-on** * Technology integration * Imitation/Repeat/Mimic |
| **Standard(s)**  1-PS4-1: “Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.” | | | **Differentiation**  **Below Proficiency:** Unable to prove that vibrating materials can make sound.  **Above Proficiency:** Able to create other items besides a shoebox to prove that vibrating materials can make sound.  **Approaching/Emerging Proficiency:** Able to prove that vibrating materials can make sound.  **Modalities/Learning Preferences:** Physical, verbal, logical | |
| **Objective(s)**  Students will create an instrument and provide evidence that their instrument can make sound from vibrating materials.  **Bloom’s Taxonomy Cognitive Level:** Create | | |
| **Classroom Management- (grouping(s), movement/transitions, etc.)**  Students will be in whole group, at the carpet. They do not need any supplies yet.  For group work, students will be in their own space around the room. | | | **Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.)**    Whole group expectations: Criss-cross legs  Group work expectations: be kind, pencils and scissors are tools not toys | |
| **Minutes** | **Procedures** | | | |
| 5 | **Set-up/Prep:**   * Have the video from YouTube: “The Magic School Bus: In the Haunted House – Sound is Vibration” up and ready to go. * Have a picture that explains how to label a diagram. Type in Google “Labeling a diagram” for an example picture. * Print off copies of the document “Sci Sounds worksheet” for each person in the class (See Appendix A). | | | |
| 8 | **Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.)**  - Today, we are going to watch a video about sound. Pay attention to how they explain sound and vibration.  - Show the video from Youtube: The Magic School Bus: In the Haunted House - Sound is Vibration  - I do not want you to say anything, but just think for a minute. What did you learn that you did not know about before?  - Ok, turn and talk to your neighbor and ask them what they learned from this video.  - Allow time for students to turn and talk.  - Say “5, 4, 3, 2, 1” to get the students attention. What did you and your neighbor discuss? (Answers vary) | | | |
| 3 | **Explain: (concepts, procedures, vocabulary, etc.)**   * What is a sound? (Answers vary)   Explain that a sound is a noise from vibrations.   * Why do sounds sound different from one another? (Answers vary) * How are sounds made? That is a big question isn’t it? How many of you are wondering the same thing? | | | |
| 30 - 40 | **Explore: (independent, concreate practice/application with relevant learning task -connections from content to real-life experiences,** **reflective questions- probing or clarifying questions)**   * Today, you are going to explore how sounds are made. You will working in groups and will create an instrument that will make a sound out of a box and rubber bands. * You will first need to discuss with your group how to create an instrument that will make sound. * Then, you will work together to create it. * If it does not work, try a new idea in order to make sound occur. * While you are working, remember the question: how are sounds made? I want you to observe after you create your instrument and see how the sound is made. * After observing, you will create a diagram of your instrument. Can anyone tell me what the term diagram means? (Answers vary). A diagram is a picture, drawing, or outline of something. You will draw a picture of your instrument on this piece of paper in the box that says “Diagram.” (See Appendix A for the worksheet each student will get) * The instructions also say to label your diagram. Does anyone know what labeling means? (Answers vary). Show an example of labeling from Google search “Labeling a diagram” and choose a picture that will help explain how to label their diagram. * So when you draw your shoebox, you will have to label it “Shoebox.” * Give me a fist to chest thumbs up or down if you understand what a diagram is and how to label a diagram. Explain again if needed. * I am going to draw popsicle sticks for the groups. You can use the space around the room to work on your project. Once your group is called, you can go over to the counter to grab the materials and find a spot to begin your project. If you need to use scissors, make sure to grab one. * Draw popsicle sticks. * Allow time for students to complete the activity. * If there are 2– 4 groups still working on the project and the rest of the students are done, give a 4-minute warning to finish. * If students finish before other students, have the students think of a different way to make sounds either with a shoebox or a different item. Have the students write their ideas on the back of the paper. * After all students have finished or when time is up, get the students attention by saying “Macaroni and Cheese” * Explain to the students that they are going to put their projects against the wall by the active board set their worksheet on their desk then sit at the carpet. * Once all students are ready, ask the students if they discovered how the sound was made. (Answers vary.) * Your group may have noticed that if you pulled the rubber band, the rubber band would move and make a sound. Model by showing how sound can be heard by pulling the rubber band. When I pull the rubber band, you see a movement. The movement is called a sound wave or vibration. This is how sound is formed. * I want you to hold out two fingers. (Make sure everyone has two fingers out) * Place your two fingers gently on your throat (model for students to see how to do it) then hum. * I want everyone to try it. Explain again. * My turn: Now, wait until I do it first, I want you to hum a high pitch (model). Now you do. * My turn: Now, wait until I do it first again, I want you to hum a low pitch (model). Now you do. * “5, 4, 3, 2, 1”… Raise your hand if you felt something move on your fingers? * Hands down please. Vibrations are causing it to move. * Now that we have learned whenever we hear sound, we are hearing vibrations or sound waves and it is telling our brain what we are hearing. Sound waves are everywhere. Wait until I say go, I want you to go back to your desk and answer the question on your paper that says “how are sounds made?” If you have already answered, I want you to think of different sounds you hear during the day and write it on the back of the paper. All right, you may quietly go back to your desk and fill it out. * Allow time for students to complete worksheet. | | | |
| 5 | Review (wrap up and transition to the next activity):   * Now that everyone has completed the worksheet, what did you learn that you did not know before? (Answers vary) * While listening to their answers, go around and pick up their worksheets. * Explain again that vibrating materials can make sound and sound can make materials vibrate. | | | |
| **Formative Assessment: (linked to objectives)**  **Progress monitoring throughout lesson- clarifying questions, check- in strategies, etc.**  Thumbs up or down and modeling    **Consideration for Back-up Plan:**  If the video does not work, explain what occurred in the video. Ask if anyone has seen a guitar before. What happens when someone pulls the string? Does the string move?  If the projector does not work, explain how to do | | | **Summative Assessment (linked back to objectives)**  **End of lesson:**  Students will explain how sounds are made on the given worksheet.  **If applicable- overall unit, chapter, concept, etc.:**  Students will have the expectation of above, as well as drawing their diagram of their instrument on the worksheet with labels. | |
| **Reflection (What went well? What did the students learn? How do you know? What changes would you make?):**  I thought this lesson went very well. It did get loud due to students being in groups and talking about how to make their instrument. When I was explaining to the students on what to do, I told them when they work with their groups; they need to use a whisper voice so other groups do not see their idea on how to make the instrument. They ended up not using a whisper voice and I should have made everyone stop what they were doing and remind them to use a whisper voice. However, I think the students were very excited to create an instrument and forgot to be quiet. While they were creating their instrument, I was at first worried that they wouldn’t know how to create the instrument to make sound. But, while I was walking around and observing, I noticed that each group figured out how to make sound out of their instrument. I knew that the students learned how sound became made because they pulled on the rubber bands to create sound. I also provided a worksheet after they finished their instruments to explain how they knew sound was formed. Then, I also lead a discussion about sound. They seemed very interested and excited that they were able to create an instrument. One thing I would change would be to have different stations with different materials and ways to create sound. Then, they would be able to see different ways in how sound can be made. | | | | |

Appendix A

Sounds, Sounds, Sounds!

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Draw a diagram of your instrument in the box below. Make sure to include labels!

How are sounds made?

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