

Sound learning

COOPERATIVE LEARNING ASPECTS OF THIS LESSON: Practice in research by locating answers to questions about sound and hearing.

GROUP SIZE: 2 to 4

ASSIGNMENT TO GROUPS: Mix based on personalities and cooperation skills.

MATERIALS: Questions cards made from the questions supplied and others added. Also be sure to download the very good lesson interdisciplinary/science/weather also found here on AOL in this section. It is very good. It gave me many ideas.

ACADEMIC TASK: Students will learn basic concepts of sound using guide questions and library and online resources. They will translate that information into a visual item for a bulletin board display and into a "book" designed to share with other students.

GROUP INTERDEPENDENCE: Each group will only get one copy of their questions to be answered. They will be graded on the posters as a group.

INDIVIDUAL ACCOUNTABILITY: A random person may be chosen, after completing the project, to share with the class their findings. Students will be graded on their individual report notebooks.

LESSON: (takes 5 or more class periods depending on added factors. An example would be to require each group to create four or so of their own questions. These could either be used for the entire class in the next lesson, or could be answer by the group that created them for extra credit or required for an A grade.)

1. Word web what is already known about sound. Make a copy of the web.
2. Brainstorm: How do you resolve conflict in a group? Write down at least three ideas on a piece of paper.
3. Brainstorm: What do you want to see in a good group leader? Write down at least three ideas on the same piece of paper.
4. Assign sound questions to be asked and assign groups and leaders.
5. Explain that the students are to locate the answers to the questions , write a neat response suitable for a board display or in a short report format (as assigned), and illustrate their response with art, charts, or a suitable demonstration project that would be usable by other students. Provide a complete list of all resources used.
6. Brainstorm where students might go to find the answers to their assigned questions. Please do not forget to include electronic resources such as CD-rom, online services, and the telephone and a phone book.

7. Collect all projects. Assemble in the classroom for all to see. Better yet, provide a meaningful audience for it. IE: Nursing home, school library, local business, public library.

1. Find the definitions for sound out of at least three dictionaries. Make a spelling list based on words in the definitions you find and in the projects you do. Be sure to use different word endings. Create 3 possible test questions based on a definition for sound or from the projects in these reports.

2. Find a play suitable for a short radio play. Gather materials for sound effects. Practice the play until it can be presented smoothly. Tape a five minute portion of the radio play using those sound effects.

3. Create an art montage of things that make sound. Use magazine pictures from home, not the library, to create a poster display for the room. Be as diverse and open minded as possible. Be sure the display is neatly presented.

4. Create a sound guessing game. Make a collection of materials such as tissue, wood, carpet, glass, and other items that make noise. Try to find difficult ones. Build a screen and make a chart listing the materials that you will use to make sound. Test listeners to see how well they are able to guess the source of the sound. Keep accurate records for each person on the accuracy of their guesses. Create a graph showing the correct number of responses for each item.

5. Create a sound demonstration project showing how sounds travel in water versus in air. Process: Blow up a balloon and hold it next to your ear. Hold a ticking watch on the other side of the balloon. Now fill another balloon with water and hold it next to your ear with the watch. Which balloon makes the sound louder? Why? Create a possible test question. (Sound travels 5 times faster through water than it does through air. The sound will be louder through the water filled balloon.)

6. Seeing Sounds: To see a picture of your voice, try this: Cut off the neck of a balloon. Discard neck and stretch the rest of the balloon tightly over the end of a cardboard tube. Use a rubber band to hold the balloon in place. 2. Glue a small square of tinfoil onto the balloon skin. 3. Shine a flashlight onto the foil at an angle so that you can see a bright spot of light reflected onto the wall or a sheet of cardboard. 4. Speak into the open end of the tube. Try high and low sounds as well as loud and soft sounds. Watch the spot of light as it vibrates to your voice. Explain in a paragraph what is happening. Write as neatly as possible. A portion of this grade will be on penmanship.

7. Search books in the library or call a resource center for the deaf to learn about the different kinds of deafness. Build a poster display with pictures and written information to explain what you learn. (decibel loss-like turning down the volume on a tv;frequency loss-losing high or low pitch hearing which would impact letters such as s for high and b for low pitch loss)

8. There are several different ways that deaf people understand the hearing. Explain the good and bad features of lip reading. Research and explain the operation of hearing aids.

9. How do people who are born deaf learn how to talk?

10. What is a Boatswain's Whistle? Check out the book "Flashes and Flags". Build a poster display that would show at least five different messages that can be communicated with the whistle. How do construction workers communicate without their voices over the noise of a construction site? What signals does a Landing Signals Officer use on the deck of an aircraft carrier? How are flags used to communicate messages between ships? Make a poster display that would include all of these means of communication.

11. What is the history of the morse code? Make a display of the entire code.

12. Check out and read the book "Anna's Silent World" by Bernard Wolf. On a sheet of notebook paper describe the book. Ideas: Include information about the types of things Anna must learn in order to communicate with others. Discuss the ways she adjusts to the daily life at her school. What are the problems she encounters? Write neatly because you will be sharing your book review with others.

13. Check out and read the book "What is the Sign for Friend?" by Judith Greenberg. On a sheet of notebook paper describe the book. Ideas: Tell us about Shane. What can he do? What does he have difficulty doing? How does he adjust to his challenge? What did you like or find most interesting or surprising in the book? Write neatly because you will be sharing this book review with others.

14. There is a book in the library written by Thomas Bergman about children living with deafness. Find the book on your own. On a sheet of notebook paper neatly write a book report. Ideas: Tell us about Lina and the others in the book. How do the kids whisper secrets to each other in sign language? Do deaf people go to plays and concerts? Choose the four best questions from pages 42 - 45. On large note cards rewrite your four favorite questions and answers. Display them on a poster with a few pictures.

15. Check out and read the book "I'm Deaf and It's Okay". Do a book report. Ideas: Who is the story about? What concern does the boy have about getting older? How is that concern eased? Tell me about the authors own experiences with deaf people. Write this book report neatly because you will be sharing it with others.

16. Make a demonstration poster showing what it is like to have a frequency loss. Write three sentences of about ten words each. Then write them again leaving out the following: s,sh,ch,t,th,p, and f. Can you figure out the words by reading them? Test at least five people. Can people understand the sentences when you read them aloud in this way? Include the results of your test on the poster.

17. Write a letter requesting more information about hearing impairment. You will find addresses in a book in the library by Thomas Bergman that is about children living with deafness. Find the book on your own. Save a copy of the letter you send and any information you may get back. Use proper letter writing form as found in your english text.

18. Make up a glossary of words about hearing and deafness. Include at least 20 words and their definitions.

19. The loudness of sounds is measured in units called decibels. Look and write down the definition for decibel. Create a decibel scale chart that shows a range of decibels a sound might be such as a whisper and a jet taking off. What can people do to protect their ears from loud sounds. Make a poster that includes all of this information.

20. Do a blindfold hearing test. Blindfold a friend and ask him/her to stand with his/her back to you. Drop a pin 6 inches so it lands on a table top. If the person can hear the pin move back two paces at a time until the pin can no longer be heard. Make a chart showing your results. The vertical axis of the graph should indicate the number of students and the horizontal axis should indicate the distance the listener is from the pin.

21. Create a poster showing the differences in hearing of numerous animals and man. For example, man can hear 20 - 17,000 HZ and cats can hear 30 - 45,000 hz. How do other animals compare?

22. What is the loudest insect? How would you describe its sound? How far away can it be heard?

23. Who can whistle the loudest? How loud can he whistle?

Where and when did he do it?

24. Who has the loudest snore? Where and when did this occur? Why does this occur?

25. How far is the greatest range the human voice can be heard and understood? What is the "silbo"? How do womens voices compare with mens in distance heard?

26. What is the speed of sound? How does this compare to the speed of light? Where can this difference in speed be noticed?

LESSON PLAN MR. LOWE

SUBJECT: Science et al
TIME: Friday 9:10
DATE: 11/5/93

OBJECTIVES: Determine what students know about sound and deafness. Set stage for first lesson on sound. Entire unit will build on knowledge of sound (see questions) and increase research skills. The unit also will build cooperative learning skills.

REQUIRED MATERIALS:
Word web materials: Butcher paper pens

SET: We are entering a week long unit on sound and deafness. Before we begin I need to know how much you already know about sound. Lets brainstorm a word web. How many of you have done them before? What are they for? (organize knowledge and thoughts in a visual/ concrete form) sound is center of hub. May include what sound is;what makes sound;where;how;

###

LESSON:
Explain format of unit.
Explain time line for lesson.
Hand out schedule and paper for folders.
Assign groups.
Hand out questions.

Dear Parents and students,

We are beginning a new unit on sound and hearing. This is a new unit designed to build skills needed by students who are entering an age of information and computers. We will be learning about sound, but that is really secondary to the methods used to gain that information. I feel it is critical that students know how to find and use all of the resources that are available to them. It is also important that students learn how to work together. This unit will also focus on reading for information and rewriting and presenting that information for the others in the group.

For many of the students the time provided in class will almost be enough to complete the project. I do recommend, however, that parents regularly check the progress of their child. I have found that many are still turning in work that is well below their capabilities. This could easily be improved by spending a few minutes more on their assignments at home. I would greatly appreciate your assistance with this because it really does maximize student learning. Due dates will be posted in each students assignment sheet.

If you have any questions please feel free to call. Please feel free to call me at home or at school. You can also leave a note for me in the front of your childs sound report folder.

PARENT COMMENT AND SIGNATURE PAGE:

Please sign here when you have checked the report and have any comments for your child or Mr. Lowe.-

REPORT FORMAT:

1. Parent comment pages page_____.
2. Letter to parents. page_____.
3. Report format page. page_____.
4. Group member roster. page_____.
5. Sound question pages. page_____.
6. Report pages. page_____.
7. Bibliography. page_____.
8. Note taking pages. page_____.

PROJECT REQUIREMENTS

Students are to locate the answers to the questions or meet any other requirements of the question assigned. If applicable be sure to write a **neat** response suitable for a board display or in a short report format (as assigned). In either case be sure to illustrate your response with art, charts, or a suitable demonstration project that would be usable by other students. Students are encouraged to go beyond the requirements given. Simple 2 or 3 sentence answers will NOT meet minimum requirements. **Provide a complete list of all resources used.**

Be sure to have all work needed at school each day. A student's grade will be docked 10% for each day that materials or supplies are missing. Assignments must be turned in on time to be awarded full credit.

Grade guidelines:

- A:
1. Project **exceeds** assigned minimums.
 2. Report or assigned project is **neatly** completed.
 3. Student was **actively** involved in all aspects of project preparation.
 4. Student worked **cooperatively** with other group members.
 5. Student was able to answer all teacher questions about every group members report or project at end of project.
 6. Project is completed **on time**.
 7. **All needed materials are brought to class every day.**
- B: Project meets assigned minimums.
Project failed to meet one of the above guidelines from # 2 - 7
- C: Project failed to meet assigned minimums.
Project failed to meet two of the above guidelines from # 2 - 7.
- D: Project failed to meet assigned minimums.
Project failed to meet three or more of the above guidelines # 2 - 7.

PROJECT RESOURCES

1. RESOURCE NAME:
AUTHOR:
PUBLISHER:
DATE:
WHERE WAS IT FOUND?:

2. RESOURCE NAME:
AUTHOR:
PUBLISHER:
DATE:
WHERE WAS IT FOUND?:

3. RESOURCE NAME:
AUTHOR:
PUBLISHER:
DATE:
WHERE WAS IT FOUND?:

4. RESOURCE NAME:
AUTHOR:
PUBLISHER:
DATE:
WHERE WAS IT FOUND?:

5. RESOURCE NAME:
AUTHOR:
PUBLISHER:
DATE:
WHERE WAS IT FOUND?:

6. RESOURCE NAME:
AUTHOR:
PUBLISHER:
DATE:
WHERE WAS IT FOUND?: