

**DEAFNESS  
AND  
HARD OF HEARING**

PLEASE RETURN ME TO THE UNIT LEADER AT THE END OF THE CLASSROOM PRESENTATION--it is very costly to keep replacing me. Even if you discover me a long time after the program, we still appreciate the return. Just bring me to the school office. THANK YOU !

**JUST LIKE ME**

# DEAFNESS AND HARD OF HEARING

## LARGE GROUP:

### INTRODUCTION

Power point presentation.....10 minutes

COMMUNICATION . . . . . 15 minutes

### ACTIVITY #1

Sign language.....15 minutes

## SMALL GROUP ACTIVITY CENTERS:

### ACTIVITY #2

Fingerspelling.....15 minutes

### ACTIVITY #3

Assistive technology.....15 minutes

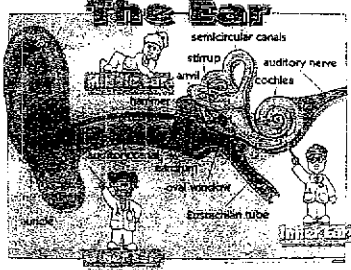
### ACTIVITY #4

Lipreading.....15 minutes

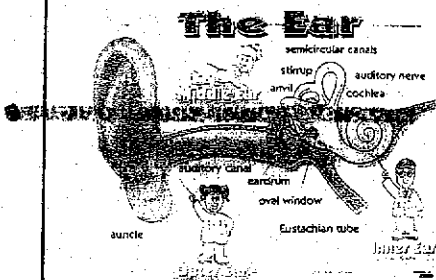
## LARGE GROUP:

Wrap up.....5 minutes

## SOUND, FREQUENCY AND THE EAR

	SLIDE	DISCUSSION
1	Deafness and Hard of Hearing	<p style="text-align: right; margin-right: 50px;"><i>Just Like Me</i></p> <p>Welcome to the <del>Understanding Our Differences</del> Program. Today we are going to learn about people who are deaf and hard of hearing.</p>
2	How do we hear?	It is hard to know what it would be like to be deaf or hard of hearing. Very few people have total hearing loss; almost everyone can hear some sound. Some people only have hearing in one ear. The amount of sound people can hear varies enormously among individuals.
3	"What is Sound?" Video	Let's watch a video clip that describes what sound is.
4	"Travel Inside The Ear" Video	Now, let's watch a video clip that describes how sound travels through the ear.
5		<p>This picture shows the inside of the ear. Our ears detect sound vibrations. As we just heard on the video,</p> <ul style="list-style-type: none"> <li>• The ear has three parts: the outer ear, the middle ear and the inner ear.</li> <li>• Sound waves enter the outer ear, travel down the ear canal and cause the eardrum to vibrate.</li> </ul>
6	Damaged nerve endings in the cochlea can cause hearing loss of:	<ul style="list-style-type: none"> <li>• Then, the sound waves enter the inner ear. The inner ear contains the cochlea, a snail-shaped structure with many nerve</li> </ul>

- High frequency sounds
- Low frequency sounds



endings that react to sound waves. The nerve endings turn the sound waves into signals sent to the brain.

- The nerve endings in the cochlea are like piano strings. Each piano string makes a specific sound. Some are high-pitched which are high frequency and some are low-pitched which are low frequency.
- If a piano string breaks, it will not make any sound. If a nerve ending in the cochlea is damaged or missing, it will not hear that frequency.
- The more nerve endings that are damaged in the cochlea, the more severe the hearing loss.

7

Can you think of some high pitched or high frequency sounds?

Can you think of some high pitched or high frequency sounds?

8

### HIGH FREQUENCY SOUNDS

- Doorbell
- Telephone ring
- Flutes
- Violins
- Women's and children's voices
- High singing voices

Some examples are doorbells, telephones, flutes, violins, women's' and children's' voices and high singing voices.

9

### HIGH FREQUENCY SOUNDS

"s", "t", "f", "th" and "p"

There are certain sounds in our speech that are high frequency sounds such as "s", "t", "f", "th" and "p". People who can't hear these sounds, might have difficulty following conversations.

10

### LOW FREQUENCY SOUNDS

- Thunder
- The bass
- Jackhammer
- Men's voices
- Low singing voices

Raise your hand if you ever have felt thunder?

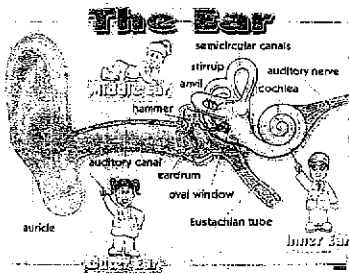
Thunder creates a low frequency sound that is so intense that you can feel the vibrations.

Some other low-pitched or low frequency sounds include the bass, a jackhammer, men's voices and low singing voices.

11

Are there times when you are not able to hear very well?

Some hearing losses are temporary.



Are there times when you are not able to hear very well? (*when you have a cold, ear infection, in an airplane, after swimming, at a rock concert, when you are around loud machinery, listening to loud music*)

Some hearing losses are temporary.

Difficulty hearing for these reasons is related to the function of the middle ear and the Eustachian tube. (Point to the middle ear and the Eustachian tube.) This kind of hearing loss generally disappears over time or can be treated with medicine.

12

### HOW TO PROTECT YOUR EARS

- Turn down the volume on the TV, radio, iPod, cell phone
- Don't put objects in your ears
- Tell someone if there is noise that is too loud.

You can and should protect your ears.

- Turn down the volume on the TV, radio, iPod, cell phone
- Don't put objects in your ears
- Tell someone if there is noise that is too loud.

**PAUSE THE POWERPOINT AND MOVE ON TO THE COMMUNICATION ACTIVITY**

## COMMUNICATION

1 Leader  
10 minutes

### **Purpose:**

- To learn what "communication" means
- To learn different ways of communicating
- To understand that people who are Deaf and hard of hearing have a variety of communication choices.

### **Materials:**

- PowerPoint CD
- PowerPoint projector and compatible lap top computer from your school (must be provided by school and requested in advance)

### **Setup:**

- Continue using the PowerPoint slides

### **Procedure:**

- Students sit in their seats.
- A background discussion is held about communication.
- Read directions for the activity.
- Show and read slide #13 on the PowerPoint.
- Select a few students to demonstrate their communication technique.
- Resume communication discussion.
- The students are divided into four groups and assigned to stations for the next activities.

## COMMUNICATION

What does 'communication' mean to you? (*Hearing and listening to one another, expressing your ideas, explaining your feelings, giving and receiving information*)

Communication is the exchange of thoughts, ideas, feelings and information. It involves sending and receiving messages. It is important for all of us to communicate in ways that feel natural.

Listen to the following directions before we start the activity. We are going to do an activity without using our voices.

1. Read the statement on the slide.
2. Then, think for 1 minute about how you would communicate what is on the slide without using your voice.
3. Turn to your neighbor and try it out.
4. When I say time is up, settle down and we'll share what worked.

(Leader shows and reads slide #13)

13

Come sit next to me at lunch.

(After a few minutes)

Time is up. I noticed many of you using facial expressions and hand gestures. Would someone like to demonstrate what worked well for him or her?

Are there other examples of communication without using your voice? This is called non-verbal communication and most of us do it all the time without even realizing it. (*showing emotions, gesturing, sign language, art, music, dance, lipreading*)

We can all communicate. Today we are using the English language. American Sign Language (ASL) is a visual language, using the eyes, and a gestural language, using the hands. It involves signs, facial expressions, body movement and fingerspelling. It is just one of several ways that someone who is Deaf might communicate their thoughts and feelings and share information. Most people communicate in the language they hear or see from birth such as English, Spanish, Chinese, Russian or ASL.

Most people learn to speak by imitating the sounds they hear. When someone has a hearing loss from birth, it can be very challenging to learn to talk or speak clearly because the person could never hear what words sound like. At the same time, they cannot understand what is being said. Some individuals with hearing loss still choose to learn to speak; others do not.

Can you think of other ways to communicate that Deaf or hard of hearing people might use? (*paper and pen/pencil, listening and speaking, lipreading*)

As you can see, there are a variety of communication choices for people with hearing loss and their families. People tend to choose what works best for them. Most children and adults who are Deaf and use ASL feel proud when they communicate in their language and they do not feel like they have a disability at all. They experience the world more visually and enjoy being with others who share a common language to communicate.

**We are now going to divide into four groups for activities.**



## DEAFNESS AND HARD OF HEARING BACKGROUND INFORMATION

This background information provides leaders with additional information about the Deafness and Hard of Hearing unit that is not presented to the students. It is provided to help you avoid misconceptions, use appropriate disability-positive language and to answer questions that may arise during class discussion.

Deafness and hard of hearing are the preferred terms when referring to people with hearing loss. We do not use the term hearing impaired in the Understanding Our Differences Program. Please note that we use a capital "D" when referring to deafness as a culture or a community using sign language. A small "d" is used when describing deafness as a loss of hearing or an auditory condition.

Deafness describes a spectrum of hearing loss from mild (hard of hearing) through moderate, severe and profound. The degree of deafness determines one's ability to hear speech unaided. Some hearing losses can be compensated with amplification, while other hearing losses are so profound that amplification does not result in functional hearing. Hearing loss that occurs in the outer or middle ear may create a muffled sound that can be boosted with the help of technology, such as a hearing aid. Hearing loss that occurs in the inner ear is referred to as sensorineural loss. It is more aptly described as missing or having distorted frequencies in the range of human hearing that can make speech unintelligible. For some deafened individuals, hearing aids and nerve stimulation provide great satisfaction; for others they serve no functional benefit.

In addition to the **degree** of deafness, hearing loss is often described based upon whether it occurred before or after an individual acquired spoken language. Depending upon the **age of onset**, an individual may be fluent in spoken language before losing hearing. In this case, an acquired hearing loss primarily affects an individual's receptive communication, thereby significantly impacting interpersonal interactions. Such hearing loss is most often managed with hearing aids, the use of lipreading and a variety of assistive technology and devices.

A congenital hearing loss (loss from birth) affects not only one's ability to communicate, but also one's ability to learn language. An infant who does not receive early language stimulation may have learning delays, especially language fluency and literacy. It is extremely important for such losses to be identified as early as possible in order to provide early intervention services to support language acquisition. Massachusetts is one of 32 states that mandates universal newborn hearing screening in an attempt to identify those babies born

with significant hearing loss. Early intervention services may include oral/aural methods, sign language and assistive technology.

Hearing loss may be bilateral (in both ears) or unilateral (in one ear). With unilateral hearing loss, listening difficulties become significant when there is background noise because hearing in both ears is necessary to "filter out" background sounds. Conversational speech may be misunderstood when sound is directed to the ear with hearing loss. Sound travelling to the hearing ear sounds softer or muffled. Localizing where a sound is coming from may be difficult, as all sounds seem to occur from the hearing side. People with unilateral loss often benefit from the use of amplification systems in classroom and large group settings.

Even a mild or unilateral hearing loss can cause a person to miss pieces of spoken information, especially when more than one person is speaking at the same time. It is therefore important, as well as proper etiquette, to have only one person speaking at a time when someone with hearing loss is present, totally eliminating side conversations.

### **Manual and Oral Communication**

Throughout the past two centuries, there has been an ongoing controversy as to whether people with deafness should use manual or oral communication. In the United States during the early nineteenth century, the manual method, sign language, was the main form of communication used by Deaf people. Sign language was respected by the hearing community and was accepted as the best method for enabling Deaf people to learn and communicate easily. Oralists disagreed and promoted a society where deaf and hearing people could work and learn together exclusively using the oral method, the use of voice and lipreading. In the late nineteenth century, there was an impassioned debate between oralists and manualists. The oralists prevailed and sign language was banned in schools and public places in the United States. This decision denied Deaf people the right to choose their preferred mode of communication.

After the banning of sign language in schools and public places, Deaf students continued to secretly use sign to communicate. During the 1960's, American Sign Language (ASL) became recognized as a bona fide language on par with spoken language. Today ASL flourishes in schools and public places.

**Deaf culture** is a voluntary community of people who views disability not as a deficit, but as a difference. It is complete with its own language, American Sign Language in the United States, which binds together those who embrace their uniqueness. ASL is a language that creates literacy, poetry, puns and jokes quite apart from written or spoken English.

**Deaf pride** is a result of overcoming oppression and ridicule, relishing a language that satisfies all needs, recognizing that intelligence and education are valued and attained in the Deaf community, and summed up in the oft cited quote, "Deaf people can do everything except hear."

### **Deaf President Now (DPN)**

In 1988, at Gallaudet University, Deaf students, supported by faculty, alumni, national political leaders, interpreters and the media, joined together to change the attitude of the hearing world. The Board of Trustees of Gallaudet University had rejected two deaf candidates and selected a hearing person to be President of the university. Gallaudet students rose in protest against the decision. The movement to appoint a deaf president at Gallaudet became known as Deaf President Now (DPN) and was essentially the civil rights movement of the Deaf. In one week, Gallaudet students and supporters altered the way the world viewed deaf people.

### **Total Communication**

Total communication is a philosophy that advocates the use of any and all means of communication available, such as sign language (ASL or manually coded English), spoken language, cued speech, written language, mime, facial expression and gestures. Simultaneous communication means using both sign and speech at the same time.

### **Americans with Disabilities Act**

A law called the Americans with Disabilities Act (ADA) was passed in 1990, requiring all public buildings to be accessible or usable by people with all disabilities. It requires flashing lights on fire alarms and in elevators. At least one phone per floor must have volume control and at least one public phone per building should be a text telephone or have an outlet next to it to plug in a portable text telephone (TDD).

### **Captioning**

In the 1970's public television provided the written English words being spoken on a TV show. It was the first time viewers could understand a spoken TV show with the sound turned off. Some people did not like seeing words across the picture of the TV screen, and that discouraged the "captioning" of more shows. Captions typically display the transcript of the audio portion of a program as it occurs, sometimes including non-speech elements such as the doorbell or telephone ringing. This allows people with a hearing loss access to television and movies. These captions are called open captions because the words are visible all the time. There is not a way to turn it off.

In the 1980's a telecaption decoder was invented. Then a TV show could be produced with hidden or closed captions that could only be revealed by a decoder. Decoders were rather expensive and not many shows were captioned.

Businesses said why caption if only a few people have decoders. People said why buy a decoder when so few shows are captioned.

In 1990, Congress passed a law that provided two benefits. First, all new televisions had to have an internal decoder chip, which was estimated to cost only 50 cents, and most television shows had to provide closed captions.

Today less than 1% of all movies are captioned in the movie theaters. Sometimes there are "open captions" as there were on TV, but again some moviegoers complain that the words bother them. For this reason, the Rear Window Captioning System was developed. It is a method for presenting, through captions, a transcript of the audio portion of a film in theatres for Deaf and hard of hearing people, but it is invisible to others. Before entering the theatre, viewers pick up a reflective plastic panel mounted on a flexible stalk. This sits in a seat cup holder or on the floor adjacent to the seat. A large LED display is mounted on a rear wall that displays caption characters in mirror images. Viewers move the panels into position (usually below the movie screen) so they can read the reflected captions and watch the movie. It is sometimes necessary to sit in a certain area of the theater to obtain the best angle for reflecting the backward text on the panel while also being able to view the movie at the same time.

### **Assistive Technology**

Assistive Technology has brought many new devices and services designed to aid people with varying degrees of hearing loss. It continues to change very rapidly. Current technologies are explained in the Assistive Technology activity on page 30-37.

## GLOSSARY

**American Sign Language (ASL)** is a bona fide language that is visual and gestural with syntax and grammar that is different from English and indigenous to the American Deaf Community. ASL is not universal. Other countries have their own form of sign language.

**Assistive Technology** is any device or service that enhances a person's ability to communicate, live more independently and perform tasks he or she might not otherwise be able to do. Examples are hearing aids, cochlear implants, sound field and FM systems, smoke alarms, doorbell and telephone lights, baby monitors, TDD, videophones, captioning, email, and text and instant messaging.

**Communication Access Realtime Translation (CART)** is the instant translation of the spoken word into English text using a stenotype machine, notebook computer and realtime software. The text appears on a computer monitor or other display. This technology is primarily used by people who are late deafened, oral deaf, hard of hearing, or have cochlear implants.

-National Court Reporters Association

**Cochlear Implant** is a small surgically implanted electronic device that can help to provide a sense of sound to a person who is profoundly deaf or severely hard of hearing. An implant does not restore normal hearing. Instead, it can give a deaf person a useful representation of sounds in the environment and help him or her to understand speech.

**Deaf Community** refers to the cultural group comprised of persons who share similar attitudes towards deafness.

**Deaf Culture** refers to the beliefs, values, patterns of behavior, language, expectations, and achievements of members of the Deaf Community that are passed on from generation to generation.

**Expressive Communication** is the way a person conveys a message to communicate.

**Fingerspelling** is a way of manually representing words and sentences from a spoken language using separate hand shapes for each letter.

**Gesture** is the movement of the body that occurs for some purpose of communication.

**Interpretation** is the re-expression in one language of a message originally delivered in another language, including the preservation of meaning across two languages, communities, and cultures.

**Language** is a system of relatively arbitrary symbols and grammatical signals that members of a community share and use to interact with each other, to communicate their ideas, emotions, and intentions, and to transmit their culture from generation to generation.

**Lipreading/Speechreading** refers to understanding what a person is saying by watching his/her lips as well his/her facial expressions. The term lipreading is used interchangeably with speechreading.

**Manual method** involves using sign language to communicate.

**Oral/aural method** involves learning to speak, listen and lipread.

**Receptive Communication** is the way a person receives and understands a message.

**Signed English** is the general term that refers to any of the artificially developed systems for signing in English word order.

**Universal Design** is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

– Ron Mace Center for Universal Design, College of Design, North Carolina State University