

ASSISTIVE TECHNOLOGY

Sample Discussion

We are going to read a story about a hearing girl and her deaf brother. Sarah relies on her hearing when she gets ready for school in the morning. As you listen to the story, try to identify tasks where her brother David needs technology to replace his hearing loss. We will think of or look at equipment that can

- make things louder
- be visual or tactile
- help people to communicate.

I have displayed some assistive technology on the table, and I am going to hand out some pictures. I want you to think about what you hear and see and try to answer the following questions:

1. What do you think it is and how does it help a person who is deaf or hear of hearing?
2. Would a hearing person use this? How?

Read the following story to the students.

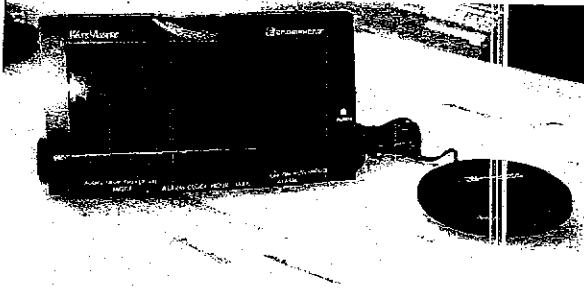
Every morning Sarah's alarm clock rings at 7:00 am. Sarah is tired this morning because the smoke alarm sounded in the middle of the night and woke her up. Reluctantly, she gets up and starts to dress. Her friend calls on the phone to remind her to bring the poster for their project. At breakfast, her mother turns on the TV to hear about today's weather. Then the doorbell rings. It's Joanna and Tommy waiting to walk to school with Sarah and her brother, David, who is deaf. When the children arrive at school, they go to their classes to listen to the teacher's morning announcements.

How would this story be different if we were telling the story about David's morning? Let's talk about how assistive technology helps David get ready for school.

How did David wake up at 7 AM?

1) ALARM CLOCK

If you were inventing an alarm clock to wake up David who could not hear an alarm, how would it work? (*flashing lights, vibrations*).



1. Point to the alarm clock on the table.

This is a vibrating alarm clock. It can go under your pillow or can be attached to your bed. It causes the bed to vibrate when it is time to wake up. Other clocks flash lights on and off to signal that it is time to wake up.

2. Would a hearing person use these? How?

A hearing person could use this just like a deaf or hard of hearing person.

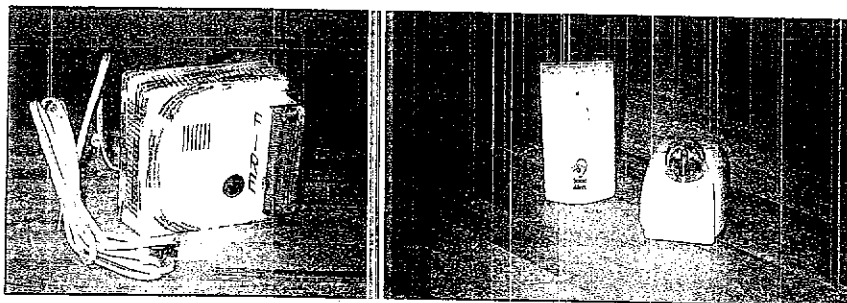
Would David have heard the smoke alarm go off in the middle of the night?

2) SMOKE ALARM, DOORBELL LIGHT, TELEPHONE LIGHT, BABY MONITOR

What would his family need as an alert if he was ever alone in the house and there was a fire? In an emergency, how would an alarm alert someone who is deaf? (*flashing lights, vibrations*) Do you think David is glad that he was able to sleep through the smoke alarm or do you think David wants to be treated the same as his sister and other hearing people?

self-reliance
Not all
alone
but even
with rest
of fan
me

⊗ How
did David
know when
the phone
rang?



⊗ What would
alert David
that someone
was at
the door?

1. Point to the smoke alarm and the doorbell.

Smoke alarms, doorbell lights, telephone lights and baby monitors work the same way as the alarm clock. Some have flashing strobe lights and many create vibrations.

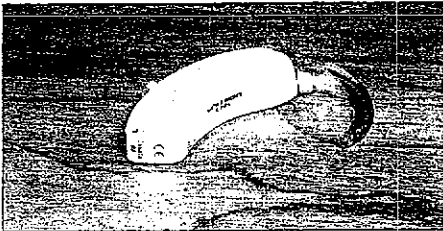
2. Would a hearing person use these? How?

Yes, these devices are designed so that everyone can use them. This is called universal design. In this activity we will look for more items that help everyone, people with and without hearing loss. What are some other examples that people rely on vibrations or flashing lights instead of sound or in addition to sound? (*cell phone—especially in a class or meeting; police, fire and ambulance lights; tow truck and other service vehicle lights*)

When the fire alarm goes off in your school, you can hear the alarm and see the flashing lights.

When David gets dressed in the morning, he might put on hearing aids or connect the external parts of a cochlear implant to assist his hearing.

3A) HEARING AIDS and 3B) COCHLEAR IMPLANTS



1. Point to the hearing aids on the table.

A hearing aid is a small electronic device that is worn in or behind the ear. It makes certain sounds louder so that people with hearing loss can listen and communicate better. It is important to remember that hearing aids do not correct hearing problems. A hearing aid allows a person to hear many sounds louder and clearer, but it also makes many sounds the person does NOT want to hear louder and clearer.

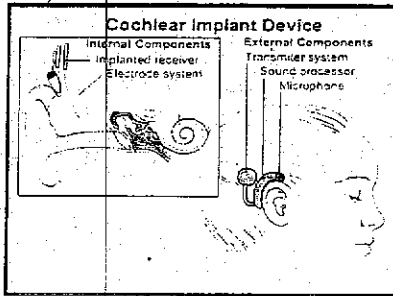
2. Would a hearing person use a hearing aid?

No, hearing aids are made specifically for a person with a hearing loss. In fact, you would never want to put an active hearing aid in your ear unless it was prescribed for you. It might damage your hearing by creating VERY loud sounds.

Doesn't
appear
like
glass

Examples
paper
loader
Mason's book

3B) COCHLEAR IMPLANT



1. Hold up picture #3B and point to Kaci Koala on the table.

A cochlear implant is a small electronic device that is surgically implanted under the skin behind the ear and can help provide a sense of sound to a person who is deaf or hard of hearing. Not all deaf and hard of hearing people are able to benefit from a cochlear implant. In addition some people choose not to have a cochlear implant.

fewoid?

Although the external parts of a cochlear implant may look similar to a hearing aid, it works very differently inside the body. Hearing aids make sounds louder so partially functioning parts of the ears may detect them. Cochlear implants send signals via the auditory nerve to the brain. The brain recognizes the signals as sound. An implant does not restore normal hearing.

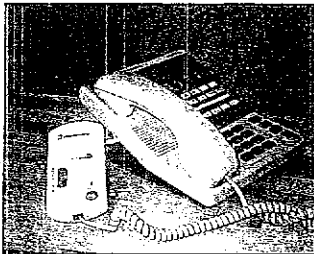
2. Would a hearing person use a cochlear implant?

A hearing person would not benefit from having a cochlear implant.

David knew when the phone rang because the phone has a light that flashes when it rings.

4) TELEPHONE WITH AMPLIFIER

But would he be able to answer the phone and hear the person on the other end? (Some people who are deaf or hard of hearing could benefit from a volume control or a special amplifier.)



1. Hold up picture #4.

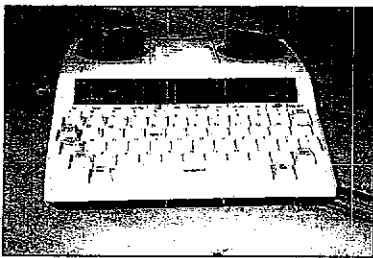
This is a device that attaches to any telephone that will make conversations louder.

2. Would a hearing person use an amplifier?

Yes. Many people with a slight hearing loss or in a loud environment like to control the volume on the phone and make it louder so they don't have to struggle to hear a caller. This makes communication over the telephone easier for many people.

5) TDD

Often people who are deaf cannot hear or understand speech on a telephone. If David couldn't hear on a telephone, even with amplification, the caller would need to use a telephone device for the deaf (TDD) or a videophone if the call was for David.



1. Point to the TDD on the table.

This is a device that enables anyone who can see to communicate by telephone. It is the Telecommunication Device for the Deaf. Its abbreviated name is TDD. As you can see, it has a keyboard and above the keys there is a screen that displays messages.

TTY

People who are deaf can be more independent and protect their privacy by making telephone calls for themselves instead of asking a hearing person to make calls for them. Wouldn't you rather phone a friend yourself than ask a parent to make the call for you? If you wanted to call a deaf person and didn't have a TDD, you could use a service called a relay operator.

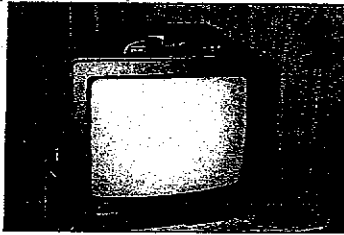
2. Would a hearing person use a TDD?

A hearing person could use a TDD to communicate with deaf friends, family and business people.

Additional Information for Presenters about TDD's

The relay system works in this way: the person with the TDD/computer types the message. That message is visible on a computer screen at a relay center. The communications assistant at the relay center contacts the person who you are calling and reads the message word for word over the telephone. The person who receives the message responds to the communications assistant who types the response on the computer. That typed message appears on the screen of the person with the TDD/computer.

6A) VIDEOPHONE



1. Hold up picture #6A.

People who use American Sign Language (ASL) communicate by connecting videophones or web cams to their computers and placing video calls to one another. Since the people having a conversation can see each other it is almost like having a conversation in person.

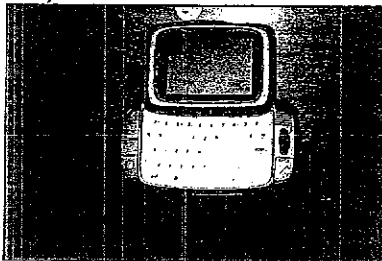
When only one of the callers knows sign language, he or she can use an ASL interpreter who works for a video relay service to interpret the phone conversations. An ASL interpreter receives videophone calls and interprets.

2. Would a hearing person use a videophone?

A hearing person could use a videophone to communicate with Deaf people. Many people use web cams to communicate with other people. Have any of you used a web cam to talk to another person? (Share experience: when, why, was it better than a phone call?)

If David had a cell phone he might get a text message reminding him to bring the poster to school.

6B) TEXT MESSAGING



Hold up picture #6b.

Today many people communicate through email and texting, but did you know that text messaging was originally designed to assist people who are deaf. You might also find it interesting that Alexander Graham Bell invented the telephone when he was trying to develop a hearing aid for his deaf wife.

When the weather report came on the TV at breakfast, how did David understand what was being said? (David probably had captions on his TV that displayed the words of the weather reporter.)

7) CAPTIONING



1. Hold up picture #7.

Sometimes captions also include non-speech elements such as music, the doorbell ringing or the dog barking. Your TV probably has closed captions as an option. Captioning allows deaf or hard of hearing people full access to television, movies, theatre and sports events.

2. Would a hearing person use captioning?

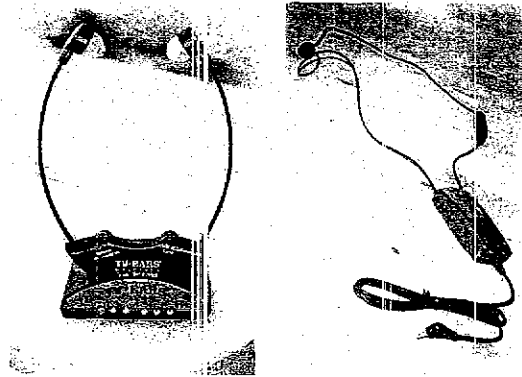
Often in a noisy environment like a restaurant or an airport, or when the actors mumble, hearing people also read the captions. You might not hear everything that is being said on TV and the captions enable you to read it instead. In addition many people who are learning English as a second language or learning to read English find that the captions help. Movies in foreign languages are often translated with captions.

Read aloud to the students.

When David arrives at school, he goes into his classroom. Perhaps he turns a switch on his hearing aid so that he can hear his teacher who is wearing a special microphone more clearly. Sometimes the teacher passes around the microphone so that he can better hear his classmates during discussions. This is called an assistive listening device. Or perhaps, he might have a sign language interpreter as you learned about (or will learn about) in the sign language activity. Maybe he even has a teacher of the Deaf and Deaf classmates who can communicate directly with each other in American Sign Language (ASL).

There are many other devices and technology that benefit a person who is deaf or hard of hearing: a hearing ear dog, assistive listening devices that can be used to increase the volume in large gatherings like school assemblies, movie theatres, and plays or when watching TV or listening to music. The Jumbotron at sports events helps both hearing and those with hearing loss to keep track of what's going on during the game.

8) ASSISTIVE LISTENING DEVICES (ALDS)



1. Hold up picture #8.

ALDs are amplifiers that bring sound directly to the ear of the listener. Sometimes there is a classroom speaker so everyone can hear.

9) HEARING-EAR DOG



1. Hold up picture # 9.

Like dog guides for people with blindness, hearing-ear dogs are trained for several months at special centers; then the owner is trained with their dog at the center for two weeks. Hearing-ear dogs wear yellow harnesses and leashes so they are readily recognizable. Working dogs are allowed to go into restaurants, stores, hospitals and many other public places where pets are not allowed.

Hearing-ear dogs are trained to alert their owners to important sounds by coming in physical contact with them. The dog might jump on the bed when an alarm goes off in the morning. It might come to its owner and lead him or her to a crying child or a doorbell or TDD that has just rung. If a smoke or fire alarm goes off, they are trained to make physical contact with their owners and then drop to the floor as a danger signal.

2. Would a hearing person use a hearing-ear dog?

No, a hearing person might have a dog as a pet. Hearing-ear dogs are working dogs. People shouldn't distract working dogs as that can endanger their users.

ASSISTIVE TECHNOLOGY

This activity is not difficult, but can be time consuming. Each group has 14 minutes to go through the presentation before they rotate to the next activity

The table will be set up beforehand with all the items and pictures displayed. Each item and picture will be numbered and have an information card to go with it to describe it and how it works

You will find a description of each item and picture on the following page. It is a good idea to familiarize yourself with the description of the technology before you do the activity, so that you can talk about it in your own words as much as possible. The information cards can be used as a help to you, but you do not have to read each one to the children. Feel free to modify the script to suit your style.

Remember, the main goal of this activity is to expose the children to the technology and give them some basic information about it. It also shows the children that a lot of the assistive technology used by the Deaf and Hard of Hearing is also used by hearing people

Enjoy.

ASSISTIVE TECHNOLOGY

This information about the different types of assistive technology is paired with the devices and the pictures for easier presentation.

CARD # 1 This is a vibrating alarm clock. It can go under your pillow or be attached to your bed. It causes the bed to vibrate when it is time to wake up. Other clocks flash lights on and off to signal that it is time to wake up.

CARD # 2 Smoke alarms, doorbell lights, telephone lights, and baby monitors work the same way as the alarm clock. Some have flashing strobe lights and many create vibrations.

CARD # 3A A hearing aid is a small electronic device that is worn in or behind the ear. It makes certain sounds louder so that people with hearing loss can listen and communicate better. It is important to remember that hearing aids do not correct hearing problems. A hearing aid allows a person to hear many sounds louder and clearer, but it also makes many sounds the person does NOT want to hear louder and clearer.

CARD # 3B A cochlear implant is a small electronic device that is surgically implanted under the behind the ear and can help provide a sense of sound to a person who is deaf or hard of hearing. Not all deaf and hard of hearing people are able to benefit from a cochlear implant. In addition some people choose not to have a cochlear implant.

Although the external parts of a cochlear implant may look similar to a hearing aid, it works very differently inside the body. Hearing aids make sounds louder so partially functioning parts of the ear may detect them. Cochlear implants send signals via the auditory nerve to the brain. The brain recognizes the signals as sound. An implant doesn't restore normal sound.

CARD #4 This is a device called a telephone amplifier that attaches to the phone and makes conversations louder.

CARD #5 This is a device that enables anyone who can see to communicate by telephone. It is the Telecommunication Device for the Deaf. Its abbreviated name is TDD.

As you can see it has a keyboard and above the keys there is a screen that displays the message.

People who are deaf can be more independent and protect their privacy by making telephone calls for themselves instead of asking a hearing person to make calls for them. Wouldn't you rather call a friend yourself than ask a parent to call for you? If you wanted to call a deaf friend and didn't have a TDD, you could use a service called a relay operator.

ARD#6A People who use American Sign Language [ASL] can communicate by connecting videophones or webcams to their computer and placing video calls to one another. Since the people having the conversation can see each other it is almost like having a conversation in person.

When only one of the callers knows sign language, he or she can use an ASL interpreter who works for a video relay service to interpret the phone conversations. An ASL interpreter receives calls and interprets.

ARD#6B Today many people communicate through email and texting, but did you know that text messaging was originally designed to assist deaf people. You might also find it interesting that Alexander Graham Bell invented the telephone when he was trying to develop hearing aids for his deaf wife.

ARD#7 Sometimes captions also include non-speech elements such as music, the doorbell ringing, or a dog barking. Your TV probably has closed captions as an option. Captioning allows deaf or hard of hearing people full access to television, movies, theatre and sports events.

ARD#8 ALDs are amplifiers that bring sound directly to the ear of the listener. Sometimes there is a classroom speaker so everyone can hear better.

ARD#9 Like dog guides for blind people, hearing-ear dogs are trained for several months at special centers; then the owner is trained with their dog at the center for 2 weeks. Hearing-ear dogs wear yellow harnesses and leashes so they are easily recognizable. Working dogs are allowed to go into restaurants, stores, hospitals and many other public places where pets are not allowed.

Hearing-ear dogs are trained to alert their owners to important sounds by coming in physical contact with them. The dog might jump on the bed when an alarm goes off in the morning. It might come to its owner and lead him to a crying child or a doorbell or a ringing TDD. If a smoke alarm goes off they are trained to make physical contact and then drop to the floor as a danger signal.

ASSISTIVE TECHNOLOGY

Sample Discussion

We are going to read a story about a hearing girl and her deaf brother. Sarah relies on her hearing when she gets ready for school in the morning. As you listen to the story, try to identify tasks where her brother David needs technology to replace his hearing loss. We will think of or look at equipment that can

- make things louder
- be visual or tactile
- help people to communicate

I have displayed some assistive technology on the table and some pictures. I want you to think about what you hear and see and answer the following questions.

1. What is it and how would it help a person who is deaf or hard of hearing?
2. Would a hearing person use this and how?

Read Story Part 1

Every morning Sarah's alarm-clock rings at 7:00 am. Sarah is tired this morning because the smoke alarm sounded in the middle of the night and woke her up. Reluctantly, she gets up and starts to dress. Her friend calls on the phone to remind her to bring the poster for their project. At breakfast, her mother turns on the TV to hear about today's weather. Then the doorbell rings. It's Joanna and Tommy waiting to walk to school with Sarah and her brother, David, who is deaf. When the children arrive at school, they go to their classes to listen to the teacher's morning announcements.

How would this story be different if we were telling the story about David's morning? Let's talk about how assistive technology helps David get ready for school.

Question: How did David wake up at 7 AM?

Ask a child to point to the correct item. alarm clock #1
Talk about item #1. [Card # 1]

Question: Would David have heard the smoke alarm go off in the middle of the night? What would his family need as an alert if he was ever alone in the house and there was a fire?

Question: How did David know when the telephone rang?

Question: What would alert David that someone was at door in the morning?

Ask a child to identify the correct items or picture after each question. doorbell, telephone light, smoke alarm #2
Talk about items/picture # 2. [Card # 2]

Question: Do you think David would be happy to sleep through the fire alarm or do you think he wants to be treated the same as hearing people?

Would a hearing person use these? How?

Yes, these devices are designed so that everyone can use them.

This is called universal design. What are some other examples that people rely on vibrations and flashing lights instead of sound or in addition to sound? [cell phones, fire and ambulance lights, tow truck and other service vehicle lights, fire alarms in your school.]

Read: When David gets dressed in the morning, he might put on hearing aids or connect the external parts of a cochlear implant to assist his hearing.

Ask a child to identify the hearing aids. #3
Talk about items # 3. [Card #3]

Would a hearing person use a hearing aid?

No, hearing aids are made specifically for a person with a hearing loss. In fact, you would never want to put an active hearing aid in your ear unless it was prescribed for you. It might damage your hearing by creating VERY loud sounds.

Ask a child to identify the picture of the cochlear implant and Kaci Koala. **cochlear implant # 3B**

Talk about item and picture # 3B. [Card # 3B]

Would a hearing person use a cochlear implant?

A hearing person would not benefit from having a cochlear implant.

Question: David knew when the telephone rang because the phone has a light that flashes when it rings. But would he be able to answer the phone and hear the person on the other end? Can you find a device that would help a hard of hearing person hear better on the telephone?

Ask a child to identify the picture of the telephone with a volume control or special amplifier. **telephone amplifier #4**
Talk about picture # 4. [Card# 4]

Would a hearing person use an amplifier?

Yes. Many people with a slight hearing loss or in a loud environment like to control the volume on the phone and make it louder so they don't have to struggle to hear a caller. This makes communication over the telephone easier for many people.

Read: Often people who are deaf cannot hear or understand speech on a telephone. If David couldn't hear on a telephone even with amplification, the caller would need to use a telephone device for the deaf {TDD} or a videophone.

Ask a child to identify the TDD.

Talk about item # 5 Telephone Device for the Deaf. [Card # 5]

FYI Additional Information for presenters about TDD

The relay system works in this way: the person with the TDD/computer types the message. The message is visible on a computer screen at a relay center. The communications assistant at the relay center contacts the person who you are calling and reads the message word for word over the telephone. The person who receives the message responds to the communication assistant who types the response on the computer. The typed message appears on the screen of the person with the TDD/computer.

Would a hearing person use a TDD?

A hearing person could use a TDD to communicate with deaf people.

Read: TDDs are not as popular to use as a means of communication as they once were. More Deaf people now choose to use videophones.

Ask a child to identify the picture of a videophone.
Talk about picture # 6A Videophone. [Card # 6A]

Would a hearing person use a videophone?

A hearing person could use a videophone to communicate with Deaf people. Many people use web cams to communicate with other people. Have any of you ever used a web cam to talk to a friend?

Read: If David had a cell phone he might get a text message reminding him to bring the poster to school.

Ask a child to identify the picture of the text messaging.
Talk about picture # 6B Text messaging. [Card # 6B]

Would a hearing person use text messaging?

People use it all the time.

Question: When the weather report came on the TV at breakfast, how did David understand what was being said?

Ask a child to identify the picture that would help David know what is being said on the TV.

Talk about picture # 7 closed captioning. [Card #7]

Would a hearing person use captioning?

Often in a noisy environment hearing people also read the captions. Also people who are learning English might find that captions help. Movies in foreign languages are often translated with captions.

When David arrives at school, he goes into his classroom. Perhaps he turns a switch on his hearing aid so that he can hear his teacher who is wearing a special microphone more clearly. Sometimes the teacher passes around the microphone so that he can better hear his classmates during discussions. This is called an assistive listening device. Or perhaps, he might have a sign language interpreter as you learned about (or will learn about) in the sign language activity. Maybe he even has a teacher of the Deaf and Deaf classmates who can communicate directly with each other in American Sign Language (ASL).

There are many other devices that benefit a person who is deaf or hard of hearing. Assistive listening devices can be used in classrooms to increase the volume to facilitate during instruction and discussions. They also help at school assemblies, movie theatres, plays, listening to music or watching TV.

Would a hearing person use assistive listening devices?

Jumbotron at sports events helps both hearing and those with hearing loss to keep track of what's going on during the game.

Ask a child to find the picture of devices that would help a person with hearing loss in a classroom.

Talk about picture # 8 Assistive listening devices. [Card # 8]

Question: What could help a deaf person and also be a companion?

Ask a child to find the picture of the hearing ear dog.

Talk about picture # 9. [Card # 9]

Would a hearing person use a hearing ear dog?

No, a hearing person might have a dog as a pet. Hearing ear dogs are working dogs. People shouldn't distract working dogs as that can endanger their users.