

GROW YOUR PALS PROGRAM GUIDE



THE NATIONAL FFA MENTORING PROGRAM

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LESSON 3.25

Hear Today, AND Tomorrow

Unit:
MISCELLANEOUS

PRECEPTS

- A. Action
 - A1. Work independently and in groups to get things done
- E. Awareness
 - E1. Address issues important to the community



Lesson Type:
Large Group

NATIONAL STANDARDS

None available

STUDENT LEARNING OBJECTIVES

As a result of this lesson, the student will ...

- Define the term *auditory*.
- Detail how the human ear works.
- Identify ways to protect our ears.





TIME

Instruction time for this lesson: **50 minutes.**



RESOURCES

Auditory | Define Auditory at Dictionary.com. (n.d.). Dictionary.com | Find the Meanings and Definitions of Words at Dictionary.com. Retrieved April 11, 2010, from <http://dictionary.reference.com/browse/auditory>.

Neuroscience for Kids - Hearing Experiments. (n.d.). UW Faculty Web Server. Retrieved April 11, 2010, from <http://faculty.washington.edu/chudler/chhearing.html>.

The Ear (Human Anatomy): Picture, Function, Definition, Conditions, and More. (n.d.). WebMD - Better information. Better health. Retrieved April 11, 2010, from <http://www.webmd.com/brain/picture-of-the-ear>.

National FFA Organization. (2003). LifeKnowledge Precepts and Signs of Success.



TOOLS, EQUIPMENT AND SUPPLIES

- ✓ **Five yogurt/cottage cheese containers or small juice bottles**
- ✓ **Water, marbles, sand, pennies, cotton, cereal**
(enough to fill each container above)
- ✓ **Construction paper for decorating each bottle**
- ✓ **Pictures of ears:** Human, dog, cat, goat, horse, elephant, chicken, donkey, elf ear, etc.
- ✓ **Magazines, paper, scissors, glue** – per student or group

Supplies for the ear activity:

- ✓ **Funnel**
- ✓ **Drum/picture of a drum**
- ✓ **Sea shell**
- ✓ **Brain model or a picture of a brain with shoestrings attached**
- ✓ **Thawed freezer pop**
- ✓ **Small table with chairs arranged around it in a circular shape**
- ✓ **PALS3.25.LG.AS.A** –Inner ear diagram to be drawn on a writing surface or projected

KEY TERMS



The following term is presented in this lesson and appears in ***bold italics***:

Auditory



CONTENT OUTLINE

Objective 1: | Define the term *auditory*

- I. Ear
- II. ***Auditory*** - pertaining to hearing, to the sense of hearing or to the organs of hearing

Objective 2: | Detail how the human ear works

- I. Sound funnels through the outer ear
- II. To the canal and ending at the eardrum
- III. Sound vibrates into the cochlea
- IV. Then turns into nerve impulses in the brain
- V. Fluid-filled canals attach to nerves inside the ear

Objective 3: | Suggest ways to protect ears from such noises

- I. Sounds that are loud
- II. Earplugs

INTEREST APPROACH

Prior to class, have pictures posted at the front of the room showing ears of various animals in a circle. (Human, dog, cat, goat, horse, elephant, chicken, donkey, elf ear, etc.) Have the labeled diagram of the human ear in the very center of the circle.

Prior to the lesson, create five “sound shakers.” Fill plastic yogurt/cottage cheese containers or small juice bottles one-fourth to one-half full with one of the following items:

- 1st Container: Water/liquid
- 2nd Container: Marbles
- 3rd Container: Sand
- 4th Container: Pennies
- 5th Container: Cereal wrapped fully in cotton (this is to represent difficulty hearing the item, therefore the students should have difficulties identifying the object within

Secure lids on each container with tape. Decorate each container to hide the contents of each container.



Good morning/afternoon class. It is so nice to be with you today. We have many exciting pieces of information to discuss and do today. To get things started, when I say CIRCLE walk to the chairs at the back of the room and wait patiently and quietly for me without disturbing anything. This will be where our fun begins. What questions do you have?

CIRCLE

You should stand in the middle of a circle of chairs with a small table.



As you can see there are five ‘beautiful bottles’ here on the table. Each bottle contains a ‘something surprise’! When I shake a beautiful bottle, together we will make guesses as to what the ‘something surprise’ may be. It is very important that we raise our hands when we want to guess what a ‘something surprise’ is. To make sure we all know what we are going to do, let’s practice by answering some simple questions. Here is your practice question; when I say SOMETHING SURPRISE, quietly raise your hands to answer the question. “What is my name?”

SOMETHING SURPRISE

Receive answers from students and enforce that all students are following the rules while raising their hands. Commend students for their proper behavior.

Show students #1 bottle-shake to allow objects inside to make a sound (water) ‘beautiful bottle’.

SOMETHING SURPRISE

Receive answers from students. Responses can vary from water to juice to milk. Any response similar to liquid will work. Congratulate students for their responses; encourage them to think harder, guide answers to the correct answer, etc. Open ‘beautiful bottle’ to reveal contents inside; show students.

Show students #2 bottle-shake to allow objects inside to make a sound (marbles) ‘beautiful bottle’.

SOMETHING SURPRISE

Receive answers from students. Responses can vary from marbles to rocks to balls. Congratulate students for their responses; encourage them to think harder, guide answers to the correct answer, etc. Open 'beautiful bottle' to reveal contents inside; show students. Show students #3 bottle-shake to allow objects inside to make a sound (sand) 'beautiful bottle'.

SOMETHING SURPRISE

Receive answers from students. Responses can vary from sand to dirt. Congratulate students for their responses; encourage them to think harder, guide answers to the correct answer, etc. Open 'beautiful bottle' to reveal contents inside; show students.

Show students #4 bottle-shake to allow objects inside to make a sound (pennies) 'beautiful bottle'.

SOMETHING SURPRISE

Receive answers from students. Responses can vary from pennies to coins to quarters to change. Congratulate students for their responses; encourage them to think harder, guide answers to the correct answer, etc. Open 'beautiful bottle' to reveal contents inside; show students.



All the answers were great! Thank you so much for thinking and paying such close attention. How were you able to guess the correct answer each time?

Possible answers: smart, have heard them before, etc. Guide students to hearing and the use of the ear.



Absolutely, the use of the ear and being able to hear allows us to be able to do so many different things in our lives. Let's listen to see what is inside the last 'beautiful bottle'.

Show students #5 bottle-shake to allow objects inside to make a sound (cereal wrapped in cotton) 'beautiful bottle'.

SOMETHING SURPRISE

Receive answers from students. Responses can vary from nothing to an empty bottle to air. Congratulate students for their responses; encourage them to think harder, guide answers to the correct answer, etc. (Most likely students will be unable to determine the correct answer.) Open 'beautiful bottle' to reveal contents inside; show students.



We were unable to hear the sound inside the ‘beautiful bottle’ because of the cotton wrapped around the cereal. This shows you what it would be like to lose your hearing. Without the sense of hearing, we can possibly hurt us or other people. It is very important to always protect our ears when we are around loud noises, to keep from losing the sense of being able to hear. Today we will discuss the importance of the ear, how our ears function and ways to maintain proper ear health. Throughout this lesson, we will discuss information that is very important to our ear health. We only receive one set of ears and it is very important that we care for them the best we can. Please remember that we all are expected to be on our best behavior throughout class today. I am very excited about this class today and hope you are as well.



To let the excitement begin, we need to have one small change happen. When I say DESK, quickly and quietly walk to your assigned seat so we can continue learning about our ear. What questions do you have?

DESK

SUMMARY OF CONTENT AND TEACHING STRATEGIES

OBJECTIVE 1. | Define the term *auditory*.



- I. *Ear*
- II. ***Auditory-*** *pertaining to hearing, to the sense of hearing or to the organs of hearing*



Thank you for moving so quietly to your seats. Please join in, while we locate several parts of the body. Place your finger as I call out each part. Point to your head...point to your eyes; point to your nose; point to your mouth; point to your EARS! What do our ears do?

Answers: hear, listen, etc.



The ear is an organ to let humans and animals hear. What does the word ***auditory*** mean? The word ***auditory*** pertains to hearing, the sense of hearing or to the organs of hearing.

Now that we have been reminded of the location of several parts of our body and have learned the definition of the word ***auditory***, let's take another step toward learning about our ears. We all use our ears on a daily basis to hear noises all around us. It is very important that we understand how exactly our ears function.

OBJECTIVE 2. | Detail how the human ear works.



- I. Sound funnels through the outer ear
- II. To the canal and ending at the eardrum
- III. Sound vibrates into the cochlea
- IV. Then turns into nerve impulses in the brain
- V. Fluid-filled canals attach to nerves inside the ear

Prior to class, have pictures posted at the front of the room showing ears of various animals in a circle. (Human, dog, cat, goat, horse, elephant, chicken, donkey, elf ear, etc.) Have the labeled diagram of the human ear in the very center of the circle.



No matter how we look at these pictures, we can find one thing in common. What could we guess is in common with the pictures displayed on the board?

Select a students with his/her hand raised. The responses received should be similar to “ear.”



That is correct! We all have an attachment on the side of our head that functions as our ear. Our ear performs steps that allow us to hear the noises that are made in the world around us. To better understand those steps, let’s work together through a great activity to learn what is happening inside the ear when noises are made.

Have PALS 3.25.LG.AS.A ready to project or copied onto a writing surface so you can reference it as students learn the parts of the ear.



Who are five volunteers to assist with the activity?

Choose five students.



Let’s give our volunteers a round of applause!

The five students selected should perform the following activities. This activity is to follow that of an e-Moment. Volunteers should pretend to be doing each of the five activities listed below:

- Holding a funnel with the word “sound” placed inside (Step #1)
- Softly beating a drum (Step #2)
- Shaking a sea shell (Step #3)
- Holding a brain model or picture of a brain with shoestrings attached (Step #4)
- Holding a thawed freezer-pop (Step #5)

While each of the five volunteers are performing their task, begin the following. Each task the volunteers perform should represent the five steps of the hearing process. This activity will help students visualize what is occurring inside the human ear.



As I say each step aloud, say aloud which of your classmates is representing each step.

Step #1: Sound funnels through the outer ear. Everyone say, “Funnel.” Sound enters the outer ear in a funneling manner, much like when we pour liquids through a funnel.

Step #2: To the canal and ending at the eardrum. Everyone say, “Eardrum.” The sound goes through the ear canal and stops at the eardrum.

Step #3: Sound vibrates into the cochlea (*point to cochlea on diagram*). Everyone say, “cochlea.” The sound then vibrates against the cochlea, the organ that closely resembles a shell.

Step #4: Then turns into nerve impulses in the brain. Everyone say, “brain.” The sound is then sent into the brain by nerve impulses.

Step #5: Fluid-filled canals attach to nerves inside the ear. Everyone say, “Attach to nerves.”

The last and final step causes fluid-filled canals to attach to nerves inside the ear. These combined steps allow us to hear the various noises that are made all day around us.

Let’s give our great volunteers another round of applause as they return to their seats. It takes great courage to step up to the front of the classroom, and these students did an amazing job showing the steps involved in hearing. Let’s do a quick review. (*Holding the funnel.*) Sound (*blank*) through the outer ear? *Students should answer, “funnels.”* (*Holding the drum.*) Then sound goes through the ear canal and stops at the what? *Students should answer, “eardrum.”* (*Holding the sea shell*) Sound then vibrates against the? *Students should answer, “cochlea.”* (*Holding the brain.*) Where does the sound go next? *Students should answer, “brain.”* (*Holding the thawed freezer pop.*) What do the fluid-filled canals do inside the ear? *Students should respond, “attach to nerves.”*

If students have problems, it may be necessary to show demonstration once more.



If any of these steps do not happen, we will not be able to hear in the same manner that we do today. It is very important that we work hard to protect our hearing each day.

OBJECTIVE 3. | Identify ways to protect your ears.



- I. *Sounds that are loud*
- II. *Earplugs*

Have magazines, scissors, glue, etc. out and prepared for this portion of the lesson.



In just a moment we will receive some supplies that will help us with our next activity. Please touch them only after you are asked to. Paying attention to directions is very important to your ear safety. To be able to protect our ears from damage, we first must know what to avoid. Think for a moment, what are three examples of loud noises you hear each day?

Call on volunteers to share their examples with the class. Answers should vary: radio, TV, airplane, truck, etc.



Those are all very good ideas. In a moment we will create a collage of pictures showing loud noises as they happen. When I say, EARDRUM, find pictures in the magazines provided and cut out five pictures, how many? *Five* ...that show a possible loud noise. The pictures should then be pasted onto the paper on your desk. Five minutes will be provided to complete this task. What questions do you have?

EARDRUM

Distribute the supplies and assist students as needed.

Give two minute, one-minute, 30-second warnings.

Select three students to showcase their colleagues.



All collages look great! All pictures that were selected truly show loud noises. Imagine how this room would sound if all the pictures in here came to 'real-life'. It would be so incredibly loud. What could we do to keep from hearing all these noises?

Wait for responses. Possible answers: walk outside, cover our ears, etc.



Those are all very good choices. Yet, there is one thing we can do to be able to enjoy things in life while protecting our precious ears. We can wear earplugs. Earplugs work to block out as much of the noise as possible, to protect our ears. I encourage all of you to try to avoid as many loud noises as possible, but to always wear earplugs as a back-up plan. Just like the sounds we heard in the first four ‘beautiful bottles’, our ears can begin to have difficulties working and we begin to only hear sounds similar to those made by ‘beautiful bottle’ #5.



REVIEW / SUMMARY

Let’s recap all the great things we “heard” today about our ears. After hearing secret sounds from our beautiful bottles, we first learned that the ear is an organ to let humans and animals hear. We also discovered that **auditory** is a word pertaining to hearing, the sense of hearing or to the organs of hearing. We then moved onto understanding the steps of the hearing process when our fabulous five volunteers re-enacted the functions of the ear. We then discovered methods to help protect our ears. Most importantly we protect our ears by wearing earplugs. Now that we have completed this amazing class, we now know the importance of our ears and how we can protect our ears. Thank you all so much for paying attention and staying involved in the lesson. Please continue to remember to take care of your ears, and always wear earplugs when you are around noises that may be loud. Have a great day.

APPLICATION



Small Group Idea

Create a model of the ear, showing parts involved in hearing.



One-on-One Idea

Watch the YouTube video ‘How Ear Works’.



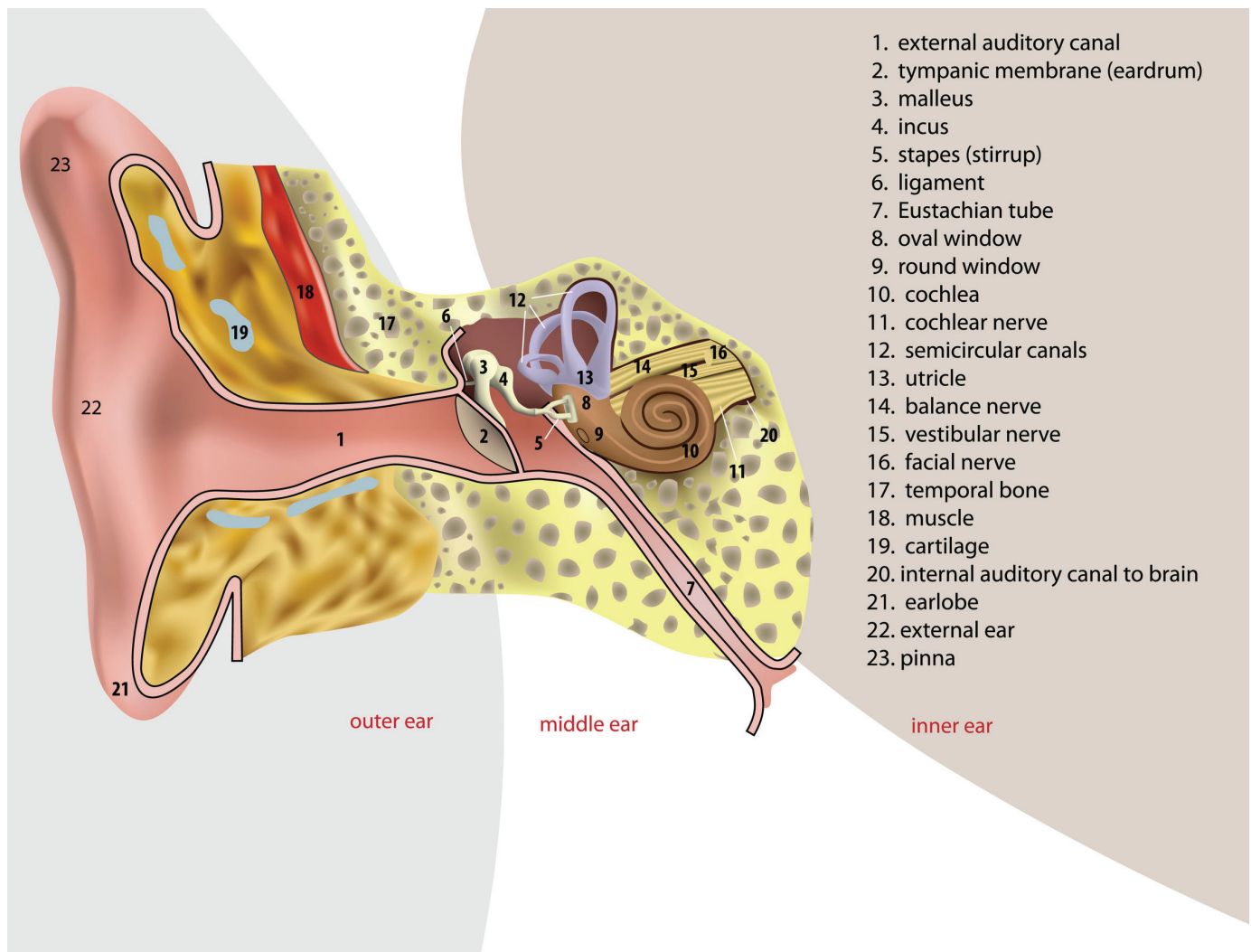
PALS3.25.LG.ASSESS.A | EVALUATION ANSWER KEY

1. False
2. False
3. True
4. False
5. False

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Inner Ear Diagram

(To be projected or drawn on a writing surface.)



PALS3.25.LG.ASSESS.A

Name: _____

Directions: Please circle “A” for True or “B” for False

- A - B 1. Always wear headphones to prevent ear damage, when loud noises may occur.
- A - B 2. The brain is not included in the steps of hearing.
- A - B 3. The word auditory can refer to the organs of hearing.
- A - B 4. Sounds vibrate in the ear canal.
- A - B 5. Today in class, the thawed freezer pops, represented the eardrum.