

# Pre-Test

- Why is it important to protect your hearing?
- What is noise pollution?
- Noise is measured in what?
- List 6 strategies to protect your hearing.

# Essential Standard

- 6.PCH.1 Understand wellness, disease prevention, and recognition of symptoms.

# Clarifying Objectives

- 6.PCH.1.6 Summarize protective measures for ears and hearing

# Statement of Objectives:

- *By the end of this lesson, you will be able to define noise pollution and be able to identify common causes of hearing loss.*

# The New York Times

**Childhood:**

## **Hearing Loss Grows Among Teenagers**

By RONI CARYN RABIN

Published: August 23, 2010

One in five teenagers suffer from at least slight hearing loss, a significant rise from a decade ago, when the rate was only one in seven.

The new study, published Wednesday in The Journal of the American Medical Association, analyzed data on about 1,771 youngsters aged 12 to 19 who participated in the National Health and Nutrition Examination Survey, and compared the prevalence of hearing loss with that of youngsters who took part in the survey ten years ago.

The percentage with at least slight hearing loss increased by 30 percent, to 19.5 percent from 14.9 percent in the earlier study. For most the hearing loss is slight enough they may not even notice.

The number with greater hearing loss — called mild hearing loss — has also increased, from 1 in 30 teenagers a decade ago to 1 in 20 teens today, the study found. With mild hearing loss, one might not be able to hear a person whispering in one's ear.

Researchers could not explain why hearing loss had become more prevalent, and did not find a significant association with exposure to loud noise. But youngsters often say they are not being exposed to loud noise because they are simply unaware they are listening to music at dangerously high levels, said the paper's lead author, Dr. Josef Shargorodsky, of the Channing Laboratory at Brigham and Women's Hospital.

# Ask these questions:

- 1. If the rate of hearing loss is one in five teens, how many in this class are likely to experience it?*
- 2. What do you think might be the cause of hearing loss in young people?*
- 3. What can kids do to prevent it?*

# Review:

- Have students name the five senses.
- Remind the students that our five senses are the gateway to our brains.
- We experience the world around us through our five senses: one of those is our sense of hearing.
- Have students fill out the How Well Do You Hear? handout (Appendix 1).

# How Well Do You Hear?



1) Do you ask people to repeat what they have said?

Yes

No

2) Can you tell one kind of sound from another?

Yes

No

3) Do others tell you to turn down the volume on the TV or radio?

Yes

No

4) Have you been told you talk too loudly?

Yes

No


5) Do you have trouble hearing people talk to you in noisy places like a lunchroom?

Yes

No

If you answered "yes" to 3 or more questions, you may have a hearing problem. Ask your parents to have your hearing checked by a professional.



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DISCOVERY EDUCATION:  
HEARING (CLIP AVOIDANCE  
OF LOUD MUSIC)

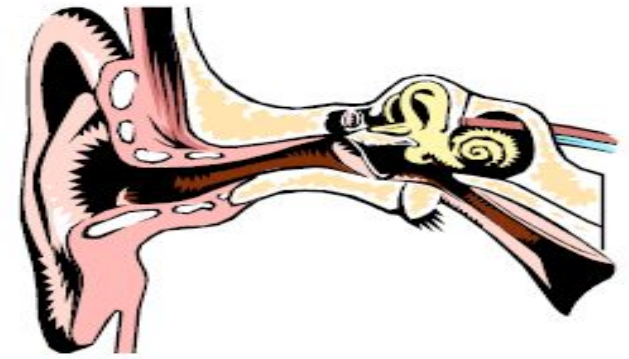
# Teacher Input:

- define “noise pollution”
  - sounds that cause harm/loss to one’s hearing.
- Noise is measured by decibels.
- Loud noises have a higher number of decibels, softer noises fewer.
- Put up overhead of Noise Levels by Daily Activity (Appendix 2).

# Noise Levels by Daily Activity

Source of Noise	Sound level (dB)
Firearms	140 to 170
Jet engines	140
Rock concerts	90 to 130
Amplified car sound systems	140 (at full volume)
Portable stereos (e.g., MP3 players)	115 (at full volume)
Power mowers	105
Subway trains	100
Video arcades	100
Electric razors	85
Crowded school buses	85
School recesses or assemblies	85

(A noise level of 85dB can damage hearing and cause hearing loss over time.)



- Sound waves in the air are “caught” by the outer ear, travel through the ear canal to the inner ear, and vibrate against the eardrum.
- *The eardrum is a sensitive membrane, or thin piece of skin. Loud noises can damage the eardrum. Some loud noises cause pain, but...DAMAGE CAN BE DONE TO THE INNER EAR EVEN BEFORE SOMEONE FEELS PAIN.*
- A ringing or temporary loss in hearing is a sign that noise is too loud for that individual.

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# What's Hearing Loss Article

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## To protect themselves from hearing loss, students can:

- Turn down the volume on radios and other sound sources especially in closed places like cars.
- Sit farther away from speakers at concerts.
- Wear ear plugs when mowing with a loud mower.
- Cover ears during cold and windy weather.

# Guided Practice:

- Divide students into 4 groups.
- Give each group a worksheet with the following titles: Noise at Work, Noise from Hobbies, Noise from Music, and Noise from Motorized Tools (Appendix 3a, b, c, d).
- Ask each group to come up with situations that could harm one's hearing by participating in these everyday activities.
- Have each group pick a recorder to write down their results and a presenter to share those results with the class.



# Noise From Hobbies



# Noise From Motorized Tools

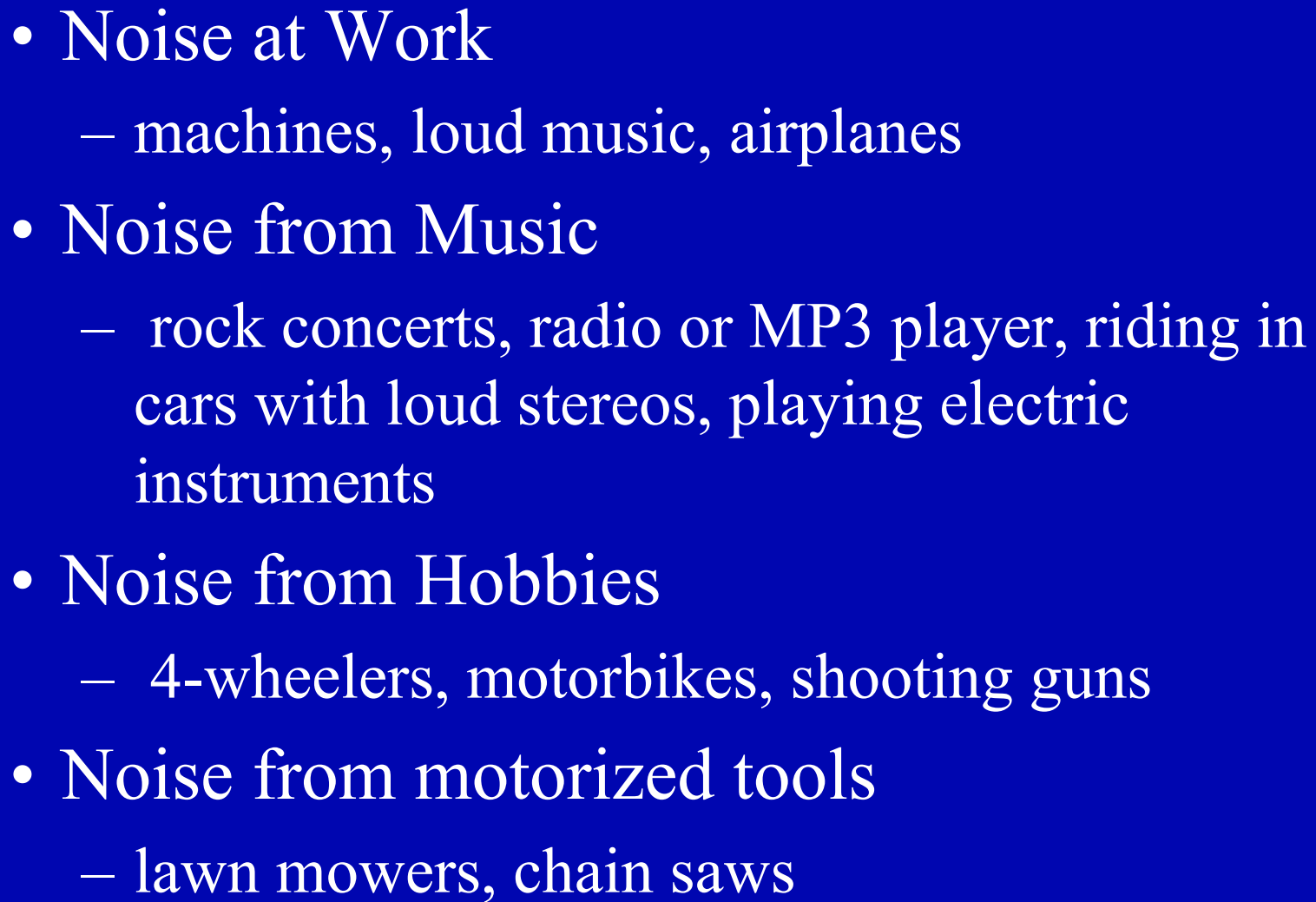


# Noise From Music



# Noise From Work



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- Noise at Work
    - machines, loud music, airplanes
  - Noise from Music
    - rock concerts, radio or MP3 player, riding in cars with loud stereos, playing electric instruments
  - Noise from Hobbies
    - 4-wheelers, motorbikes, shooting guns
  - Noise from motorized tools
    - lawn mowers, chain saws

# Independent Practice:

- Have students make a poster – they can choose to make one with either title:
- “Clean Up Noise Pollution” or “ Save Your Hearing”

# United Streaming

Health  
Investigations  
with Dr.  
Know:  
Hearing

- **Video Describing the Process of Hearing and How it Works | [MED-EL \(you tube\)](#)**

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# Huge Jump in Teen Hearing Loss

## Post Test

- Why is it important to protect your hearing?
- What is noise pollution?
- Noise is measured in what?
- List 6 strategies to protect your hearing.

# Closure:

- *With our senses, and in particular our hearing, we are better able to communicate and stay safe. By reducing noise pollution, we are protecting our sense of hearing for the future.*

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