STATE OF ILLINOIS

Specific curriculum area standards can be found at the Illinois State Board of Education website, located at the above address. Links to the specific standards are found under the current curriculum frameworks with the PDFs specific goals within each educational category located on the page. The benchmark interpretations are those of the Dangerous Decibels® program and do not represent official state board of education interpretation or review.

THE DANGEROUS DECIBELS PROGRAM is designed to reduce the incidence of noise induced hearing loss and tinnitus by changing knowledge, attitudes, and behaviors about sound exposures. Common underlying educational messages:

1. What are the sources of dangerous sounds
2. What are the consequences of dangerous sounds
3. How do I protect myself from dangerous sounds.

RATIONALE:
The Centers for Disease Control Division of Adolescent and School Health (DASH) recognizes noise induced hearing loss as a health risk for young people. [Link to CDC webpage]

The U.S. national health initiative; Healthy People 2020 has indicated three related health goals for the prevention of noise induced hearing loss in youth; [Link to Healthy People 2020 webpage]

1. **ENT-VSL-6**: Increase the use of hearing protection devices
   a. **ENT-VSL-6.2**: Adolescents aged 12 to 19 years who have ever used hearing protection devices (earplugs, earmuffs) when exposed to loud sounds or noise.

2. **ENT-VSL-7**: Reduce the proportion of adolescents who have elevated hearing thresholds or audiometric notches, in high frequencies (3, 4, or 6 kHz) in both ears, signifying noise-induced hearing loss.

3. **ECBP-3**: Increase the proportion of elementary, middle, and senior high schools that have health education goals or objects that address the knowledge and skills articulated in the National Health Education Standards (high school, middle, elementary).
   a. **ECBP-3.1**: Comprehending Concepts related to health promotion and disease prevention (knowledge)
   b. **ECBP-3.2**: Accessing valid information and health promoting products and services (skills)
   c. **ECBP-3.3**: Advocating for personal, family, and community health (skills)
   d. **ECBP-3.5**: Practicing health-enhancing behaviors and reducing health risks (skills)
   e. **ECBP-3.6**: Using goal-setting and decision-making skills to enhance health (skills)
   f. **ECBP-3.7**: Using interpersonal communication skills to enhance health (skills)
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4. **ECBP-4:** Increase the proportion of elementary, middle, and senior high schools that provide school health education to promote personal health and wellness in the following areas: hand washing or hand hygiene; oral health; growth and development; sun safety and skin cancer prevention; benefits of rest and sleep; ways to prevent vision and hearing loss; and the importance of health screenings and checkups.
   a. **ECBP-4.6:** Ways to prevent vision and hearing loss

**DANGEROUS DECIBELS (DD) PROGRAM CONTENT:**

**What is Sound?**

**DD Educational Objectives:** Students will know that:

1. Sound is a result of vibrations
2. Sound vibrations are called sound waves
3. You cannot have sound without vibrations
4. The energy in sound is what can cause damage to our ears

**Illinois Educational Benchmarks:**

**A. Science- Kindergarten**
   - K-PS2-1: Motion and Stability: Forces and Interactions- Students will plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object
     - PS2.A: Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it
     - PS2.B: When objects touch or collide, they push on one another and can change motion
     - PS3.C: A bigger push or pull makes things speed up or slow down more quickly

**B. Science- First Grade**
   - 1-PS4-1: Waves and their applications- Students will plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate
     - PS4.A: Sound can make matter vibrate, and vibrating matter can make sound

**C. Science- Third Grade**
   - 3-PS2-1: Motion and Stability: Forces and Interactions
     - PS2.B: Objects in contact exert forces on each other

**D. Science- Fourth Grade**
   - 4-PS3-2: Energy
     - PS3.A: Energy can be moved from place to place by moving objects or through sound, light, or electric currents
     - PS3.B: Energy is present whenever there are moving objects, sound, light, or heat. When objects collide, energy can be transferred from one object to another, thereby changing their motion.
   - 4-PS4-1: Waves and their applications
     - PS4.A: Waves of the same type can differ in amplitude

**E. Science- Middle School**
   - MS-PS4-1: Waves and their applications
     - PS4.A: A simple wave has a repeating pattern with an amplitude
   - MS-PS4-2: Waves and their applications
     - PS4.A: A sound wave needs a medium through which it is transmitted

**F. Science- High School**
How Do We Hear?

**DD Educational Objective:**
Students will have a general understanding of how sound waves and vibrations travel through the parts of the ear to enable hearing

**Illinois Educational Benchmarks:**

A. **Science- Kindergarten**
   - K-PS2-1: Motion and Stability: Forces and Interactions- Students will plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object
     - PS2.A: Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it
     - PS2.B: When objects touch or collide, they push on one another and can change motion
     - PS3.C: A bigger push or pull makes things speed up or slow down more quickly

B. **Science- First Grade**
   - 1-PS4-1: Waves and their applications- Students will plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate
     - PS4.A: Sound can make matter vibrate, and vibrating matter can make sound

C. **Science- Third Grade**
   - 3-PS2-1: Motion and Stability: Forces and Interactions
     - PS2.B: Objects in contact exert forces on each other

D. **Science- Fourth Grade**
   - 4-PS3-2: Energy
     - PS3.A: Energy can be moved from place to place by moving objects or through sound, light, or electric currents
     - PS3.B: Energy is present whenever there are moving objects, sound, light, or heat. When objects collide, energy can be transferred from one object to another, thereby changing their motion.
   - 4-PS4-1: Waves and their applications
     - PS4.A: Waves of the same type can differ in amplitude

E. **Science- Middle School**
   - MS-PS4-1: Waves and their applications
     - PS4.A: A simple wave has a repeating pattern with an amplitude
   - MS-PS4-2: Waves and their applications
     - PS4.A: A sound wave needs a medium through which it is transmitted

F. **Science- High School**
   - HS-PS4-1: Waves and their applications
     - PS4.A: The wavelength and frequency of a wave are related to one another by the speed of travel of wave, which depends on the type of wave and the medium through which it is passing

G. **State Goal 23 - Understand Human body systems and factors that influence growth and development**
How Do We Damage Our Hearing?

**DD Educational Objective:**
Students will know how loud sounds create strong vibrations that can permanently damage hair cells in the cochlea.

**Illinois Educational Benchmarks:**
A. State Goal 22: Understand principles of health promotion and prevention of treatment of illness and injury.
   - Early Elementary
     - 22.A.1c: Identify dangerous situations and safety methods to reduce risks
     - 22.C.1: Identify sources and causes of environmental health risks (e.g. noise)
   - Late Elementary
     - 22.A.2c: Describe and compare health and safety methods that reduce the risks associated with dangerous situations
   - Middle School
     - 22.A.3a: Identify and describe ways to reduce health risks common to adolescents
     - 22.A.3c: Explain routine safety precautions in practical situations
   - Early High School
     - 22.A.4c: Demonstrate basic procedures in injury prevention and emergency care that can be used in the home, workplace, and community

What’s that Sound?

**DD Educational Objectives:**
1. Students will understand one of the consequences of being exposed to dangerous sound levels.
2. Students will understand what it is like to try to identify sounds with a high frequency hearing loss.

**Illinois Educational Benchmarks:**
   - Early Elementary
     - 22.A.1c: Identify dangerous situations and safety methods to reduce risks
     - 22.C.1: Identify sources and causes of environmental health risks (e.g. noise)
Late Elementary  
  o 22.A.2a: Describe benefits of early detection and treatment  
  o 22.A.2c: Describe and compare health and safety methods that reduce the risks associated with dangerous situations  

Middle School  
  o 22.A.3a: Identify and describe ways to reduce health risks common to adolescents  
  o 22.A.3b: Identify how positive health practices and relevant health care can help reduce health risks  
  o 22.A.3c: Explain routine safety precautions in practical situations  

Early High School  
  o 22.A.4c: Demonstrate basic procedures in injury prevention and emergency care that can be used in the home, workplace, and community  

B. State Goal 23: Understand human body systems and factors that influence growth and development  

Early Elementary  
  o 23.B.1: Identify health actions that influence the functions of the body  

Late Elementary  
  o 23.B.2: Differentiate between positive and negative effects of health-related actions on body systems  

Middle School  
  o 23.B.3: Explain the effects of health-related actions upon body systems  

Early High School  
  o 23.B.4: Explain immediate and long-term effects of health habits on the body systems  

Late High School  
  o 23.B.5: Understand the effects of healthy living on individuals and their future generations  

How Loud is Too Loud?  

DD Educational Objectives:  
1. Students begin to associate different sounds with decibel levels.  
2. Students identify which method of hearing protection is the best to practice when exposed to dangerous decibels from different sources  
3. Students identify and discuss the social norms and challenges associated with practicing hearing protection.  

Illinois Educational Benchmarks:  
A. State Goal 22: Understand principles of health promotion and prevention and treatment of illness and injury  

Early Elementary  
  o 22.A.1c: Identify dangerous situations and safety methods to reduce risks  
  o 22.C.1: Identify sources and causes of environmental health risks (e.g. noise)  
  o 22.B.1: Encourage and support others in making positive health choices  

Late Elementary  
  o 22.A.2c: Describe and compare health and safety methods that reduce the risks associated with dangerous situations  
  o 22.B.2: Describe how individuals and groups influence the health of individuals  

Middle School  
  o 22.A.3a: Identify and describe ways to reduce health risks common to adolescents
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- 22.A.3c: Explain routine safety precautions in practical situations
- 22.B.3: Describe how the individual influences the health and well-being of the workplace and the community

- Early High School
  - 22.A.4c: Demonstrate basic procedures in injury prevention and emergency care that can be used in the home, workplace, and community
  - 22.B.4: Explain social and economic effects of health problems on individuals and society

- Late High School
  - 22.A.5b: Evaluate the effectiveness of health promotion and illness prevention methods using data from actual situations
  - 22.C.5: Compare and contrast how individuals, communities, and states prevent and correct health-threatening environmental problems

B. State Goal 24: Promote and enhance health and well-being through the use of effective communication and decision-making skills

- Early Elementary
  - 24.B.1: Recognize how choices can affect health

- Late Elementary
  - 24.B.2: Describe key elements of a decision-making process

- Middle School
  - 24.B.3: Apply a decision-making process to an individual health concern

- Early High School
  - 23.B.4: Explain how decision making affects the achievements of individual health goals

- Late High School
  - 24.B.5: Explain immediate and long-term impacts of health decisions to the individual, family, and community

Measuring Decibels with Sound Level Meters

DD Educational Objectives:

1. Students will measure sound intensities with a sound level meter.
2. Students learn how effective walking away from dangerous sound levels can be to reduce their exposure to dangerous sound.

Illinois Educational Benchmarks:


- Early Elementary
  - 22.A.1b: Identify methods of health promotion and illness prevention
  - 22.A.1c: Identify dangerous situations and safety methods to reduce risks

- Late Elementary
  - 22.A.2a: Describe benefits of early detection and treatment
  - 22.A.2b: Demonstrate strategies for the prevention and reduction of communicable and non-communicable disease
  - 22.A.2c: Describe and compare health and safety methods that reduce the risks associated with dangerous situations

- Middle School
  - 22.A.3a: Identify and describe ways to reduce health risks common to adolescents
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o 22.A.3b: Identify how positive health practices and relevant health care can help reduce health risks
o 22.A.3c: Explain routine safety precautions in practical situations

• Early High School
  o 22.A.4b: Analyze possible outcomes of effective health promotion and illness prevention
  o 22.A.4c: Demonstrate basic procedures in injury prevention and emergency care that can be used in the home, workplace, and community

• Late High School
  o 22.A.5a: Explain strategies for managing contagious, chronic, and degenerative illnesses
  o 22.A.5b: Evaluate the effectiveness of health promotion and illness prevention methods using data from actual situations

B. State Goal 23: Understand human body systems and factors that influence growth and development

• Early Elementary
  o 23.B.1: Identify health actions that influence the functions of the body

• Late Elementary
  o 23.B.2: Differentiate between positive and negative effects of health-related actions on body systems

• Middle School
  o 23.B.3: Explain the effects of health-related actions upon body systems

• Early High School
  o 23.B.4: Explain immediate and long-term effects of health habits on the body systems

• Late High School
  o 23.B.5: Understand the effects of healthy living on individuals and their future generations

C. State Goal 24: Promote and enhance health and well-being through the use of effective communication and decision-making skills

• Early Elementary
  o 24.A.1a: Differentiate between positive and negative behaviors
  o 24.B.1: Recognize how choices can affect health

• Late Elementary
  o 24.B.2: Describe key elements of a decision-making process
  o 24.C.2: Describe situations where refusal skills are necessary

• Middle School
  o 24.B.3: Apply a decision-making process to an individual health concern

• Early High School
  o 23.B.4: Explain how decision making affects the achievements of individual health goals

• Late High School
  o 24.B.5: Explain immediate and long-term impacts of health decisions to the individual, family, and community

How to use Earplugs

DD Educational Objectives:
1. Students will observe the proper technique and fitting of preformed earplugs
2. Optional: Students will have the opportunity to practice fitting earplugs in their ears.
Illinois Educational Benchmarks:

- Early Elementary
  - 22.A.1b: Identify methods of health promotion and illness prevention
  - 22.A.1c: Identify dangerous situations and safety methods to reduce risks

- Late Elementary
  - 22.A.2a: Describe benefits of early detection and treatment
  - 22.A.2b: Demonstrate strategies for the prevention and reduction of communicable and non-communicable disease
  - 22.A.2c: Describe and compare health and safety methods that reduce the risks associated with dangerous situations

- Middle School
  - 22.A.3a: Identify and describe ways to reduce health risks common to adolescents
  - 22.A.3b: Identify how positive health practices and relevant health care can help reduce health risks
  - 22.A.3c: Explain routine safety precautions in practical situations

- Early High School
  - 22.A.4b: Analyze possible outcomes of effective health promotion and illness prevention
  - 22.A.4c: Demonstrate basic procedures in injury prevention and emergency care that can be used in the home, workplace, and community

- Late High School
  - 22.A.5a: Explain strategies for managing contagious, chronic, and degenerative illnesses
  - 22.A.5b: Evaluate the effectiveness of health promotion and illness prevention methods using data from actual situations

Rock Your World: Time to Act!

DD Educational Objectives:
1. To bring awareness to peer pressure that a person can encounter when practicing smart hearing.
2. Students practice making personal decisions on individual behavior in social settings and discuss their answers with the class and educator.

Illinois Educational Benchmarks:

- Early Elementary
  - 22.A.1b: Identify methods of health promotion and illness prevention
  - 22.A.1c: Identify dangerous situations and safety methods to reduce risks
  - 22.B.1: Encourage and support others in making positive health choices

- Late Elementary
  - 22.A.2a: Describe benefits of early detection and treatment
  - 22.A.2b: Demonstrate strategies for the prevention and reduction of communicable and non-communicable disease
  - 22.A.2c: Describe and compare health and safety methods that reduce the risks associated with dangerous situations
Middle School
- 22.A.3a: Identify and describe ways to reduce health risks common to adolescents
- 22.A.3b: Identify how positive health practices and relevant health care can help reduce health risks
- 22.A.3c: Explain routine safety precautions in practical situations
- 22.B.3: Describe how the individual influences the health and well-being of the workplace and the community

Early High School
- 22.A.4b: Analyze possible outcomes of effective health promotion and illness prevention
- 22.A.4c: Demonstrate basic procedures in injury prevention and emergency care that can be used in the home, workplace, and community
- 22.B.4: Explain social and economic effects of health problems on individuals and society

Late High School
- 22.A.5a: Explain strategies for managing contagious, chronic, and degenerative illnesses
- 22.A.5b: Evaluate the effectiveness of health promotion and illness prevention methods using data from actual situations
- 22.A.5c: Explain how health and safety problems have been altered by technology, media, and medicine
- 22.B.5: Analyze how public health policies, laws and the media function to prevent and control illness

B. State Goal 23: Understand human body systems and factors that influence growth and development
- Early Elementary
  - 23.B.1: Identify health actions that influence the functions of the body
- Late Elementary
  - 23.B.2: Differentiate between positive and negative effects of health-related actions on body systems
- Middle School
  - 23.B.3: Explain the effects of health-related actions upon body systems
- Early High School
  - 23.B.4: Explain immediate and long-term effects of health habits on the body systems
- Late High School
  - 23.B.5: Understand the effects of healthy living on individuals and their future generations

C. State Goal 24: Promote and enhance health and well-being through the use of effective communication and decision-making skills
- Early Elementary
  - 24.A.1a: Differentiate between positive and negative behaviors
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  - 24.B.2: Describe key elements of a decision-making process
  - 24.C.2: Describe situations where refusal skills are necessary
- Middle School
  - 24.B.3: Apply a decision-making process to an individual health concern
- Early High School
  - 23.B.4: Explain how decision making affects the achievements of individual health goals
- Late High School
  - 24.B.5: Explain immediate and long-term impacts of health decisions to the individual, family, and community