



Fostering Health & Wellness Through
SunAWARE, Grades 3-5

www.melanomaprevention.org/resource_center.html

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Revised March 2014

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Massachusetts Frameworks, Strands, and Learning Standards Addressed:

I. Comprehensive Health Curriculum: Personal and Community Health Information Strand

A. Consumer Health and Resource Management Learning Standards:

1. Through the study of Health Care students will interpret the symbols and information provided on labels for health care products and food products. (12.2)

B. Ecological Health Learning Standards:

1. Through the study of Interdependence students will describe types of natural resources and their connection with health (13.1)

2. Through the study of Interdependence students will describe how business, industry, and individuals can work cooperatively to solve ecological health problems, such as conserving natural resources and decreasing pollution (13.2)

C. Community and Public Health Learning Standards:

1. Through the study of School and Community Efforts students will list the jobs carried out by people at school and in the community that support health and success in school. (14.1)

2. Through the study of Social Factors students will identify ways the physical environment is related to individual and community health. (14.2)

II. Science:

A. Earth and Space Science Learning Standards:

1. Weather:

- Explain how air, temperature, moisture, wind speed and direction, and precipitation make up the weather in a particular place and time. (#6)
- Describe how global patterns such as the jet stream and water currents influence local weather in measurable terms such as temperature, wind direction and speed, and precipitation. (#8)
- Differentiate between weather and climate (#9)

2. The Earth in the Solar System:

- Recognize that the earth is part of a system called the “solar system” that includes the sun (a star), planets, and many moons. The earth is the third planet from the sun in our solar system. (#13)
- Recognize that the earth revolves around (orbits) the sun in a year’s time and that the earth rotates on its axis once approximately every 24 hours. Make connections between the rotation of the earth and day/night, and the apparent movement of the sun, moon, and stars across the sky. (#14)

B. Life Science (Biology) Learning Standards:

1. Structures and Functions

- Differentiate between observed characteristics of plants and animals that are fully inherited... and characteristics that are affected by the climate or environment (e.g. browning of leaves due to too much sun...). (#5)

2. Adaptations of Living Things

- Give examples of how inherited characteristics may change over time as adaptations to changes in the environment that enable organisms to survive, e.g. ... color. (#6)
- Describe how organisms meet some of their needs in an environment by using behaviors (patterns of activities) in response to information (stimuli) received from the environment. Recognize that some animal behaviors are instinctive ... and others are learned... (#8)

Goal: Through information and awareness activities, students will understand the need, and become motivated, to reduce unprotected UV exposure, thus reducing the risk and incidence of skin cancer.

Objectives:

1. Students will understand how ultraviolet radiation is linked to planetary movement.
2. Students will understand the relationship of melanin to skin type and sensitivity.
3. Students will understand that over exposure to ultraviolet radiation can be dangerous. They will become familiar with proven methods of sun protection.

Materials: flashlight, earth model, UV Index, UV meter, UV Frisbee, UV Intensity/Actions Chart, sunscreens, sun protective clothing, sunglasses, Dermascan Skin Viewer

Vocabulary: ultraviolet radiation, ozone layer/depletion, pigmentation, melanin, mole, nevus, cataract, skin cancer

Opening Motivator: How many of you have ever had a sunburn?

Lesson Sequence:

I. Understanding Ultraviolet Radiation

1. Use a flashlight to represent the sun and ultraviolet radiation types to demonstrate the variation in wavelengths and their impact on the skin.
2. Use an earth model and a flashlight to demonstrate variation in UV intensity caused by the Earth's tilt and planetary movement including rotation and revolution. Include concepts of seasons, time of day, weather, ozone depletion, altitude, latitude and surface characteristics.
3. Introduce UV monitoring tools including the UV Index, UV meter and UV detecting Frisbee.
4. Introduce UV Intensity/Actions Chart (see Addendum).

II. Understanding Skin Sensitivity

1. Introduce concepts of pigmentation and biological interactions, including vitamin D metabolism.
2. Demonstrate signs of sun sensitivity including skin color, eye color, freckling tendency, and nevi count and characteristics.

III. Proven Methods of Sun Protection

1. Explore the impact of culture and trends on fashion and its impact on sun exposure behaviors.
2. Introduce the concept of sun protective gear including regular and specialized clothing and sunglasses. Define Ultraviolet Protection Factor (UPF), a rating system for sun protection clothing.

3. Demonstrate the variation in degrees of sun protection provided by various hats, shirts, bathing suits, and sunglasses.
4. Discuss sunscreen labeling including Sunburn Protection Factor (SPF), broad spectrum, water resistance, dose and reapplication.

IV. SunAWARE Acronym

Review the rationale and significance of “AWARE” for sun protection and skin cancer prevention.

Avoid *unprotected* exposure to sunlight, seek shade, and never indoor tan.

Wear sun protective clothing, including a long-sleeved shirt, pants, a wide-brimmed hat, and sunglasses year-round.

Apply recommended amounts of broad-spectrum sunscreen with a sunburn protection factor (SPF) ≥ 30 to all exposed skin and reapply every two hours, or as needed.

Routinely examine your whole body for changes in your skin and report concerns to a parent or healthcare provider.

Educate your family and community about the need to be SunAWARE.

Closure

1. Review acronym “AWARE” in SunAWARE
2. Emphasize that the “E” is for “educating others.”
3. Enlist students as SunAWARE Ambassadors charged with educating their families and friends about sun protection and skin cancer prevention.

Plan for Independent Practice

1. EPA SunWise Kids Activities:

<http://www.epa.gov/sunwise/kids/index.html>

2. Melanoma Foundation: SunSmart games and activities

http://www.melanomafoundation.com/index.php?option=com_content&view=article&id=5&Itemid=2

3. Sun Safety for Kids

<http://www.sunsafetyforkids.org/resources/activitysheets/>

Reflection

1. Thinking back on a previous sunburn incident, what would you do differently to protect yourself from sunburns and over exposure?

Assessment Based on Objectives

1. Performance on the Grades 3-5 SunAWARE Post-Test
2. Performance on independence practice sheets and extension lesson activities.
3. Informal evaluation with teachers regarding sunburn and tanning incidence following vacations.

Special Needs Adaptations

1. Use large print for handouts.
2. Provide Special Needs Aides with guidance to reinforce lesson in school environment.
3. Use visuals such as an Earth model, flashlight, sun protective gear, Dermascan to reinforce lesson.

4. Involve special needs students interactively in lesson presentation.
5. Select from DVDs and CDs listed in “Teacher Resources: Audio/Visual”.
6. Partner special needs and non-special needs students for activities.

Extensions

1. EPA SunWise Program Activities
http://www.epa.gov/sunwise/educator_resources.html
2. Science NetLinks
<http://sciencenetlinks.com/pdfs/skincells2factsheet.pdf>

Additional Cross-curricular Connections

1. Math- use of math factorials as they relate to SPF calculations.
2. Language Arts: use of SunAWARE books for discussion and as writing prompts.
3. Physical Education: Use of sun protection lessons to reinforce safe sun practices for sports, available at: <http://www.sciencenetlinks.com/lessons.php?DocID=445>

Teacher Resources

UV Monitoring Program

Children’s Melanoma Prevention Foundation provides schools with UV monitoring equipment including meter and reporting station. Foundation staff trains faculty to work with students to monitor UV intensity and report to school population. Obtain UV Index from our website at: <http://www.melanomaprevention.org>

Books:

Barrow, Mary Mills, and Maryellen Maguire-Eisen. *Lake Vacation*. Langdon Street Press, Minneapolis: 2008.

Barrow, Mary Mills, and Maryellen Maguire-Eisen. *Pretty Prom*. Langdon Street Press, Minneapolis: 2008.

Barrow, Mary Mills and John F. Barrow. *Sun Protection for Life*. New Harbinger Publications, Oakland: 2005

Video/Audiovisual

DVD; Colette Coyne Melanoma Awareness Campaign. www.ccmac.org

DVD: The Dark Side of the Sun; Practice Safe Sun. MolliesFund.org

DVD: “The Sun Show,” Ages 6-8: <http://www.sunsafetyforkids.org/videos/>

DVD: “SunWise: A Sun Safety Program for K-8”: View video on website at: <http://www.epa.gov/sunwise/tools.html>

Websites:

- Children’s Melanoma Prevention Foundation:
<http://www.melanomaprevention.org>
- U.S Environmental Protection Agency:
<http://www.epa.gov/sunwise>
http://www.epa.gov/sunwise/educator_resources.html
- National Council for Skin Cancer Prevention:
<http://www.skincancerprevention.org/resources>
- Skin Cancer Foundation:

<http://www.skincancer.org/school/teacherresources>

- Science NetLinks Skin Deep Project:
<http://www.sciencenetlinks.com/lessons.php?DocID=552>
- Center for Disease Control:
<http://www.cdc.gov/mmwr/PDF/RR/RR5104.pdf>
- World Health Organization:
http://www.who.int/topics/ultraviolet_radiation/en/
- World Health Organization: Sun Protection: A Primary Teaching Resource:
<http://www.who.int/uv/publications/en/primaryteach.pdf>
- California Department of Public Health Skin Cancer Prevention Program
<http://www.cdph.ca.gov/programs/SkinCancer/Documents/Skin-Cancer-Mission.pdf>
- Sunny Days Healthy Ways
http://www.sdhw.info/curriculum/1_grades_k-5_written.asp

Articles:

Maguire-Eisen, M. Skin Cancer: A Growing Health Problem for Children. *Seminars in Oncology Nursing*, Vol 29:206-213, 2013.

Maguire-Eisen, M. Food and Drug Administration's Final Ruling on Sunscreens: Have We Simply Rearranged the Deck Chairs on the Titanic? *Jrnl Derm Nurs*, Vol 3 (5):255-259, 2011

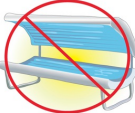

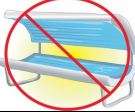


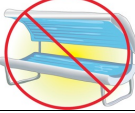








Demierre MF, Maguire-Eisen M, Cabral H, et al. for Dermatology Nurses Association, A Sun Protection Community Intervention in Quincy Middle Schools: Insights from the Use of Ultraviolet Photography and its Impact on Sunburn. *Journal of the Dermatology Nurses Association*, 2009: Vol 1 (2):111-118.

Maguire-Eisen M, Demierre M, Rothman K. The ABC's of Sun Protection for Children. *Dermatology Nursing* 2005: Vol 17, (6) 419-433.

Maguire-Eisen M, Demierre M. Educating Teens and Parents in Effective Sun Safety. *Practical Dermatology*, 2005: 2 (4) 39-45.

Maguire-Eisen M. Risk assessment and early detection of skin cancers. *Seminars in Oncology Nursing*, 2003: Vol 19, No. 1 (February), 43-51.

Addendum

UV	Level	SunAWARE™ Actions
1-2	Low	 
3-5	Moderate	  
6-7	High	   
8-10	Very High	    
11+	Extreme	