

Wiseheart Saves the Dawn



Lesson Overview:

Wiseheart is an ebook published by Children's Melanoma Prevention Foundation to introduce children to the importance of being SunAWARE and protecting our bodies from the sun. Through the use of this book and the following lesson plans children will learn how to avoid dehydration, what the UV Index is and how to use it, as well as why sunscreen works. This lesson plan is geared for children in Fourth - Sixth Grade.

Lesson Objectives:

Students will ...

- Explain the difference between being hydrated and dehydrated.
- Review the UV Index and how to apply it to daily sun protection practices?
- Describe how sunscreen works?

Estimated Time: 60 minutes

Key Vocabulary:

SunAWARE: is an acronym that helps teach five easy action steps to prevent skin cancer.

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

W - Wear sun protective clothing.

A - Apply adequate amounts of broad-spectrum sunscreen with an SPF of 30 or greater to all areas of exposed skin.

R - Routinely examine your whole body for changes in your skin.

E - Educate others about the need to be SunAWARE.

Dehydration: the loss of water from something, such as the body.

Hydration: the process of causing something to absorb water.

UV Index: a scale on which the strength of the sun's UV rays are measured. The index has been determined based upon a formula developed by the U.S. National Weather Service in 1992.

UVA rays (tanning)

UVB rays (burning)

Materials and Preparation:

Teach 1:

- Sponge or water absorbent cloth /small towels
- Containers (such as buckets or milk jugs (gallon size))
- Water

Teach 2:

- Graph paper
- Pencils
- Ruler
- Access to the internet (www.epa.gov/sunindex or a local accuweather site).

Teach 3:

- Paper
- Pencils, crayons

Introduction: (15 minutes, including 10 minutes to read the book)

Warm-up: Ask students to think about how the sun helps us to live. Ask students about some of the ways in which we also need to protect ourselves from the sun. Explain that the sun can be both helpful and harmful and that this is in fact what the main character, Wiseheart, learns in the following book.

Share ebook: *Wiseheart*.

Discuss with students how the Evil Spirit noticed Wiseheart's skin and how when he first encounters Wiseheart he immediately demands water "to quench his thirst and cool his sun-scorched body." Ask students what do they think happened to the Evil Spirit (direct this discussion to Teach 1: Hydration versus Dehydration).

Teach 1: Hydration versus Dehydration (10 minutes)

Share with students the following facts about the importance of water in the human body. Did you know:

- that water makes up about 60% of your body? You lose water when you sweat, urinate, and even breathe.
- to help your body stay cool, water evaporates through the skin.
- drinking water helps your body digest food.
- your kidneys help your body maintain the water level in your body. Kidneys also help rid your body of toxins that your body does not need.
- staying hydrated while exercising is important as water provides necessary minerals to your muscles and helps keep your joints working smoothly.

Ask students how they might know if they are getting enough water? Define the words hydration and dehydration. Discuss the signs of being dehydrated: feeling thirsty, dryness of the mouth, headaches, feeling sleepy, weak or dizzy and not being able to urinate.

Ask students how much water they think they should take in each day? According to the American Academy of Pediatrics children should have 6 glasses per day (or 2-3 ounces per pound of body weight). If there is time ask students to figure out their personal water needs by multiplying their weight by 2 or 3 and then converting ounces into gallons (1 fluid gallon =128 fluid ounces).

Experiment: To visually explain and show students the need to stay hydrated have students use sponge or towel to try and fill up a gallon container with water. Have students use the sponge or towel to soak up water from a large container and have them squeeze it out into a gallon container. While students are taking turns filling the container up, discuss the length of time it takes to rehydrate.

Additional teachable ideas: Encourage students to stay hydrated at home by making flavored water or ice by adding fruit. Encourage students to create a duct tape water bottle holder so that they can always carry a bottle of water with them.

Teach 2: What is the UV Index and how does it work? (20 minutes)

Discuss with students the section of the book when Wiseheart brings back the sun and his people begin to call him the Sun Guard. Ask the students to recall the reaction of the people once the sun had shone on them for a few hours (they were thirsty, hot, felt tired and their skin was sore).

Explain to students that we are lucky to have a tool that helps us understand the strength of the sun. It is called the UV Index. The UV Index advises us about the strength of the sun's UV rays. The numbers on the scale go from 0 (low) to 11+ (extremely high). The higher the number or value, the stronger the UV rays are and greater risk of sunburn and sun damage. The National Weather Service calculates the UV index using a computer model based on the sun's elevation, amount of ozone in the atmosphere, wind, and the cloud cover.

Ask students to go online and visit www.epa.gov/sunindex or a local Accuweather site (the UV Index is located under the outdoor forecasts / beach marine section). Ask students to pick 4-6 cities throughout the United States and record their UV index. Use the UV Index values to record and create a bar graph showing the changes in the cities. On the vertical axis label 0 to 11+ for the UV index. On the horizontal index label each of the cities that were picked. Use different colors for each of the three days that were selected. Ask students to reflect on their results, why there may have been changes, and if the UV Index is high, steps they could take to stay safe (focus on the SunAware acronym).

Teach 3: How and why does sunscreen work? (10 minutes)

Discuss with students how Wiseheart told his people to soothe their skin with mud. Ask students what they would use in today's culture instead of mud? (sunscreen)

Ask students if they know how sunscreen works and what does SPF stand for and mean? Sunscreen works because the chemicals (found in inorganic sunscreen) can act as a physical blocker and reflect and scatter light (UV rays). In chemical sunscreen the ingredients tend to absorb the UV rays. Proper sunscreen application includes reading the product label, applying a sunscreen with an SPF>30, applying a handful to cover the entire body, and reapplying every 2 hours or sooner if needed.

SPF stands for **Sun Protection Factor** and it refers to how well the sunscreen protects against one type of UVB rays. Broad Spectrum claims on the labels mean that the sunscreen blocks both UVA (tanning) and UVB (burning) rays. The SPF number refers to how long it takes for a person's skin to begin to burn or turn red. For example a SPF 15 will prevent your skin from getting red for approximately 15 times longer than usual (American Academy of Dermatology), so therefore instead of burning in 10 minutes, with sunscreen the skin will begin to burn in 150 minutes. SPF 15 protects against about 93% of UVB rays, while a SPF 30 protects against about 97% (Mayo Clinic). No SPF blocks 100% of rays, which is why it is important to be SunAware in other ways (review SunAware acronym).

Ask students if they know the amount of sunscreen they should apply every hour? (handful or 1 ounce per application for adults) to cover the entire body surface. How much is an ounce? While most of us will not bring a measuring cup with us each time we apply sunscreen, you can fill your palm with sunscreen to get the correct amount. See below:

Show students how to measure using their own hands. Trace your hand on a piece of paper. Then draw a line on the piece of paper that goes from the base part of your thumb down towards your wrist (see example below). Color in this section to show what an approximate ounce would look like.

Closing: (5 minutes)

Wrap-Up: You may use the following questions to help assess your students understanding of the lesson objectives.

Ask:

What is the difference between UVA and UVB? UVA rays are the longest ultraviolet ray and have the potential to pass through the skin down to the deepest layer or dermis. UVB rays are shortwave ultraviolet rays that may cause change to the top layer of our skin. 90% of UVB rays are blocked by the ozone.

How can we tell if we are becoming dehydrated? Signs of dehydration include: feeling thirsty, dryness of the mouth, headaches, feeling sleepy, weak or dizzy and not being able to urinate.

What is the UV Index and how can it help us? It is a scale used to measure the strength of the sun's rays and or risk for sunburn or sun damage. It can help us determine what things we need to do to protect our skin from the sun.

What are some of the ways in which we may protect our skin? We protect our skin by staying out of the sun, wearing protective clothing and gear, and applying sunscreen properly and on a regular basis. See Proper application of sunscreen illustration.

What does it mean to be SunAWARE? To be SunAWARE means that we avoid exposure to the sun, wear protective clothing, apply sunscreen, routinely check our bodies for changes, and help educate others about sun safety.

Proper application of sunscreen:

