

Too Much Sun Is No Fun

KEY TERMS

Altitude: Height of a location.

Exposure: Condition of being unprotected or uncovered.

Cancer: A group of diseases with one thing in common: the uncontrolled growth of abnormal cells in the body.

Sun protection factor (SPF): The amount of protection from ultraviolet (UV) light that a sun protection product will provide.

Sunburn: Inflammation and damage of the skin caused by overexposure to the UV rays of the sun.

Sunscreen: A substance used to protect the skin from UV rays.

Ultraviolet (UV) rays: Rays from the sun that cause sunburn. These invisible rays are part of the energy that comes from the sun. Overexposure to UV rays can also cause skin cancer, premature aging of the skin and eye damage.

OBJECTIVES

After completing this lesson, students will be able to:

- Describe sunburn.
- List types of skin damage caused by too much sun.
- List types of eye damage caused by too much sun.
- Explain how sunscreen prevents sunburn and helps prevent skin cancer.
- Explain the importance of wearing protective clothing while in the sun for extended periods.
- Name three things everyone should do to avoid skin damage.
- Name one thing everyone should do to avoid eye damage.

MATERIALS, EQUIPMENT AND SUPPLIES

- Poster: Too Much Sun Is No Fun
- *Longfellow's WHALE Tales* video
- DVD player and monitor or computer with Internet access, projector and screen
- Map of the United States
- Globe
- Some bottles/cans of sunscreen with different SPFs on the label
- Drawing paper (one for each student)
- Crayons, markers and pencils
- Student Handouts (one for each student):
 - Activity Sheet 9-1: Too Much Sun
 - Activity Sheet 9-2: The UV Index
 - Activity Sheet 9-3: UV Map of the United States
 - Activity Sheet 9-4: Shadow Alert
 - Activity Sheet 9-5: Hide from the Sun

Leader's Note

Display the poster, *Too Much Sun Is No Fun*, at the front of the classroom. Begin a discussion about the poster by asking students questions such as, "What are these people doing to make sure not to get too much sun? Can you think of other things people can do to avoid too much sun?" Refer to the poster throughout the lesson. As an option, you may use a projector to display the electronic version of the poster. Show the Longfellow's WHALE Tales video segment, "Too Much Sun Is No Fun," to support this topic.

TOPIC: INTRODUCTION

Key Points

- Being in the sun is fun, but if you are in the sun for too long you can get sunburned.
 - Sunburns can hurt!
 - Today we are going to talk about protecting ourselves from too much sun.
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TOPIC: SUNBURN

Key Points and Discussion

- How many of you have ever had sunburn?
Answer: Responses will vary. Allow time for responses.
- What was it like?
Answer: Responses will vary. Allow time for responses.
- What caused your sunburn?
Answer: Responses will vary. Allow time for responses.
- Some signs of sunburn are:
 - The skin may be red and feel warm to the touch.
 - Skin may blister or peel.
 - You may feel ill, dizzy or tired.
- Sunburn can be painful.
- The sun provides energy to the Earth in the form of light.
- Some rays of light from the sun, called ultraviolet (UV) rays, are invisible.
- UV rays can cause sunburn.
- Skin that is burned has been damaged by the sun's UV rays.

TOPIC: SKIN DAMAGE

Key Points

- Besides sunburn, too much exposure to UV rays can cause skin damage such as:
 - Dark patches.
 - Loss of skin elasticity (sagging skin).
 - Wrinkles.
 - Premature aging of skin (skin that looks older than it should).
- The most serious problem caused by too much exposure to the sun's UV rays is skin cancer.
 - Skin cancer is the uncontrolled growth of abnormal skin cells.
 - If not checked by a doctor, these cancer cells can spread from the skin into other tissues and organs, which can lead to serious health problems.
 - People with light skin and hair color have an increased chance of getting skin cancer.
 - Skin cancer can develop on parts of the skin most exposed to the sun.

TOPIC: EYE DAMAGE

Key Points

- Besides sunburn, too much exposure to UV rays can cause eye damage such as:
 - Cataracts, a condition that causes cloudy vision.
 - Skin cancer around the eyes.
 - Sunburn to the cornea, the clear layer that covers the front of the eye.

Leader's Note: Have students complete Activity Sheet 9-1: Too Much Sun.

TOPIC: THE UV INDEX

Key Points

- The amount of UV light reaching the ground in any given place depends on a number of things, such as time of day, time of year, how high a location is (called altitude) and how cloudy it is.
- To help people understand the UV rays in their area, the National Weather Service and the Environmental Protection Agency (EPA) have developed the UV index.
- The UV index number gives information about the strength of the UV rays reaching the ground.
- The higher the number, the higher the chance of sunburn and skin damage.
- The UV index is given daily for regions throughout the country.

Leader's Note: If you have access to the Internet, go to <http://www2.epa.gov/sunwise/uv-index> and check the UV index in your city for today. Show students how to check the UV index.

Leader's Note: Have students complete Activity Sheet 9-2: The UV Index.

TOPIC: WHERE ARE UV RAYS THE STRONGEST?

Activity

- Explain to students that UV rays are stronger near the equator, where the sun is most directly overhead.
- Show students the equator on the globe.
- Tell students, “UV rays are stronger at high altitudes, such as in mountainous areas, because they are closer to the sun.”
- Point out areas on the U.S. map that have high altitudes and note that a person can get sunburn while snow skiing on a cold day in the mountains.
 - Eye damage can also be worse at high altitudes.
- Show students the south and southwestern part of the United States on the map.
- Explain that this is the Sunbelt region, which is an area that has long summers and short winters.
 - Because the summers are long, the UV index is high on more days each year than in the northern states.

Leader’s Note: Tell students if your area is in the Sunbelt. The Sunbelt includes:

- Southern California
- Southern tip of Nevada
- Arizona
- New Mexico
- Texas
- Oklahoma
- Arkansas
- Louisiana
- Mississippi
- Tennessee
- Alabama
- Georgia
- North Carolina
- South Carolina
- Florida
- Hawaii

Leader’s Note: Have students complete Activity Sheet 9-3: UV Map of the United States.

- Explain to students that the map they just colored represents the UV index across the United States on a day last September. Point out what the UV index was in your area on that day.
- Ask students, “If you lived in North Dakota, would it be OK for you to be outdoors on this day?”
Answer: Yes.
- Ask students, “If you lived in Florida, would it be OK for you to spend a lot of time outdoors on this day?”
Answer: No.

TOPIC: WHEN ARE UV RAYS THE STRONGEST?

Key Points

- The sun's angle changes with the seasons. UV rays are strongest in the summer.
- The sun's rays are the strongest between 10 a.m. and 4 p.m.
 - You should limit exposure to the sun during these hours.
- An easy way to tell how much UV exposure you are getting is to look for your shadow:
 - If your shadow is taller than you are (in the early morning and late afternoon), your UV exposure is likely to be lower.
 - If your shadow is shorter than you are (around midday), you are being exposed to higher levels of UV radiation. Seek shade and protect your skin and eyes.

Leader's Note: Have students complete Activity Sheet 9-4: Shadow Alert.

TOPIC: SUNSCREEN

Key Points

- Now, let's explore ways in which we can keep ourselves from getting a sunburn and protect our skin from skin cancer, because too much sun is no fun.
- If you are outside during a time when you could burn, you should wear sunscreen.
- Apply sunscreen 15 minutes before going outdoors or entering the water. This helps the sunscreen to absorb into the skin so it does not wash off in the water or if you sweat.
- Reapply every 2 hours, even on cloudy days, and after swimming or sweating.
- If you are swimming or playing sports, make sure to use sunscreen that is waterproof.
- Sunscreen should be applied as follows:
 - Completely cover the skin that will be exposed. Do not forget your ears, neck and feet!
 - Be careful when applying sunscreen on your face. Keep it away from your eyes.
 - Use plenty of sunscreen for your body. For example, if your sunscreen is a lotion, use a handful or more.
- Sunscreen bottles have a number that shows the level of protection.
- This is called the sun protection factor (SPF).
 - The number is a rating for how much protection the sunscreen provides.
 - The higher the SPF, the longer you are protected.

Activity

- Show students the bottles or cans of sunscreen you have on hand and show them the SPF on the labels.
- Tell students, "Everyone has a time that they can be in the sun before turning red. Let's say that you would normally burn after just 5 minutes in the sun. An SPF of 15 will give you 15 times the protection. If you multiply 5 and 15, you get 75, or 75 minutes of protection."

- Ask, “What if you burn after 5 minutes in the sun and your sunscreen has an SPF of 2?”
Answer: You will have 10 minutes of protection. That is not enough! Use a sunscreen with a higher SPF.
- Ask, “Do you think using sunscreen helps prevent skin cancer?”
Answer: Yes. Sunscreen can help prevent harmful UV rays from damaging your skin.

TOPIC: SUNSCREEN IS NOT ENOUGH

Key Points

- In addition to wearing sunscreen, wear protective clothing that covers your skin when you are in the sun, especially between the hours of 10 a.m. and 4 p.m., when the sun’s rays are most likely to cause sunburn.
- What else do we mean by protective clothing? We mean:
 - Hats with a wide brim that shade your face, neck and ears.
 - Tightly woven, loose-fitting and full-length clothing, such as a long-sleeved shirt and long pants.
 - Shoes.
 - Sunglasses that block 99 to 100 percent of UV radiation.
- You should also seek the shade between 10 a.m. and 4 p.m.

Leader’s Note: Have students complete Activity Sheet 9-5: Hide from the Sun.

Activity

- Provide students with a sheet of drawing paper and ask them to draw their favorite outdoor activity scene. (For example, some might draw a swimming pool, others might draw a softball field and others might draw a mountain for hiking.)
- Next, have them add themselves to the activity.
- Tell students, “Think about the risks for UV exposure for the activity, where the activity takes place, what time of year and what time of day.”
- Tell students to add items to their pictures that will keep them from getting too much sun.
- Tell students to write three actions they can take to keep themselves safe in the sun, such as moving into the shade, changing the time of day they do the activity, wearing protective clothing, applying sunscreen.

Discussion

- Did you know that fabric has an SPF factor?
Answer: Allow students the opportunity to respond.
- A cotton T-shirt has an SPF factor of 7.

- If you have an initial burn time of 5 minutes and you are wearing a cotton T-shirt, how many minutes of protection will you have in the sun?

Answer: *The correct answer is 35 minutes of protection. A cotton T-shirt has an SPF of 7. Five minutes of burn time × 7 SPF = 35 minutes of protection.*

Sun Safety

Activity

- Explain to students that you are going to play a game. The game is played like Simon Says, except rather than Simon giving directions, “The Sun” gives directions.
- “The Sun” tells students to act out certain actions related to being sun safe. Just like in Simon Says, students should do the actions only if the phrase, “The Sun says,” is stated first.
- Give each of the following instructions and wait for students to react:
 - The Sun says, put sunscreen on your face.
 - The Sun says, put sunscreen on your ears.
 - Put sunscreen on your neck.
 - The Sun says, put sunscreen on your neck.
 - Put sunscreen on your arms.
 - The Sun says, put sunscreen on your arms.
 - The Sun says, put on one piece of protective clothing.
 - Protect your eyes from the sun.
 - The Sun says, protect your eyes from the sun.
 - The Sun says, check your watch to see if it is a good time to be outside.

TOPIC: WRAP-UP

Leader’s Note: *Refer back to the poster, *Too Much Sun Is No Fun*, as you review the lesson.*

Discussion

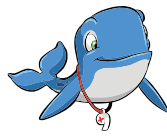
- Whenever you are spending time outdoors, you should protect yourself from too much sun.
- Be very careful when the UV index is high.

- How can you protect your skin from too much sun?

Answer: *Responses should include:*

- *Play in the shade when you can.*
- *Avoid being in the sun between the hours of 10 a.m. and 4 p.m.*
- *Wear protective clothing.*
- *Use sunscreen to protect the skin that will be exposed. Do not forget your ears, neck and feet!*

- *Use plenty of sunscreen for your body.*
 - *Apply sunscreen 15 minutes before going outdoors or entering the water. This helps the sunscreen to absorb into the skin so it does not wash off in the water or if you sweat.*
 - *Reapply every 2 hours (or more), even on cloudy days, and after swimming or sweating.*
-
- How can you protect your eyes from too much sun?
Answer: Responses should include:
 - *Wear sunglasses that block 99 to 100 percent of UV radiation.*
 - *Wear a hat with a brim.*
-
- Ready with your sunscreen?
 - Set with your sunglasses?
 - Go have fun, but don't get too much sun!



Too Much Sun

Name: _____

Unscramble the words below to see what too much sun exposure can cause.

ksni ncrace _____

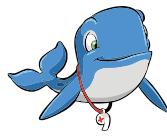
rsuubnn _____

lkiwrsen _____

rakd sotps _____

atactrac _____

yee mgaaed _____



The UV Index

Name: _____

Color the boxes below to create your own guide to the UV index.

Green

0 to 2: Low



Wear sunglasses on bright days. If you burn easily, cover up and use sunscreen SPF 30+.

Yellow

3 to 5: Moderate



Wear protective clothing, a wide-brimmed hat and UV-blocking sunglasses. Generously apply SPF 30+ sunscreen every 2 hours, even on cloudy days. Stay in the shade near midday when the sun is strongest.

Orange

6 to 7: High



Protection against skin and eye damage is needed. Reduce time in the sun between 10 a.m. and 4 p.m. If outdoors, seek shade and wear protective clothing, a wide-brimmed hat and UV-blocking sunglasses. Generously apply SPF 30+ sunscreen every 2 hours, even on cloudy days.

Red

8 to 10: Very High



Take extra precautions. Unprotected skin and eyes can burn quickly. Minimize sun exposure between 10 a.m. and 4 p.m. If outdoors, seek shade and wear protective clothing, a wide-brimmed hat and UV-blocking sunglasses. Generously apply SPF 30+ sunscreen every 2 hours, even on cloudy days.

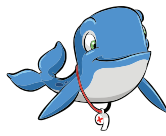
Purple

11 or more: Extreme



Take all precautions. Unprotected skin and eyes can burn in minutes. Avoid all sun exposure between 10 a.m. and 4 p.m. If outdoors, seek shade and wear protective clothing, a wide-brimmed hat and UV-blocking sunglasses. Generously apply SPF 30+ sunscreen every 2 hours, even on cloudy days.

Source: U.S. Environmental Protection Agency.



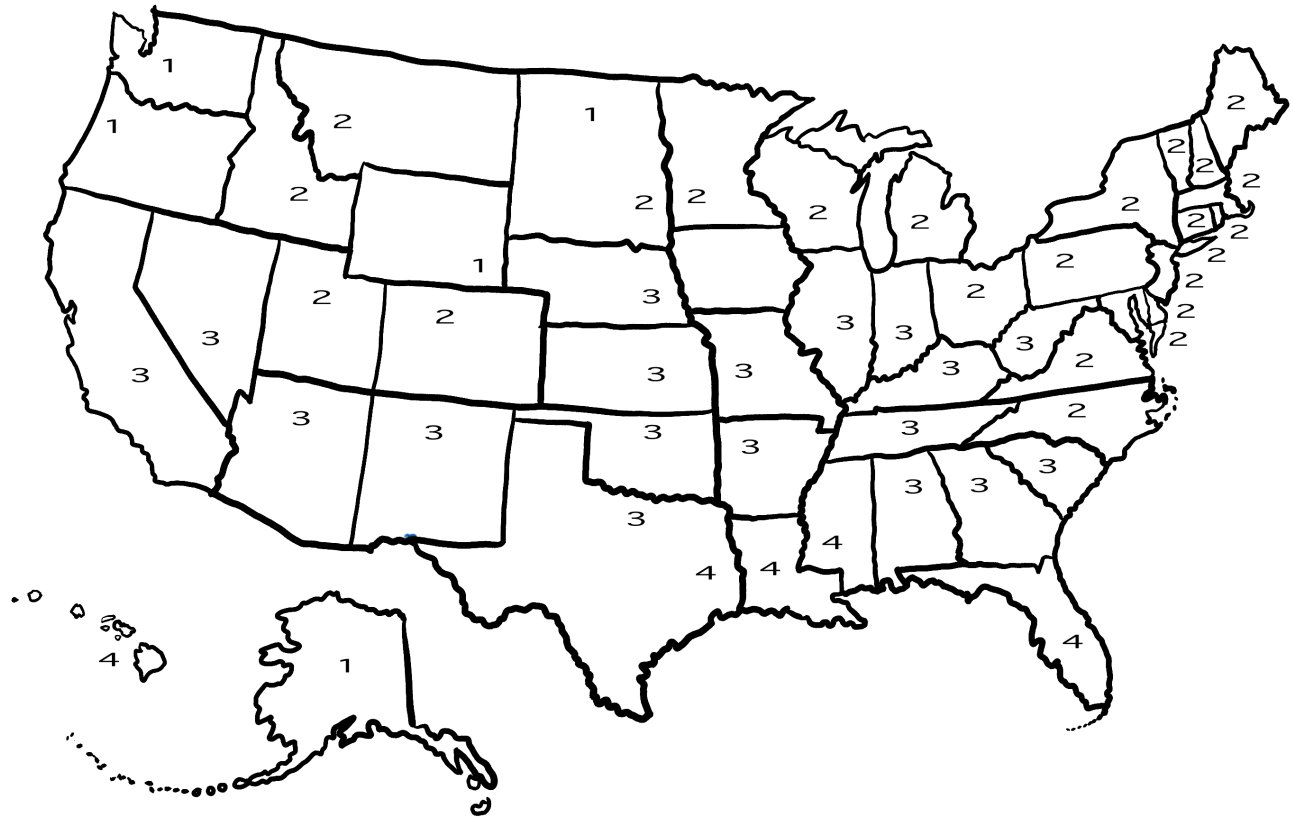
UV Map of the United States

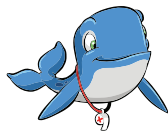
Name: _____

Color by number to see what the UV index was across the United States one day last September. Look at the number in each state. Look at the key at the top of the map. Color each state in the correct color.

Key

- 1 = Green
- 2 = Yellow
- 3 = Orange
- 4 = Red





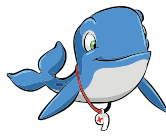
Shadow Alert

Name: _____

Look at the two shadows below and write about whether it is a good time to be outdoors and why or why not.







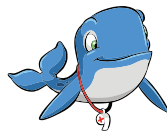
Hide from the Sun

Name: _____

There are safety items hidden in the picture that you may need on a sunny day. Color in the ones you can find and list them below the picture.



1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____



Too Much Sun

Name: _____

Unscramble the words below to see what too much sun exposure can cause.

ksni ncrace skin cancer

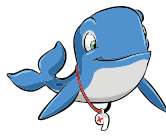
rsuubnn sunburn

lkirwsen wrinkles

rakd sotps dark spots

atactrac cataracts

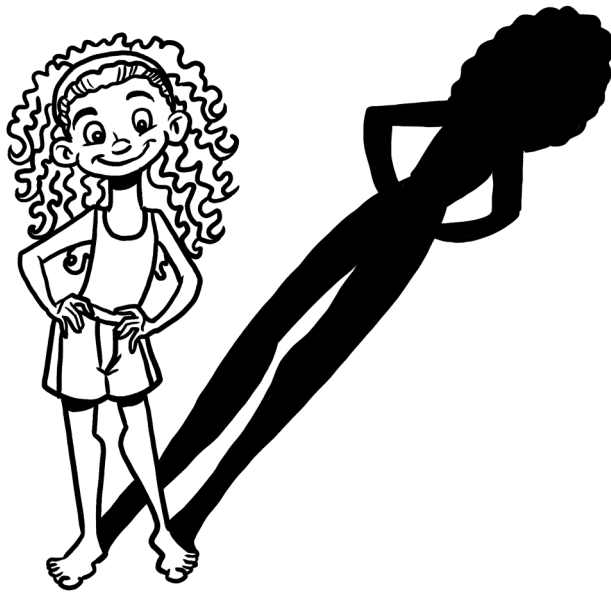
yee mgaaed eye damage



Shadow Alert

Name: _____

Look at the two shadows below and write about whether it is a good time to be outdoors and why or why not.

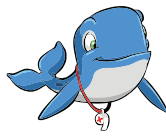


If your shadow is taller than you are (in the early morning and late afternoon), your UV exposure is likely to be lower.



If your shadow is shorter than you are (around midday), you are being exposed to higher levels of UV radiation. Seek shade and protect your skin and eyes. It is not a good time to be outside.





Hide from the Sun

Name: _____

There are safety items hidden in the picture that you may need on a sunny day. Color in the ones you can find and list them below the picture.



1. *sunscreen* _____
2. *water* _____
3. *baseball cap* _____
4. *wide-brimmed hat* _____
5. *tree* _____
6. *gazebo* _____
7. *sunglasses* _____
8. *long-sleeve shirt* _____
9. *long pants* _____