

Trip to the Zoo – Teacher’s Guide

Don’t Fry Day

Friday, May 25, 2012



Preparing for Your Trip to the Zoo—Be Sun Safe!

Why Sun Protection is Important at the Zoo

Visitors tend to stay at zoos for several hours and are in the sun for long periods of time. While paying close attention to the zoo animals, visitors often are unaware of the skin damage the sun may be causing. Therefore, it is important to take precautions to protect yourself and your students from the sun when visiting the zoo. The sun’s harmful rays put children especially at risk, so this guide promotes simple strategies for children and their teachers to limit sun exposure. In addition to helpful tips, we’ve included several activities that teach children how to be safe in the sun, fun facts about zoo animals, plus information on *Don’t Fry Day* and the EPA SunWise program.

Packing List

Vital Sun Safety-Related Items to Pack to Protect You and Your Students

- A wide-brimmed hat
- A broad-spectrum sunscreen with a Sun Protection Factor (SPF) of 30 or higher
- Sunglasses
- Lip balm with SPF 30 or higher
- An umbrella
- Long-sleeved, light-weight shirts and pants
- A list of indoor exhibits to visit during the sun’s peak UV hours (between 10 a.m. and 4 p.m.)

Remember the “Shadow Rule”

The sun’s ultraviolet (UV) rays are strongest when your shadow is shorter than you are. Plan your day so that you’re visiting the indoor areas during the middle of the day when the sun is strongest. Many animals avoid direct sun, so you’ll want to visit outdoor areas of the zoo early and late in the day.

Suggested Activity – At the Zoo

Search for SunWise Animals at the Zoo

Animals are naturally safe in the sun. Print out copies of this checklist and search for SunWise animals during your trip to the zoo. Encourage students to try and find animals using SunWise behaviors (e.g. rhinos rolling in the mud to protect their skin from the sun) or SunWise characteristics (e.g. the black rings around a meerkat’s eyes that protect it from UV rays).

(<http://www.skincancerprevention.org/system/files/publications/school-activities/sunwiseanimalsearch.pdf>)

Animal skin, like human skin, needs protection from the sun's burning rays. Use this "Animal Skins" worksheet to help students find animals with different types of skin coverings. (<http://www.foundation.sdsu.edu/sunwisestampede/skins.pdf>)

Suggested Activities – Before Going to the Zoo

Measure Your Shadow Activity

Learning Objective

The objective of this activity is to demonstrate to students what causes a shadow, how shadows change from morning to evening, and how they can tell by the length of their shadows what times of day they should seek protection from the sun's harmful UV rays. Ask the students to predict how their shadows will change during the day. Once the day is over, ask them to compare their prediction to the actual shape and size of their shadows. Assess what they have learned by asking them to explain the shadow rule.

Supplies

Chalk (have a different color for each time the students trace their shadow)
Paper and pencil
Outside area with dark cement or blacktop
A clear sunny day
Watch or clock
Yardstick/meter stick

Estimated Time

At least three 15-minute intervals during one day

Directions

Instruct the students to make a chart on a piece of paper to record the time they traced the shadows and the size of the shadows. Also, each student should record his/her own height for comparison. The chart will need two columns and three rows. The top of the chart should be labeled "time" and "measurement." The side of the chart should be labeled "first shadow," "second shadow," and "third shadow." If necessary, draw the chart on the board to show how it should look.

You should take the students outside three times during the day (once around noon). Have students choose a partner. Instruct the students to trace their partner's shadow using a piece of chalk on the cement surface of the schoolyard. They should begin tracing the shadow from the feet. They should write their names inside their shadows. Students should use the yardstick to measure the length of the shadows each time they trace them. Students should record the measurement and time in their charts.

When everyone goes back outside later in the day, have each student stand on the feet of their own shadow and have their partner retrace their new shadow on top of the original. Again, they should record the measurement and time in their charts.

Discussion

Discuss how shadows are formed. A shadow is a dark figure or image cast onto the ground by our bodies intercepting the light of the sun. Both the sun and the moon can create shadows. We have noticeable shadows throughout the day; however, our shadows are much shorter closer to noon when the sun is overhead. Explain to the students that when their shadows are long (during the early

and late parts of the day), the sun is not as intense. When their shadows are short (during the middle part of the day), the sun is more intense, and they are at greater risk for skin damage by the sun's UV rays. Also mention that visible light, not UV rays, causes shadows. UV rays are present even on cloudy days. Nevertheless, the shadow rule is a good indication of UV intensity. Teach students the shadow rule: *"Watch your shadow: Short shadow, seek shade!"*

Questions and Answers

1. What makes your shadow? *The rays of the sun shining on one side of your body generate a shadow that is projected away from your body.*
2. Do you always have a measurable shadow? *Yes. When the sun is overhead at noon, the projection of the shadow is much shorter than it is during the rest of the day.*
3. Can the moon make shadows? *Yes. When there is a full moon, the light can create a shadow, but the moon does not emit UV rays.*
4. Is your shadow always the same size? *No. Your shadow is long in the early morning and late afternoon, your shadow is short during midday.*
5. How much time passed between your first and last shadow? *Students should count the hours and minutes on a watch or clock to find the number.*
6. What is the difference between your measurements? *Students should subtract to find the answer.*
7. What is the shadow rule? *"Short shadow, seek shade."*

UV Bead Activity

This is a quick, fun activity using UV-sensitive beads (which can be purchased online from a variety of companies). The beads change color when exposed to UV rays, indicating to students that they need to cover up and seek shade.

Supplies

- UV beads (enough for ~10 beads per student)
- Thin elastic, bead elastic, or string
- Optional: safety pins, shoelaces, necklace string, etc.

Directions

Students design and make an item using UV-sensitive beads to wear or carry (e.g. on a backpack or shoelaces). The children can then wear the item (bracelet, necklace, pin) or pin/attach it to an item that will be exposed to the sun. Ideas include:

- string beads on a shoelace
- hang from a belt loop
- attach as a pin on a t-shirt
- attach to a sweatshirt zipper
- earrings
- cell phone jewelry
- attachment for zipper of backpack
- hair tie

Have students test their beads in direct sun, in shade, when the sun is obscured by clouds/on a cloudy day, under clothing, beneath sunglasses, and inside.

Discussion

Discuss the changes the students saw in their beads in different environments/situations. What does this indicate about the presence of UV rays? (i.e. discuss that UV rays are still present on cloudy days, that different types of clothing provide different levels of protection, and the difference that being in the shade makes).

Who am I Quiz

This is a great handout to use with students, courtesy of San Diego State University. Match the animals on the handout to the clue that tells how each animal protects itself from the sun (<http://www.foundation.sdsu.edu/sunwisestampede/who-pencil.pdf>)

Additional Ideas and Information

Take the *Don't Fry Day* Pledge:

Pledge to teach about sun safety in your spring and summer activities. In an effort to raise awareness about a health issue that is largely preventable and too often ignored – skin cancer – the National Council on Skin Cancer Prevention encourages you to participate in its annual national sun safety day. EPA teams up with other members of the Council, which include the American Cancer Society, the American Academy of Pediatrics, and the Centers for Disease Control and Prevention, to support the *Don't Fry Day* campaign. As millions of us enjoy the great outdoors on Memorial Day weekend and throughout the summer, EPA and the National Council remind Americans to practice sun-safe behaviors. As part of this campaign, we'd like your help! Pledge to incorporate sun safety into your spring and summer activities.

Participating educators receive a *Don't Fry Day* poster and a set of sun safety stickers. In addition, school classrooms are entered into a drawing for one SunWise Classroom Prize Pack – a classroom set of UV-sensitive SunWise beads, a real-time UV monitor, and other sun safety resources. The drawing for the prize pack takes place on *Don't Fry Day*, the Friday before Memorial Day each year.

Sign up to take the pledge here: <http://www.epa.gov/sunwise/dfdpledge.html>

Sign up for SunWise:

The U.S. Environmental Protection Agency's SunWise program is an environmental and health education program that teaches children and their caregivers how to protect themselves from overexposure to the sun. Through the use of classroom-, school-, and community-based components, SunWise seeks to develop sustained sun-safe behaviors in schoolchildren.

SunWise Schools receive materials that facilitate cross-curricular classroom learning. The program also encourages schools to provide a sun-safe infrastructure, including shade structures (e.g., canopies, trees) and policies (e.g., using hats, sunscreen, sunglasses) that promote sun protection in a school setting. Though based in schools, SunWise also supports community partnerships, such as inviting guest speakers to school assemblies, to enhance sun safety efforts.

To find out more about the SunWise program and to sign up, please visit www.epa.gov/sunwise.

National Council on Skin Cancer Prevention

For more information, visit the National Council's site at www.SkinCancerPrevention.org. The National Council on Skin Cancer Prevention is the united voice of more than 40 organizations, associations, and agencies dedicated to reducing skin cancer morbidity and mortality in the United States. Council members represent some of the nation's premier physicians, researchers, clinicians and advocates for melanoma and skin cancer prevention.