

KINDERGARTEN UV

UV AND ME!

LEARNING OBJECTIVE

The student will learn that the sun is essential for life on Earth and has rays that we cannot see called ultraviolet (UV) rays. Too much UV exposure is dangerous, but there are simple ways for people to protect themselves from overexposure to harmful UV rays.

STUDENT PERFORMANCE OBJECTIVES

- * The student will understand the sun is essential for life.
- * The student will identify benefits of the sun.
- * The student will identify harmful effects of the sun.
- * The student will understand that UV rays cannot be seen, but can be measured.
- * The student will identify practices, choices and products that protect him/her from overexposure to UV rays

BACKGROUND

All life on Earth--human, animal and plant--depends on the sun. The sun gives us light, heat, and ultraviolet (UV) rays. UV rays--not the warmth or brightness of the sun--cause changes in skin color and other materials. UV rays also can damage eyes and are the major cause of cataracts. Children are at high risk for overexposure to UV radiation due to thinner skin. Also, children spend three times more time outdoors than adults. Skin cancer and other UV related health problems are largely preventable if sun protection practices are followed. To be protected from UV rays, a sunscreen of at least Skin Protection Factor (SPF) 15 or sunblock should always be used. Sunscreens should be applied 20 minutes before exposure and reapplied at least every two hours while in the sun. Eye protection from sunlight can be obtained by using a brimmed hat or cap and by wearing UV absorbing eyewear.

<for more>

MATERIALS

- * Chart paper
- * UV Beads
- * Sun protectors: sunscreen (SPF15), UV absorbing sunglasses, wide brimmed hats
- * Recording sheet [**UV/K-1**]
- * Crayons to match the UV beads as they change colors
- * A pair of glasses -not UV protected
- * Various materials to use when testing UV beads (see #6

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in Procedure section)
*www.ecoplex.unt.edu

OPENING

Ask the students:

What do you know about the sun?

PROCEDURE

1. After the children name things they know about the sun, ask them to think about helpful and harmful effects of the sun. Record their comments on chart paper. It may look like this:

Helpful

Harmful

Helpful: light, heat, warmth, helps plants grow, feels good, etc.

Harmful: sunburns, suntans, too hot while playing, hurts eyes, makes playground equipment hot, etc.
Ask what would happen if we didn't have the sun.
Conclude that we must have the sun to live on earth.

2. Ask if any of the students have ever worn sunscreen. Ask if they know why they wear sunscreen. Discuss with the students that the sun has ultraviolet rays that cause our skin to turn colors and can hurt our eyes. Both of these are dangerous. Although we cannot see UV rays, they can be measured. We use the measurements to know when to protect ourselves from too much sun.

3. Show the students the UV beads. Explain that the UV beads are sensitive to UV light rays and get darker when UV rays get stronger. Tell the students that they will go outside and around the school to see how the beads change colors--discovering where the UV rays are strongest/most dangerous. Ask the class for ideas for where to "test" the beads. Some suggestions: playground where children have recess (sunny and shady areas), PE areas, inside the classroom, by windows, in rooms without windows.

4. As the children go from location to location, have them record (using **UV/K-1**) the changes, if any, in the UV beads. Be sure to try this ahead of time so that the crayons are the correct colors for the UV beads your class is using.

5. After returning to the classroom, help the students summarize their UV bead findings. These should include statements about sun vs. shade and indoor vs. outdoor areas. Summarize their findings on chart paper. Tell the students that tomorrow you will take them to the same places and they should bring something from home that they think might protect the beads (as well as themselves) from UV rays.

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6. On the following day, allow the students who brought things from home to show them and explain why they think their object will protect the UV beads. Be sure to have ready your supply of UV protectors: sunscreen, hat, sunglasses (both UV and non UV absorbing), different types of clothing (material-tight and loose weave), a pair of clear non-tinted glasses (to apply sunscreen to one lens and not to the other), wax paper, foil, plastic bag, newspaper, colored paper, white paper and anything else you can think of that would be fun to test!
7. Revisit the same locations around the school as yesterday. Use record sheets to record the UV bead changes with the various materials acting as a UV screen.
8. On chart paper list the objects which did/did not provide protection for the UV beads.
9. Give each child a UV bead and a record sheet to take home. Ask each student to test the bead in at least one place at home (brainstorm places that would be good choices-don't forget cars) and to return the record sheet and bead tomorrow. Discuss findings.
10. Repeat this lesson on an overcast day! Ask the students if they think UV rays are dangerous on such a cloudy day.

SO WHAT? (LIFE APPLICATION)

Help the students draw conclusions about sun safety habits based on the UV bead experiments. The students will realize that using UV protection is a daily health habit, like brushing teeth. Discuss safe ways to apply sunscreen--using precaution with eyes!!

CURRICULUM EXTENSIONS

ART

Create sunglasses in art center. Provide a frame pattern, cellophane, and scraps for decoration. Let the children wear their glasses outside. Rub glue on one lens to simulate vision impaired by cataracts (caused by UV overexposure).

Draw a picture of yourself playing on a sunny day wearing proper UV protection.

LANGUAGE ARTS

Dictate or write all the ways the child in the above picture is "Sun Smart".

MATH

Use the UV Index on the ECOPLEX web site to graph the

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daily UV reading at your class's recess time and outdoor PE class time. Follow these readings for the year!

SCIENCE

Teach students the shadow rule as a simple way to be "Sun Smart". If your shadow is taller than you, UV exposure is usually low. If your shadow is shorter than you, the UV exposure is usually high. Ask if they can draw any conclusions about the safest times to play outside based on the shadow rule. Check conclusions using the UV Index data on Ecoplex.

Set up a classroom experiment using colored paper with a die-cut design over part of it. Leave it in a sunny spot or windowsill and ask children what they think will happen. Check the paper each day and record changes over a period of time.

SOCIAL STUDIES

Have the students talk to friends and family about what they have learned about sun safety.

TEKS

Science: K.1.A, K.2.A,B,C,D,E, K.3.A,B,C,
K.9.A,C,

RESOURCES

FAQs

[Sun Up, Sun Down](#) by Gail Gibbons
[The Sun](#) by Seymour Simon