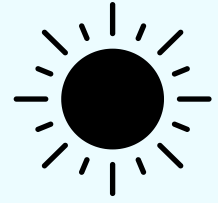


# 2. Adventures in Climate and Health: Sun Savvy Explorers: Mastering the Art of Sun Safety



## Student Objectives:

- The student will become aware of the sun's presence in outdoor activities
- The student will learn about both the beneficial and harmful effects of the sun
- The student will identify ways to protect themselves from the sun
- The student will show the power of the sun to make changes

## Materials Required:

Two large pieces of paper with a sun drawn on them with rays, see example at the end. Paper and markers for children to make posters  
Sun-print paper or dark colored construction paper, items for the children to use on their paper for a print.

## Key vocabulary:

Carbohydrates: component of our diet that provides energy

Photosynthesis: using light to create carbohydrates

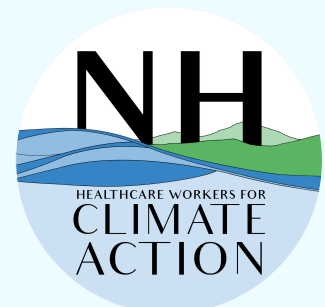
Ozone layer: upper layer of the atmosphere

Ultraviolet radiation: harmful rays of the sun

Sunburn: burned skin from over exposure to the sun



**Climate and Health Initiative  
for Children  
in Kearsarge & Sunapee**



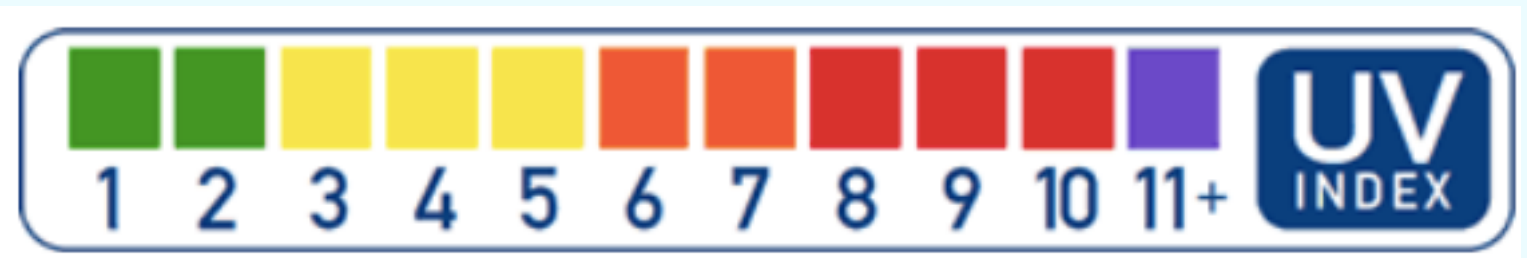
## **Background Information:**

Skin cancer is the most common form of cancer in the United States. Ultraviolet radiation (UVR) exposure is the most preventable risk for skin cancer and can be reduced by avoiding sun during daily peak hours, wearing protective clothing, and applying sunscreen properly. Sun protection must start early in life. It has been estimated that one quarter of an individual's lifetime exposure to sun occurs before age 18. Severe sunburns, especially those occurring before age 20 may be linked to melanoma and basal cell and squamous cell carcinoma. Children are seldom adequately and consistently protected from the sun. Through sun safety curricula, preschool and elementary school children can learn about the importance of solar protection, and they may increase their preventive behavior.

Targeting children for primary prevention of skin cancer will minimize sun damage and may foster lifelong sun-protective behaviors that will reduce the likelihood of developing skin cancer, especially melanoma. Parental beliefs about and involvement in sun protection are important components of successful skin cancer prevention programs for children. Parents control family resources and activities and the availability of sunscreen and protective clothing.

## General recommendations for adults in charge of children:

- Limit outdoor time when the sun is at the highest from 10-3
- Find shady areas for the children to play in
- Children should wear protective clothing, long sleeve/ long pants lightweight clothing and hats
- Children should wear sunscreen with an SPF of 15 or higher
- Know your daily UV index: <https://www.epa.gov/sunsafety/uv-index-1>
- Know the UV scale: <https://www.epa.gov/sunsafety/uv-index-scale-0>

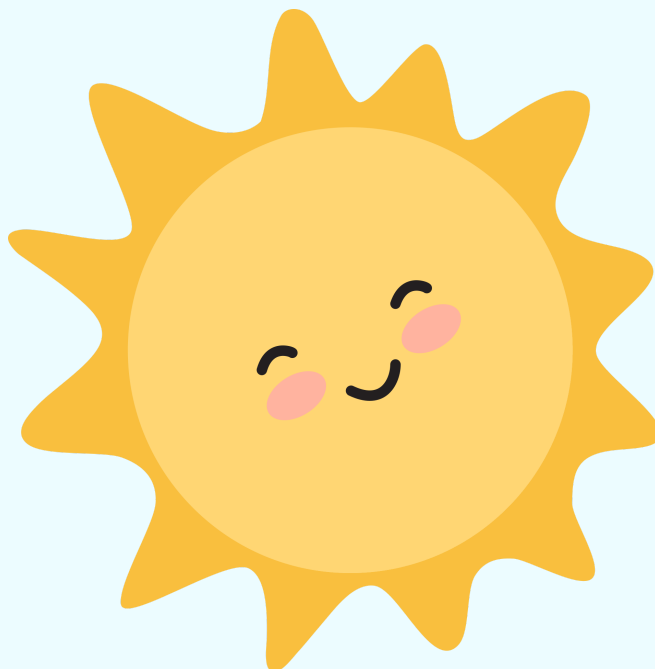


The UV Index scale used in the United States conforms to international guidelines for UVI reporting. Learn how to read the UV index Scale to help you avoid harmful exposure to UV radiation.

- 0-2 low risk No protection needed. You can safely stay outside using minimal sun protection
- 3-7 moderate to high risk Protection needed. Seek shade during late morning through mid-afternoon. When outside, generously apply broad-spectrum SPF-15 or higher sunscreen on exposed skin, and wear protective clothing, a wide-brimmed hat, and sunglasses.
- 8+ very high to extreme risk Extra protection needed. Be careful outside, especially during late morning through mid-afternoon. If your shadow is shorter than you, seek shade and wear protective clothing, a wide-brimmed hat, and sunglasses, and generously apply a minimum of SPF-15, broad-spectrum sunscreen on exposed skin.

## Facts about the sun:

- The sun makes the planet warm enough for all plants, animals and people to live.
- The sun helps plants make carbohydrates through photosynthesis, after which the plants in turn provide us with food to eat and oxygen to breath.
- The sun turns water from the salty ocean into rain through evaporation and provides us with fresh water.
- The sun gives us day and night
- Now the discussion on how the sun can be harmful, in general terms for the children how too much of anything can be bad for you.
- The protective layer of the atmosphere is called the ozone layer. This used to keep harmful rays of the sun called ultraviolet radiation from reaching us but it has been damaged and now these rays can reach us. This is why it is important to learn to protect our bodies from the sun.



## Procedure:

1. Fill out K and W on the KWL chart. What do you know about the sun?
  - a. Introduce what the children know about the sun and add information as well about both beneficial and harmful facts
2. Talk with the students about temperatures they experienced over the summer. Ask if they think we had more, the same, or less hot days than in the past. Then let them know that it was the hottest summer on record, which is why it's important to learn how to cool down. Then ask them what they did to cool down during hot days.
3. How do the children enjoy outside? Draw a circle (sun) on a large piece of paper, draw straight lines for the rays, and list the activities that the children like to do outside in the sun on the rays.
4. Introduction of sunburn protection ideas: Ask the children if they have ever had a sunburn.
  - a. What did it feel or look like?
  - b. What caused the sunburn?
5. What are some ways to prevent sunburn? (Hats, clothing, trees, shade, umbrellas, sunscreen.)
6. Reinforce habits to prevent sun exposure. Have paper and markers available for the children to make posters to hang in their classroom to remind them of sun safety. Topics:
  - a. Keep hats and sunglasses in our bags or cubbies
  - b. Have sunscreen available
  - c. Play in the shade
  - d. Wear clothes that cover our skin
  - e. Remind a friend

7. The power of the sun: Make a sun print. There is commercially available paper available that can deliver a print in less than 10 minutes, or you can use dark colored construction paper which can take as long as 2 hours. Lay objects on the paper and place in the sun.

8. Importance of shade in play: Play shade game. Define an area for play with several shade choices. Explain game to children.

Announce “put your toes in the shade”, children run to a shade source and put their toes in the shade. Announce another body part and children have to run to another source of shade and put that body part in the shade. Keep changing body parts and the children continue to run to shady locations, stop when the children tire of the game.

9. Conclude the lesson by completing the L on the KWL chart.

Adapted from:

<https://ebccp.cancercontrol.cancer.gov>

Example of sun for the two large presentations at the beginning of the lesson.



Link for sun paper if desired:

[https://www.flinnsci.com/sun-print-paper/fb1554/?gclid=Cj0KCQjwj\\_ajBhCqARIsAA37s0wsMrHvgaJbkyZJwOKSTBjhHlqdLaBb16dgrNRxLdsFRyZBb3fgdkUaAvl4EALw\\_wcB](https://www.flinnsci.com/sun-print-paper/fb1554/?gclid=Cj0KCQjwj_ajBhCqARIsAA37s0wsMrHvgaJbkyZJwOKSTBjhHlqdLaBb16dgrNRxLdsFRyZBb3fgdkUaAvl4EALw_wcB)