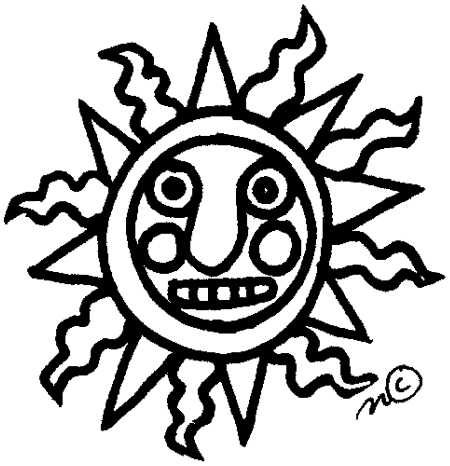
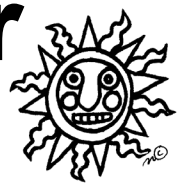
SunSafe in the Middle School Years



Overview: Program and Materials

As of April 2024

Why Address Skin Cancer Prevention with Middle School Youth?

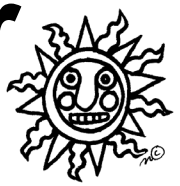


Parents tend to protect young children from the sun very well.

During middle school, youth begin to establish their own health habits.

Middle school youth still respond to adult advice and are influenced by role models (teachers, coaches, and parents.

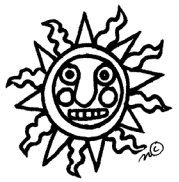
Why Address Skin Cancer Prevention with Middle School Youth?



- Only 35% of middle school students protect themselves from sun damage.

- In 2019, **66% of VT middle school students** reported having **at least one sunburn** in the past year. The percent of students who had sunburns increased with each grade level.

Skin Cancer Facts



- Skin cancers are the most common type of cancer in the U.S.
  - Skin cancers are increasing by 3 – 5% each year
  - Includes basal and squamous cell cancers
  - Includes melanoma (most deadly skin cancer)
- Reducing sun exposure may prevent **90%** of skin cancers.
- One or more blistering sunburns in childhood or adolescence **doubles** the risk of developing melanoma later in life.

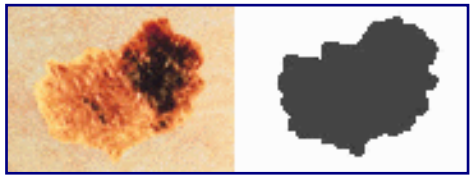
Skin Cancer

Most skin cancer is caused by excessive UV exposure.

Skin cancer on the eyebrow of a college student

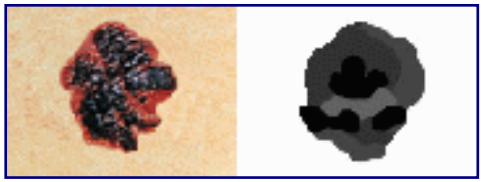
Melanoma

Irregular moles and spots can be a dangerous form of skin cancer called melanoma.

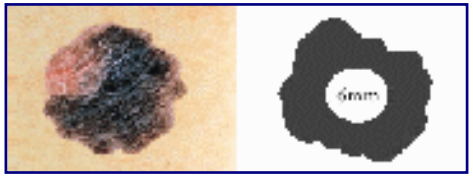


Asymmetry

Border Irregularity



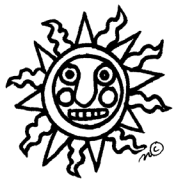
Color Variation



Diameter

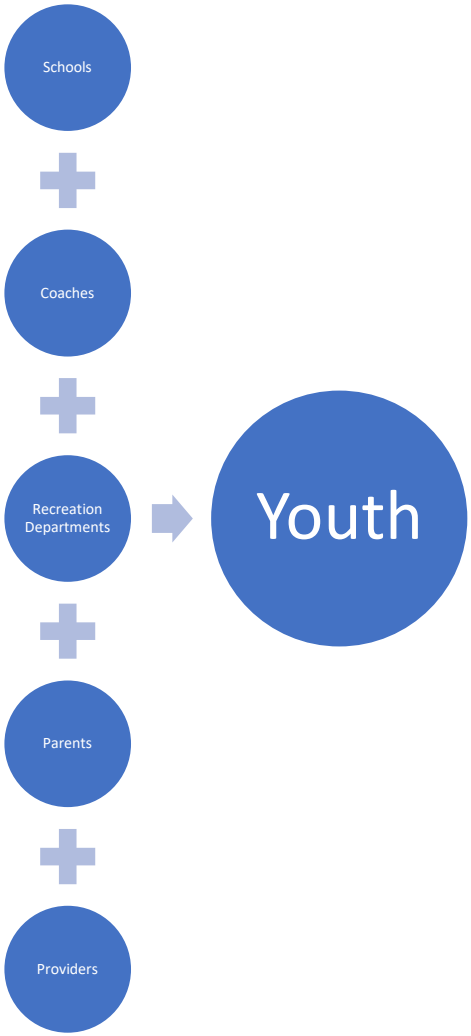
While a deadly form of skin cancer, melanoma can be cured if caught early, by having the cancerous lesion removed.

SunSafe in the Middle School Years



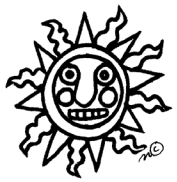
- SunSafe is a research-supported approach to improving youth sun protection behaviors
- Includes materials, activities, and messaging for:
  - Schools
  - Coaches
  - Town recreation departments
  - Parents
  - Healthcare providers

SunSafe in the Middle School Years



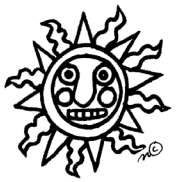
Youth report that the more role models they received messaging from, the more likely they were to practices sun safe behaviors.

Messaging: How to Protect Your Skin from UVA/UVB Rays



✓ Cover up	Long pants and shirts Wide-brimmed hats Sunglasses that have UVA/UVB protection
✓ Seek Shade	Especially during times of a high UV index
✓ Wear Sunscreen	Use a broad-spectrum, water-resistant sunscreen SPF of 30+ **Reapply at least every 2 hours**
✗ Do Not Use Tanning Beds	By law, no one under 18 years old is permitted to use a tanning bed in NH or VT.

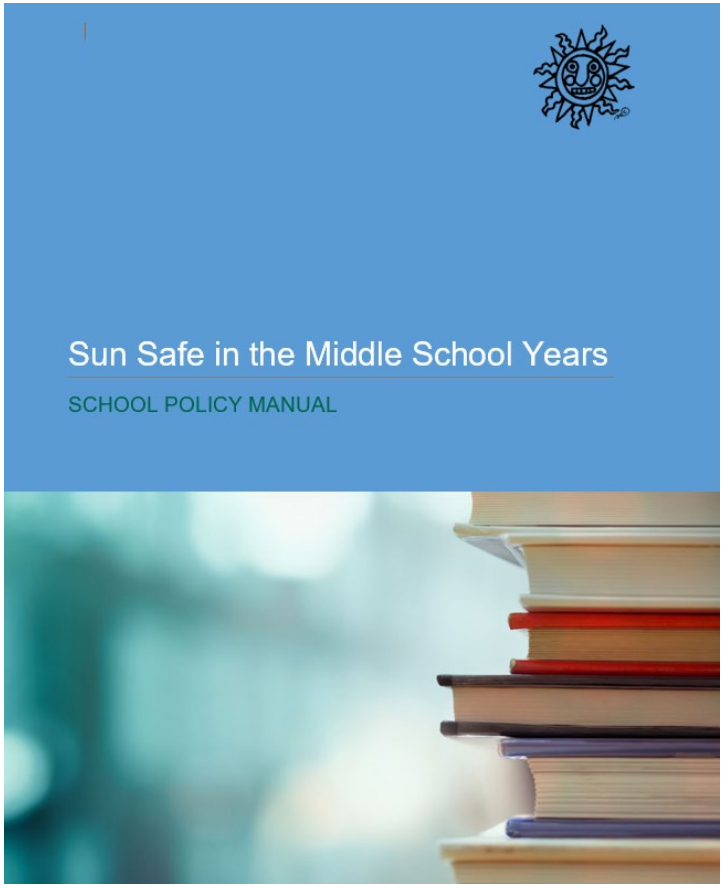
Implementation and Resources



- Resources are available for **free**
- Menu-driven resource list
  - Organizations can start small and build in additional partners over time
  - Tailed resources provide a unified approach without overtaxing one partner
- Identify champions
  - May be those affected by skin cancer

Materials: Schools

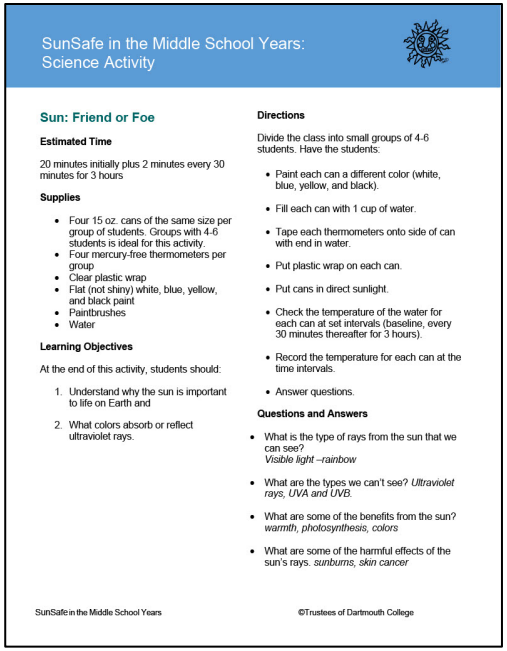
1. School Policy Manual
2. Peer Group Manual
3. Health Education Module Teacher Guide with a PowerPoint presentation.
4. Teacher Manual that outlines the school activities grouped into subject.



Materials: Schools

School Activities:

- Science (3)
- Math (2)
- Computer (2)
- Health & PE (3)
- Art (2)
- Social Studies (2)
- English (4)



SunSafe in the Middle School Years: Science Activity

Sun: Friend or Foe

Estimated Time

20 minutes initially plus 2 minutes every 30 minutes for 3 hours

Supplies

- Four 15 oz. cans of the same size per group of students. Groups with 4-6 students is ideal for this activity.
- Four mercury-free thermometers per group
- Clear plastic wrap
- Flat (not shiny) white, blue, yellow, and black paint
- Paintbrushes
- Water

Learning Objectives

At the end of this activity, students should:

1. Understand why the sun is important to life on Earth and
2. What colors absorb or reflect ultraviolet rays.

Directions

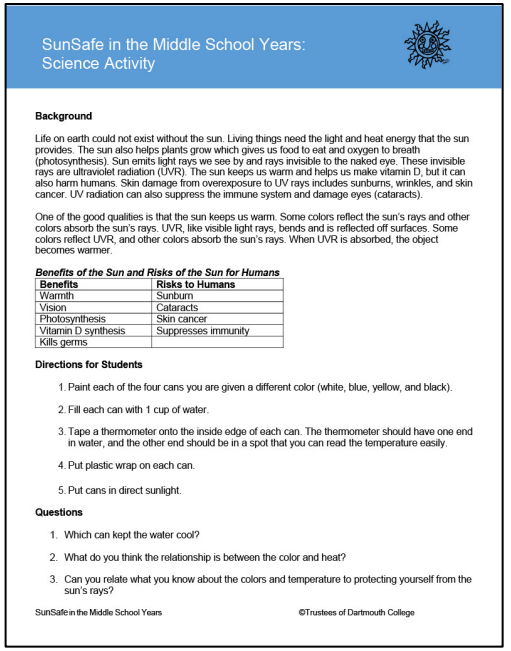
Divide the class into small groups of 4-6 students. Have the students:

- Paint each can a different color (white, blue, yellow, and black).
- Fill each can with 1 cup of water.
- Tape each thermometers onto side of can with end in water.
- Put plastic wrap on each can.
- Put cans in direct sunlight.
- Check the temperature of the water for each can at set intervals (baseline, every 30 minutes thereafter for 3 hours).
- Record the temperature for each can at the time intervals.
- Answer questions.

Questions and Answers

- What is the type of rays from the sun that we can see?
  Visible light –rainbow
- What are the types we can't see? *Ultraviolet rays, UVA and UVB.*
- What are some of the benefits from the sun? *warmth, photosynthesis, colors*
- What are some of the harmful effects of the sun's rays. *sunburns, skin cancer*

SunSafe in the Middle School Years ©Trustees of Dartmouth College



SunSafe in the Middle School Years: Science Activity

Background

Life on earth could not exist without the sun. Living things need the light and heat energy that the sun provides. The sun also helps plants grow which gives us food to eat and oxygen to breath (photosynthesis). Sun emits light rays we see by and rays invisible to the naked eye. These invisible rays are ultraviolet radiation (UVR). The sun keeps us warm and helps us make vitamin D, but it can also harm humans. Skin damage from overexposure to UV rays includes sunburns, wrinkles, and skin cancer. UV radiation can also suppress the immune system and damage eyes (cataracts).

One of the good qualities is that the sun keeps us warm. Some colors reflect the sun's rays and other colors absorb the sun's rays. UVR, like visible light rays, bends and is reflected off surfaces. Some colors reflect UVR, and other colors absorb the sun's rays. When UVR is absorbed, the object becomes warmer.

Benefits of the Sun and Risks of the Sun for Humans

Benefits	Risks to Humans
Warmth	Sunburn
Vision	Cataracts
Photosynthesis	Skin cancer
Vitamin D synthesis	Suppresses immunity
Kills germs	

Directions for Students

1. Paint each of the four cans you are given a different color (white, blue, yellow, and black).
2. Fill each can with 1 cup of water.
3. Tape a thermometer onto the inside edge of each can. The thermometer should have one end in water, and the other end should be in a spot that you can read the temperature easily.
4. Put plastic wrap on each can.
5. Put cans in direct sunlight.

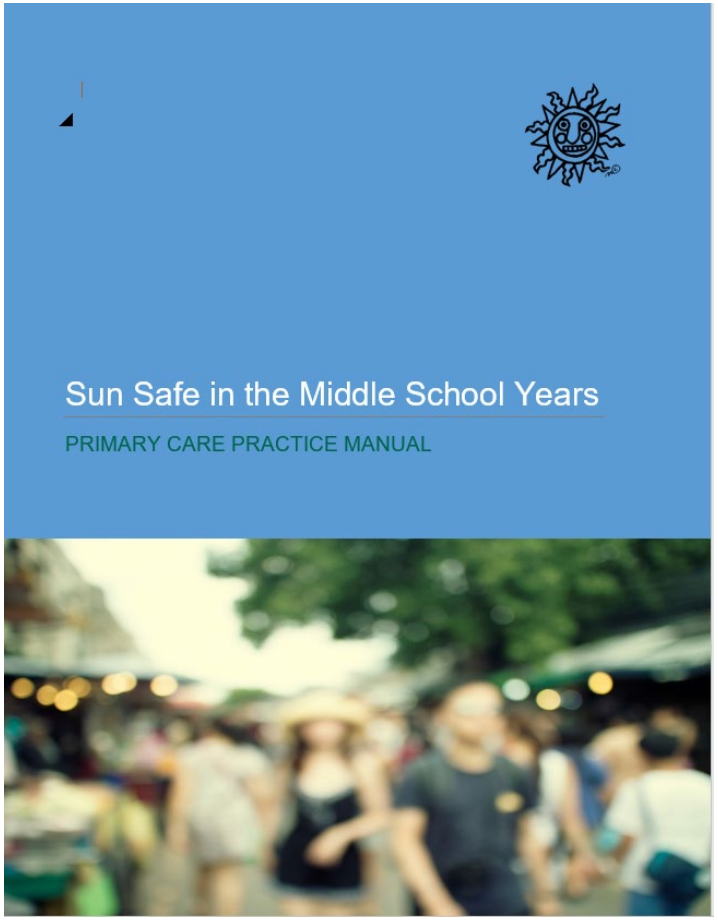
Questions

1. Which can kept the water cool?
2. What do you think the relationship is between the color and heat?
3. Can you relate what you know about the colors and temperature to protecting yourself from the sun's rays?

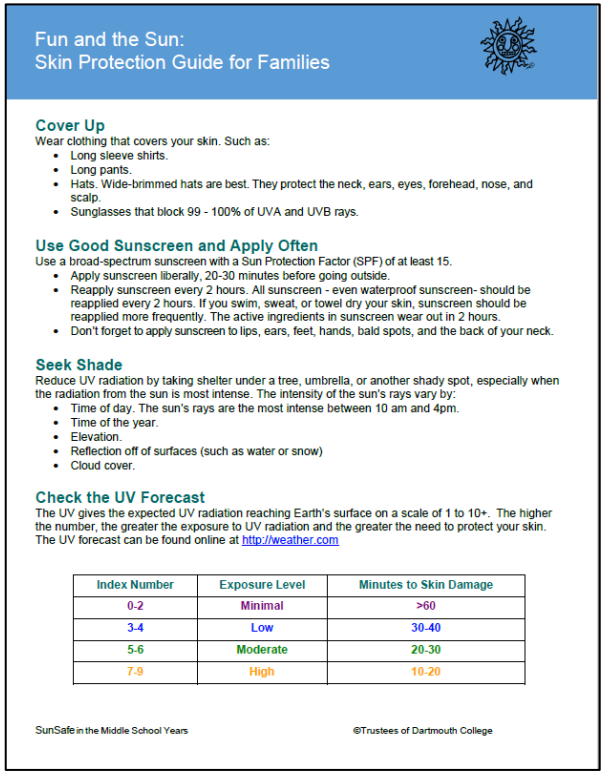
SunSafe in the Middle School Years ©Trustees of Dartmouth College

Materials: Community

1. Primary Care Practice Manual
2. Sports Coach Manual
3. Recreation Staff and Lifeguard Manual



Materials: Community



Fun and the Sun:
Skin Protection Guide for Families

Cover Up
Wear clothing that covers your skin. Such as:
- Long sleeve shirts.
- Long pants.
- Hats. Wide-brimmed hats are best. They protect the neck, ears, eyes, forehead, nose, and scalp.
- Sunglasses that block 99 - 100% of UVA and UVB rays.

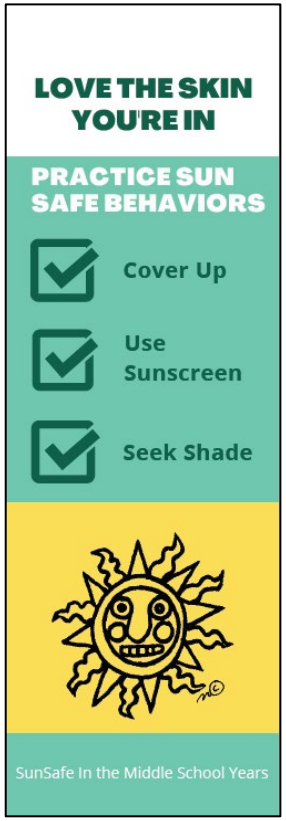
Use Good Sunscreen and Apply Often
Use a broad-spectrum sunscreen with a Sun Protection Factor (SPF) of at least 15.
- Apply sunscreen liberally, 20-30 minutes before going outside.
- Reapply sunscreen every 2 hours. All sunscreen - even waterproof sunscreen- should be reapplied every 2 hours. If you swim, sweat, or towel dry your skin, sunscreen should be reapplied more frequently. The active ingredients in sunscreen wear out in 2 hours.
- Don't forget to apply sunscreen to lips, ears, feet, hands, bald spots, and the back of your neck.

Seek Shade
Reduce UV radiation by taking shelter under a tree, umbrella, or another shady spot, especially when the radiation from the sun is most intense. The intensity of the sun's rays vary by:
- Time of day. The sun's rays are the most intense between 10 am and 4pm.
- Time of the year.
- Elevation.
- Reflection off of surfaces (such as water or snow)
- Cloud cover.

Check the UV Forecast
The UV gives the expected UV radiation reaching Earth's surface on a scale of 1 to 10+. The higher the number, the greater the exposure to UV radiation and the greater the need to protect your skin. The UV forecast can be found online at http://weather.com

Index Number	Exposure Level	Minutes to Skin Damage
0-2	Minimal	>60
3-4	Low	30-40
5-6	Moderate	20-30
7-9	High	10-20

SunSafe in the Middle School Years ©Trustees of Dartmouth College



Contact Information

- Website:
  - cancer.dartmouth.edu/cancer-community/resources
- Email:
  - DCC.Community.Outreach@Dartmouth.edu