Sun Safety

Low | Moderate | High | Very High | Extreme

Troop Patch Program
empowering girls to save lives through
skin cancer education and prevention

Daisy, Brownie, Junior activities

(You will find Cadette, Senior, Ambassador activities
at the reverse of this booklet)

*This patch program was made possible thanks to
The Gendell Family Foundation.*

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Sun Safety: Empowering girls and saving lives

The world is made possible because of the central star in the solar system – the sun. Its rays keep the Earth warm and help plants grow. But the sun can also be harmful and make you sick.

Thanks to the generous support of The Gendell Family Foundation, the Girl Scout Council of the Nation's Capital created the Sun Safety patch program to educate about the sun's unseen—but dangerous—ultraviolet (UV) rays and what you can do to lessen your risk of developing skin cancer.

Through completing the activities in this patch program, you will discover, connect and take action to help yourself and others be sun safe.

Activity Requirements

The patch program activities are separated into three themes: Sun Savvy (activities introducing sun safety concepts), Sun Protection (activities applying sun safe knowledge) and Sun-Sational (activities promoting positive sun aspects). The program concludes with a required Sun Safety Pledge.

This booklet has two sections, one for younger Girl Scouts and one for Girl Scout Teens. Daisies, Brownies and Juniors should choose activities from the younger girl section, and Cadettes, Seniors and Ambassadors should choose activities from the teen section (found at the reverse of this booklet).

In addition to the Sun Safety Pledge...

Girl Scout Daisies must complete any two activities (3 activities total)
Girl Scout Brownies must complete one activity from each of the themes (4 activities total)
Girl Scout Juniors must complete two activities from both the Sun Savvy and Sun Protection themes, and one Sun-Sational theme activity (6 activities total)
Girl Scout Cadettes must complete two activities from each of the themes (7 activities total)*
Girl Scout Seniors must complete two activities from each of the themes, and one additional activity of your choice (8 activities total)*
Girl Scout Ambassadors must complete two activities from each of the themes, and two additional activities of your choice (9 activities total)*

***Reminder: teens should flip this booklet to find age-appropriate activities**

The checkboxes ☐ next to each activity can be marked to help keep track of which have been finished. Throughout the program, there are suggested Extension Ideas which may help you extend your learning beyond the activity.

Once you complete the program you will earn the Sun Safety patch, which is sold in the council shop.

Some patch activities require you to be outside. Regardless of the length of time, you should take precautions to protect yourself from the sun when doing any outdoor activities. Sun protection is an important step for girls of all skin types and all girls should be encouraged to make good sun choices. Remember, even when it's cloudy or cold outside, the sun can be dangerous—some rays can filter through clouds, and reflect off of snow, water, concrete or other surfaces onto skin and into eyes.

Disappearing Shadows The sun is highest between the hours of 10 am and 4 pm each day. Though you should always practice good sun safety, during those hours you should limit the amount of time you spend outside and if you have to be outdoors, be extra careful to wear protective clothing and seek shade.

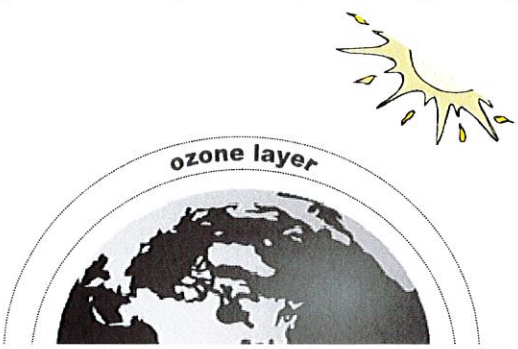
One way to help determine if the sun is in a dangerous position, is to look at the length of your shadow when you are outside – if your shadow is shorter than you are, it's a good idea to go inside.

On a sunny day select a flat place outside. Lie down on a large piece of paper and have a partner trace your outline and label it "my height". Then stand next to the paper putting your feet next to the feet in your outline, so that your shadow shows on the paper. Have your partner trace your shadow and label it with what time it is. Is your shadow's outline bigger or smaller than your actual "my height" outline? What does this mean?

Choose a few different times during the day to trace your shadow and compare their lengths to your actual height – some key times you may want to try are 9 am, 12 pm, 2 pm and 4 pm. If you have access to a concrete surface such as a sidewalk or driveway you can also use chalk to draw your outlines on the pavement to track the changes in your shadows.

Rate the Rays The UV Index is a scale that measures the intensity of ultraviolet (UV) rays. If skin is exposed to too much UV light it may get sunburned, become wrinkled or even develop skin cancer which can make you very sick. In the UV Index, each intensity level uses numbers and colors to tell you how risky it is to be outside. Find a chart that shows what each color and number in the UV Index means, such as the one on page C1. Use construction paper, markers or other materials to create UV color cards – one card for each color. For at least five days, find out what the UV rating is for the day and display the right cards to tell people the UV report; make sure you put the explanation chart next to the card on display. Maybe you can post the chart and the cards on your family's refrigerator or ask the school nurse if you can use the health room door. To find out what the UV rating is for your area look at your daily newspaper, watch a weather report or visit www.epa.gov and enter your zip code.

CFC Hunt Even though you can't see it, the ozone layer surrounds the Earth. Because the ozone layer helps keep people healthy by absorbing some of the harmful UV rays from the sun, it is important to take care of it. Some chemicals, called CFCs, used to be found in many household products, including refrigerators and hairsprays.



Once people learned that CFCs make the ozone layer thinner, laws were passed which said CFCs had to start going away. With an adult's help, look through your house to see if you can find any products that have a "no CFCs" symbol or message on them. Keep a list of all the products you find. (Hint: looking at cans of hairspray, bug repellant, spray-on deodorant and air freshener is a good starting place.)

Sunscreen Science Test the strengths of sunscreen lotions by getting 3-4 non-expired lotions with different SPFs. How strong a sunscreen is depends on its Sun Protection Factor (SPF). The higher the number, the longer it takes your skin to burn when wearing it properly. Wipe the sunscreens onto one side of the zipper sandwich bags – each strength on a separate bag. Be sure to label each bag with which SPF it is.

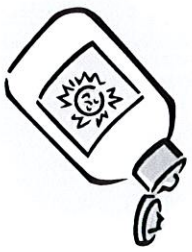
Add a small scoop of UV-sensitive beads to each of the sunscreen bags. Make sure the bags are zipped and securely closed, and the beads are positioned in an area of the bag that is coated with a thin layer of sunscreen. Put a small scoop of UV-sensitive beads into an empty bag and then take all of the bags into the sunlight and observe how the beads change. Do the beads protected by the lotion change as quickly as the beads in the bag with no sunscreen? Are the colors as bright? Are the beads in some bags brighter than the beads in others? What does this mean? (If you can't see the beads, you have too much sunscreen on the bags and should wipe some off.)

Put the bags in order from brightest beads to lightest and then compare their SPFs. Which sunscreen SPF works best? Think about how the beads are like your skin because they both change colors when exposed to UV rays from the sun (skin changes color when it tans or burns), though the beads change a lot faster than our skin does. Remember, everyone should use a broad-spectrum sunscreen with at least an SPF of 15. *See Shopping List for places to buy UV-sensitive products.*

Sun Protection

Sun Safety Relay Race One way you can protect yourself from the sun's harmful UV rays is to wear clothing that shields your skin from sunlight. Long-sleeved shirts and pants cover a lot of skin so those areas won't get burned. It is also important to remember to take steps to protect your eyes by wearing sunglasses or a hat with a brim.

Get your troop together and divide yourselves into two teams to play the Sun Safety Relay Race. Gather together two sets of sun protection clothing – each set should have a pair of pants, a long-sleeved shirt, a hat with a brim and a pair of sunglasses. Put a set of the protective clothes in a pile next to each team and several feet in front of each team set out a finish line marker, such as a chair.



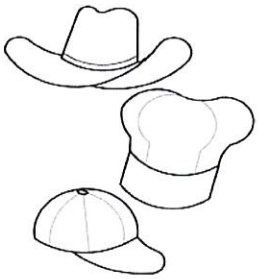
At the start of the race, the first girl on each team should dress as quickly as possible in all of the clothing and then run to and around her team's marker before running back to her team. Once back with her team, the girl should take off the protective clothes and pass them to the next girl on her team who puts the clothes on and runs around the marker. This continues until all of the girls on the teams have gotten dressed and run. The team that has everyone dress and complete the race first wins. Repeat the race a few times and see how fast you can get dressed. Try switching up the teams. Can your troop think of other protective props you can add?

Are You Sun-dressed? Plan how you can be sun safe on an upcoming troop camping trip, family vacation or sports practice. Would it be appropriate to wear a hat? Long sleeves? Sunglasses? Think about the activities you will be doing – remember if you're going to be getting wet from swimming or sweating, you may need a change of clothes or more sunscreen. Write a list, create a poster using drawings or pictures cut out from magazines or think of another way to show what you would wear or take with you to shield your skin and eyes. When you go on your trip, put your plan in action – make sure you put on sunscreen before your soccer game and be sure to wear a hat when you visit the Grand Canyon.

Extension Idea Hats with wide brims can protect the part in your hair and shield your eyes. They can also be fun and stylish. Get a plain hat or visor from a craft store or find one in your closet. Use fabric markers or paint to decorate it with images and words that remind you to be sun safe.

The Mighty UV Meter Not all clothing is created equal. Though having clothing between your skin and the sun creates a barrier against UV rays, some materials block more light than others, and there are tools out there to help you figure out which materials are best. A UV meter is one tool you can use to check how dangerous UV light levels are.

If you have access to a UV meter, use it to test the UV-blocking abilities of a few different pieces of clothing. Do this by taking the meter outside into direct sunlight and taking a reading of the UV Index number– make sure you make note of the number. The higher the number, the more UV danger there is. Staying in the same place take another reading, but this time place a layer of clothing over the meter's sensor. What happened to the number – did it go up, down or stay the same? Test a few more pieces of clothing and keep track of their UV Index numbers. Maybe you want to check the protection offered by your favorite T-shirt, pair of jeans, or your outdoor sports jerseys. Also keep track of the colors and fabrics that the pieces of clothing are made of – which colors or materials seem to make a difference in blocking



UV light? Before taking the readings, make sure you read the meter's directions carefully or have someone demonstrate how it works so that you know how to use the meter properly.

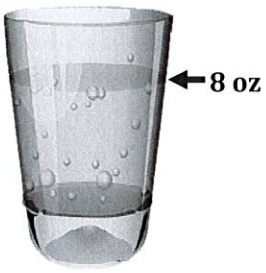
UV You Can See It is important to know if UV light is shining on you, even when you're inside. There are many UV-sensitive products on the market that you can use to make your own UV-detecting tool. Make a bracelet from UV-sensitive beads or give yourself a manicure using UV-sensitive nail polish. When you see your bracelet or nails change color in the sun, think about whether you're practicing good sun safety. You can also make a bracelet to give to a friend and include a short note to share the sun safety message. *See Shopping List for places to buy UV-sensitive products.*

Toast So You Don't Roast What you put in your body is just as important as what you put on your body to help you be safe in the sun. When it's hot outside or you play a lot during recess, do you notice that your skin starts to sweat? By drinking the right amount of water, you are able to make sweat which is your body's way of cooling off. Sweat comes from inside your body through your skin, so if your skin becomes sunburned it makes it difficult for your body to cool itself.

Generally, you are supposed to drink about 64 oz of water each day (that's eight 8-oz glasses), and if you're doing exercise or it's a hot day, that number goes up. Use a measuring cup to pour out 8 oz of water and put it into your favorite cup so that you can see how much it is. For a week, try to drink this amount of water at least eight times everyday. Think of creative and fun ways to keep track of the water you drink. Try a reusable water bottle and draw a smiley face on a special chart every 8 ounces you drink or pick out eight fun cups so that you can use a different one each time.

How Sun-usual People aren't the only ones who need to stay safe in the sun. Animals also have to be careful, especially because many of them live outside. Can you think of any ways that you have seen animals beat the heat? Look at the animals on page C1 and read about how they stay sun safe. Find two other animals and learn how they practice sun safety. At least one should be an animal you can observe for a few minutes on a hot day such as a family pet or a resident at the local zoo or animal refuge.

Question and Answer You can cut down your risk of skin cancer if you take the right steps, and if it does develop and you catch it early enough, doctors can usually treat it. Invite someone who has dealt with skin cancer to come talk to your troop about her experiences. Maybe a friend or relative is a doctor or nurse who helps take care of people who have problems because of the sun. Before the person arrives, your troop



should brainstorm some questions to ask. You might want to ask her how she helps people with skin problems and share some sun safety information you've learned.

Sun-Sational

Helping the Flowers Grow The sun keeps the planet warm and makes life possible. Plants need water and light from the sun to grow. Think of a few things that you use or eat that come from trees and other plants. Plants are so important that many states have an official flower or tree. What is your state's flower or tree?

Extension Idea Juliette Gordon Low—the founder of Girl Scouts—even had a flower for a nickname – can you find or a draw a picture of her flower nickname? What would your flower nickname be?

Sunflower Power Not only do sunflowers look like mini suns because of their large centers and bright yellow petals, as they grow, their heads turn to face the sun and follow its course through the sky. In honor of this solar-powered flower, learn one fact about sunflowers or find one product that can be made from them. Then try this tasty sunflower-inspired snack: Spread some peanut butter evenly on one side of a piece of bread and then use a flower-shaped cookie cutter to cut out a flower from the bread. Sprinkle a few actual sunflower seeds (with shells removed) onto the center of your mini sunflower and enjoy your treat.

Making Light of Art You can use sunlight to make artwork. Find a dark colored piece of construction paper and put it in a spot that receives a lot of sun. Find some objects with interesting shapes and put them in different places on the paper. Let the paper and objects sit undisturbed for several days. After about a week, look to see what sun prints were made on your paper. Use your new sun-printed paper to make a note card to write a sun safety message to a friend or frame it and put it on your wall as a reminder to yourself of the sun's power. There is also special sun-sensitive paper you can buy which will make the change in just a few minutes. *See Shopping List for places to buy UV-sensitive products.*

Baking Bonanza The sun's heat can be used to make energy that powers things you can use. Make your own solar-powered oven by covering one side of a piece of white typing paper, completely with aluminum foil and gluing it in place. Roll the paper into a cone—foil side in—and use tape to hold it together. Try using your solar cone oven to make a Girl Scout S'more treat. Place half of a Graham cracker into the cup of the cone so it sits firmly in place and makes a ledge. Add chocolate and marshmallows on top of the cracker and then cover the cone opening with clear plastic wrap and secure

it with a rubber band. Put your oven in a tall drinking glass and set it outside in a place that gets a lot of direct sun. Wait for the chocolate and marshmallows to melt a bit and then take everything out and put the other half of the Graham cracker on top.

Sun Safety Pledge

My Sun Safety Promise Complete the patch requirements by making a Sun Safety Pledge. A pledge is a promise to do—or not to do—something. Think about what you learned by working on this patch program – what will you do to keep yourself and your friends and family sun safe? Maybe you can promise to make sure you find shade in the middle of the day, or check the sunscreen in your house to make sure it isn't expired. Write down or draw a picture of your pledge and be sure to share it with others. Read the words of the Girl Scout Promise and the Girl Scout Law to help you.

A sample of a pledge card you can fill out to make your sun safety promise, or make one of your own.

Shopping List

Some supplies required for the activities in this patch program may not be readily available at stores, and may need to be purchased through specialty vendors. For your convenience, this list of websites offers shopping suggestions for places to purchase some of the harder-to-find items. These are merely suggested vendors and the quality and availability of materials cannot be guaranteed by GSCNC.

The Container Store www.containerstore.com
- 1 oz travel containers
- Spray bottles

Educational Innovations www.teachersource.com
- UV meter
- UV-sensitive Beads
- UV-sensitive Nail Polish
- UV-sensitive Paper

S&S Worldwide www.ssww.com
- UV-sensitive Beads

Steve Spangler Science www.stevespanglerscience.com
- UV-sensitive Beads
- UV-sensitive Cloth
- UV-sensitive Paper

Though not required for use in any of the patch program activities, the following is a list of materials and vendors you may find helpful in coming up with your own sun safety activities to further your understanding.

Sun UV Station
- www.solarmeter.com/modelSunstation.html

UV-sensitive Flyer Discs
- www.powerballgyroscope.com
- www.dtworld.com

Plastic Visors
- www.ssww.com

UV Index

The UV Index scale uses colors and numbers to rate the intensity of UV rays at the Earth's surface. The levels are based on measurements that take into account the angle of the sun, ozone amounts in the atmosphere and other factors.

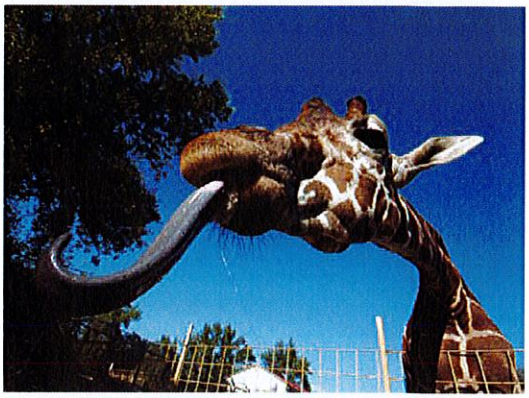
Exposure Category	UVI Range
Low	< 2
Moderate	3 to 5
High	6 to 7
Very high	8 to 10
Extreme	11+

Careful Critters

Animals practice pretty nifty strategies to keep themselves happy and healthy in the sun. Check out some of their defenses below!

Meerkats have black rings around their eyes to absorb the sun's rays, protecting their eyes from sun damage.

The dark color of a giraffe's tongue protects it from getting sunburned.



Hippopotamuses make their own sunscreen. They have glands in their skin that produce a red liquid which coats their skin and turns them a pinkish color! In addition to protecting their skin from the sun, the special liquid also helps them fight disease.

Warthogs don't have sweat glands so they will wallow in the mud to cool off and to protect their skin from the sun.

The ABCDEs of Melanoma

Skin cancer can develop anywhere on the skin. Ask someone for help when checking your skin, especially in hard to see places. If you notice a mole different from others, or that changes, enlarges, itches or bleeds (even if it is small), you should see a dermatologist.

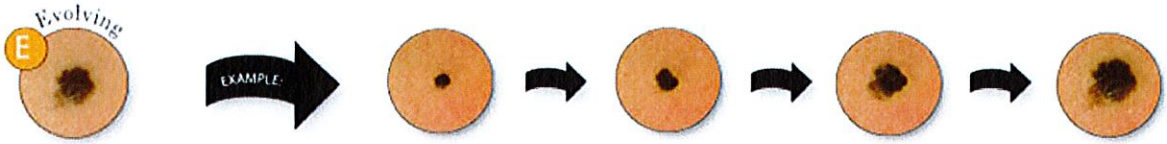
Use these skin-saving identifiers to check the spots on your body.

One half is unlike the other half.

Irregular, scalloped or poorly defined border.

Varied from one area to another; shades of tan and brown, black; sometimes white, red or blue.

While melanomas are usually greater than 6mm (the size of a pencil eraser) when diagnosed, they can be smaller.



A mole or a skin lesion that looks different from the rest or is changing in size, shape or color.

Source: American Academy of Dermatology

UV Light Facials

Technology advances allow people to see what lurks below the surface of their skin. Special UV filters on cameras create photographs that make visible the damage to the skin caused by the sun.

The extensive sun damage to this 17-year-old woman can be seen using special UV photography.

Photos (l-r): regular light color photo, regular light black and white photo, UV light photo.

This 20-something's fair skin belies the damage done to it from UV exposure.

Photos (l-r): regular light black and white photo, UV light photo.

References and Resources

This list of websites compiles references used during the research for this patch program, including statistics, and additional sites that can help you learn more about sun safety education and prevention.

American Academy of Dermatology www.aad.org
Website provides many educational resources about skin-related topics including photos and diagrams, dermatologist finder, skin cancer screening finder and articles. A special children's section uses educational games to deliver information: www.kidsskinhealth.org

American Cancer Society www.cancer.org
Melanoma information: www.cancer.org/Cancer/SkinCancer-Melanoma/DetailedGuide/index
Basal and squamous cell information: www.cancer.org/cancer/skincancer-basalandsquamouscell/index

Centers for Disease Control and Prevention www.cdc.gov/cancer/skin
More about sunburn, sweating and heat-related illnesses: www.bt.cdc.gov/disasters/extremeheat/heat_guide.asp

Environmental Protection Agency www.epa.gov
Other child-friendly sun safety activities: www.epa.gov/sunwise/doc/met_kit.pdf
Drinking water information and children's activities: http://water.epa.gov/learn/kids/drinkingwater/upload/The-Water-Sourcebooks-Grade-Level-K-2.pdf

Girl Scouts of San Jacinto Council www.gssjc.org
Sun safety education is not unique to this council. A Girl Scout council in Texas provides a patch program around it as well. Project S.A.F.E.T.Y. (Sun Awareness For Educating Today's Youth): www.gssjc.org/forms/F-86.pdf

KidsHealth www.kidshealth.org and **TeensHealth** www.teenshealth.org (with companion info for parents)
Information, tips and statistics about children and sun safety: www.kidshealth.org/parent/firstaid_safe/outdoor/sun_safety.html?tracking=P_RelatedArticle
Searchable site with articles specific to teen health: www.kidshealth.org/teen/your_body ➔ Skin Stuff

The Learning Channel www.tlc.howstuffworks.com/family/sunshine-activities.htm
Instructions for children's activities focusing on the positive power of the sun

National Institutes of Health www.health.nih.gov/topic/SkinCancer
Sun exposure information and links to other resources: www.nlm.nih.gov/medlineplus/sunexposure.html
Brief journal article on Vitamin D and sunlight: www.ncbi.nlm.nih.gov/pubmed/15585788

Pioneer Thinking www.pioneerthinking.com/basicperfume.html
Website provides recipes for making plant perfumes; vary from simple to more complex

San Diego State University www.foundation.sdsu.edu/sunwisestampede/meetanimals.html
Use this site to learn more about animals' unique skin-protecting behaviors in the Sunwise Stampede

Skin Cancer Foundation www.skincancer.org
Skin cancer statistics: www.skincancer.org/skin-cancer-facts.html
An overview of melanoma and people of color: www.skincancer.org/melanoma-and-skin-of-color.html

The Style Network www.mystyle.com/mystyle/fightwithstyle/skincancerprevention/index.jsp
Offers skin cancer prevention resources with a pop culture angle, including videos, body maps for tracking moles, skin-saving shopping recommendations and sun safety tips from celebrities

United Nations www.ozone.unep.org
Overview of the ozone layer, its role and how to preserve it: www.un.org/en/events/ozoneday/science.shtml
Additional information about the UN's ozone-supporting efforts: www.unep.org/ozonaction

Virginia Department of Game and Inland Fisheries www.dgif.virginia.gov/fishing/sarep/baes_safety.html
Though it has a fishing focus, this website provides instructions for several sun safety children's activities ➔ Calculating Your Coverage, The Hydration Ration, Introducing "The Rays", Lightbeam Tag, Shades of Protection

usually treat it. Interview a skin cancer survivor. Before the interview, brainstorm some questions to ask. You might want to know how old she was when she found out she had skin cancer or whether or not her habits have changed since the diagnosis.

Sun-Sational

The Scent-sible Sun In addition to hazardous radiation, the sun also provides heat and light making life on Earth possible. Plants and animals need the sun to survive. Look at the ingredients of your favorite perfume – how many of them are derived from plants? The paper you use to write on likely came from a tree. Find instructions to make recycled paper and use it to write a sun safety message to a friend, or try making plant-based perfume using this simple recipe or one of your own: Combine 1 tsp of cucumber essential oil, 1 tsp of lemon essential oil, 1 Tbsp of witch hazel and 1 cup of water and put it into a spray bottle. (Hint: If you have sensitive skin, you may want avoid this activity.)

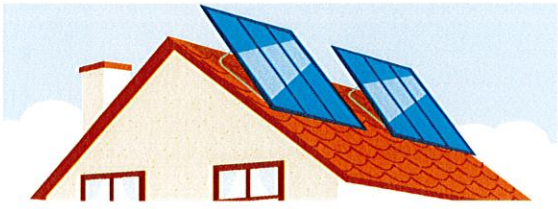
Vitamin D-lemma Your body needs different nutrients and vitamins to function and stay healthy. Find out what Vitamin D does for your body. Though getting some sun exposure can help you prevent a Vitamin D deficiency, too much of a good thing can be harmful. How much time is appropriate to be exposed to sunlight to get the necessary amount of Vitamin D? Besides sunlight, where else can you get it?

The Truth About SAD For some, the lack of sunlight has been linked to winter-onset Seasonal Affective Disorder (SAD)–a condition in which people develop temporary depression in the wintertime. This is thought to be because in the winter daylight hours are shorter and people tend to spend more time indoors because of the cold. Read at least two articles on SAD. Find out three symptoms of SAD and three sun-safe ways people can combat it. What are melatonin and serotonin and how might they relate to SAD? This article for teens on SAD may be a good place to start: http://kidshealth.org/teen/your_mind/mental_health/sad.html#.

Now That's Solar Power Special tools called solar panels can be used to harness energy from the sun and turn it into power. Visit a building in your area that uses solar panels to provide electricity or heating, or use one of the many kits on the market to demonstrate how solar energy works by using solar cells to power miniature motors. Experiment with its power at different times of the day.

Sun Safety Pledge

On My Honor Complete the patch requirements by making a Sun Safety Pledge. A pledge is a promise to do—or not to do—something. Think about what you learned by working on this patch program. What will you do to keep yourself and your friends and family sun-safe? Maybe you could help a younger Girl Scout earn her Sun Safety patch.



The Skin You're In While everyone, regardless of their skin color or type, should take appropriate precautions against hazards from the sun, some skin types are more susceptible to quicker damage from UV rays than others, depending on melanin content, among other factors. Though people with darker skin may not readily notice damage to their skin because its higher melanin provides some natural protection against the sun, it doesn't mean damage isn't taking place. As a whole, skin cancer in people of color is diagnosed in later stages, making effective treatment more difficult. Melanoma—the most dangerous type of skin cancer—in people of color most often occur on areas with less pigment like the palms of hands and the soles of feet. Take a skin assessment to determine what type of skin you have and what precautions you need to take to protect it. The Skin Cancer Foundation has a quiz at www.skincancer.org or you can find one on your own.

Extension Idea Dermatologists are doctors who specialize in skin issues. They can help you identify potential skin problems, and you can talk to them about skin concerns you have. Talk to a parent or guardian and see if it makes sense for you to schedule a visit with a dermatologist and if so, make an appointment.

Put A Ban On Tan As awareness and education spreads about the hazards of UV exposure—both from natural and artificial sources—legislators are passing laws to help protect you. Laws have been proposed and put in place to regulate the use of tanning machinery. Some legislation is national, while other laws are enacted by local governments. At the national level, find out what the TAN Act is (including what the TAN acronym stands for), and how the 2010 "tanning tax" works. Then see if your state, county or city has laws regarding tanning salons. Could someone your age legally use a tanning bed at a salon in your town? A chart put together by the National Conference of State Legislators may be a good place to start: http://www.ncsl.org/default.aspx?tabid=14394. What law regarding skin cancer protection and prevention would you want to see put in place in your community?

Dear Snooki, Despite studies showing the harms of tanning, some pop culture personalities and television show characters seek out methods to darken their skin using UV light. If you learn of a celebrity who "fake bakes" or see a show with a character who goes tanning, write a letter to the actor or character being portrayed explaining the dangers associated with tanning and convince her to stop. Be sure to think about how else that person could spend that time and money, and what example it sets for people who view her as a role model or watch their show. You may also want to include suggestions of sun-safe techniques they can use to achieve the same glow without the risks.

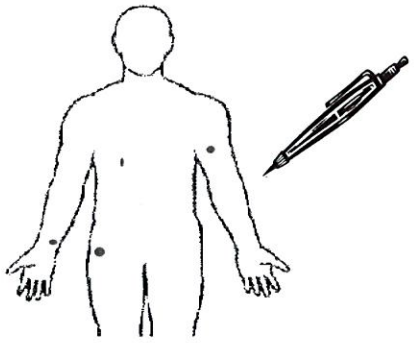
Interview A Survivor You can significantly reduce your risk of developing skin cancer if you take preventative steps. If it does develop and you catch it early enough, doctors can

a real window shopping trip or a virtual trip online and see what products you can find that have built-in SPF. Can you find a piece of clothing and a makeup or toiletry item that has SPF? On your trip, can you discover items that use methods besides SPF to prevent harm from the sun? Keep a list of your findings. Are there any products that you think would be beneficial to incorporate into your life? If you find an item that can help you without breaking the bank—maybe a lip balm that moisturizes and blocks UV rays—get the okay from a parent or guardian to purchase it or plan out a budget to help you save up.

Learn Your ABCs Though it isn't the most common, melanoma is the most dangerous type of skin cancer. Melanoma starts in the skin cells that produce melanin, which is what gives skin color and provides some natural protection against the sun. Using the "ABCDEs of Melanoma" (a guide is on page C2), do a thorough check of your skin to see if there are any moles that may be of concern. A good time to check your skin is after a shower or bath. You may need to ask a trusted relative or friend to check the places you can't see on your own. One way to keep track of any changing or new moles is to use a body map. A body map is a blank outline of a body—front and back and about the size of a sheet of paper—you use to mark where your moles are and what they look like. Make sure to date the filled-in outline and create a new one each time. Every time you do a skin check, compare your new findings to the previous picture and if you observe any changes that you don't think are normal, make sure you tell your parent or guardian and doctor.

All In Good Measure... Wearing sunscreen can be an easy way to protect your skin and it's recommended you use a broad-spectrum sunscreen of SPF 15 or higher daily. It's also important to know how much to use. Get two containers that measure ounces. Fill the first container with how much sunscreen you typically use or think you should use. Then fill the second container with 1 oz of sunscreen using the measuring marks. Compare the contents of the two containers – which one has more or are they the exact same? Experts recommend most people use about 1 oz of sunscreen during each application – the first being about 30 minutes before you head out into the sunlight. Try this experiment with a few friends or family members; ask them to measure how much sunscreen you should use and then show them what the actual amount should be – are they surprised? (Hint: You may want to do this part of the activity as a troop so that you don't waste sunscreen.)

Find several 1 oz containers that you can use to hold and dispense sunscreen for later use. Try visiting the travel section of your local all-purpose store or another location where you can pick up small cosmetic containers. Fill a few 1 oz travel cosmetic containers with sunscreen and take them on your next trip to the beach or other sun-filled outing. Whenever you need to reapply your sunscreen—most sunscreens need to be applied at least every two hours and more often if you've sweated or gotten wet—use the mini-containers so you'll make sure you're using the right amount during each application. Be sure that you bring enough to cover your full time of exposure.



A general guide to determine how long a sunscreen is effective in normal conditions is to use a simple formula to calculate the effective time. Take the number of minutes your unprotected skin normally takes to start burning and multiply it by the SPF. Using the formula, if your unprotected skin normally takes 20 minutes to burn and you use sunscreen with SPF 15, then you have about 300 minutes (5 hours) of protection (20 X 15 = 300). Use the formula to calculate about how long each of the sunscreens you selected would protect you. It is important to remember you are still expected to follow the proper application and use instructions, and other factors—such as geographic location, and participating in activities involving water and sweating—can affect the timing. (Hint: if you don't know how long it usually takes for your skin to burn, approximate. Do not let your skin burn on purpose.)

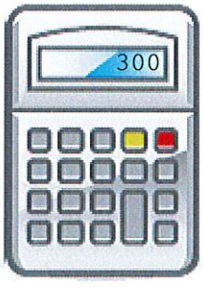
Do this experiment to demonstrate sunscreen's effectiveness: Wipe the sunscreens onto one side of zipper sandwich bags – each strength on a separate bag. Label the SPF on each bag. Add a small scoop of UV-sensitive beads to each of the sunscreen bags. Position the beads so that they are in an area of the bag that is coated with a thin layer of sunscreen. Put a small scoop of UV-sensitive beads into an empty bag and then take all of the bags into the sunlight and observe how the beads change. (If you can't see the beads, you have too much sunscreen on the bags and should wipe some off.) Compare and contrast the beads in the different bags—do the beads protected by the lotions change as quickly as the beads in the bag with no sunscreen? Which sunscreen SPF works best? What are two ways that the beads are like your skin when exposed to UV rays from the sun? Remember, everyone should use a sunscreen with at least an SPF of 15.

Extension Idea There are many UV-sensitive products on the market that you can use to make your own UV-detecting tool. Make a bracelet from UV-sensitive beads or give yourself a manicure using UV-sensitive nail polish. When you see your bracelet or nails change color in the sun, think about whether you're practicing good sun safety. You can also make a bracelet to give to a friend and include a short note to share the sun safety message. *See Shopping List for places to buy UV-sensitive products.*

Look It Up Use a dictionary or another reference to look up the following terms to help you learn more about sun savvy terminology. Then develop a quiz or game using the terms and definitions to give to your friends and family to test their sun safety savvy. You may want to create a matching game or a crossword puzzle using the definitions as clues. **radiation, chlorofluorocarbons, ultraviolet, Montreal Protocol, melanoma, malignant, cataract, broad-spectrum**

Sun Protection

Solar Shopping Smarts Sunscreen isn't the only thing you can buy that uses SPF to protect your skin from UV rays. Some clothing and laundry detergent have SPF, too. Take



be outside based on the intensity of the sun's rays and the risk of overexposure to ultraviolet rays. Find out what the five index levels are and what each level means, including the numbers and colors that represent them. Develop a way to teach people what the UV Index is and communicate with them what sun-safe precautions they should take at each level. For at least two weeks find out what the UV rating is for the day and use your project to educate others. Create a short presentation about the UV Index and what information it provides and give it at an upcoming troop meeting or other group setting.

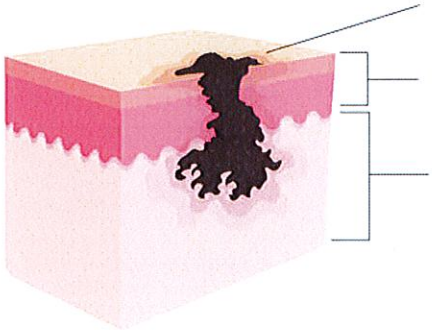
What You *Can't* See *Can* Hurt You Though you can't see UV light, it can do a lot of damage to your body. Too much exposure to UV radiation from the sun or artificial sources, such as tanning beds, can cause your skin to wrinkle, burn and even develop areas of cancer which can make you very sick.

Try this experiment using tonic water and tap water to demonstrate how UV light can be present even though it's not visible. On a sunny day, fill two beakers or similar clear containers nearly to the brim – one with tap water and the other with tonic water. Take the beakers outside and put them on a flat surface in direct sunlight. Hold a piece of black paper or cloth behind the beakers and look closely. Compare the two beakers; do you notice anything different about the color at the surface of the containers? The top portion of the tonic water should glow blue because a mineral in the tonic water absorbs the invisible UV light and then re-emits it as the blue glow we can see. The tap water doesn't contain the same mineral, so even though UV light is also present at the tap water's surface, you can't see it.

Just like you can't always see the harmful UV light, you may not always see the extent of the sun's damage. By the time you notice your skin is suntanned or sunburned, it means UV rays have already damaged and killed some skin cells. Look at the photos of young women's faces on page C2. In regular lighting, the girls' skin appears clear and healthy, but under special lighting the areas of sun damage are clearly visible.

There are different types of UV rays – UVA, UVB and UVC. While most UVC rays don't make it to Earth because they are absorbed by the ozone layer, UVA and UVB each penetrate different layers of skin. Find out what the different elements of the skin are and label the diagram, then add arrows showing how deep in the skin the different types of UV rays penetrate and learn what type of damage they cause. Compare your diagram to the example at www.gscnc.org/sunsafety.html.

Calculate The Protection Rate Test the strengths of sunscreen lotions by getting at least 3-4 lotions with different SPFs. How strong a sunscreen is depends on its Sun Protection Factor (SPF). The higher the number, the longer it takes your skin to burn when wearing it properly.



Sun Savvy

Made In The Shade Sometimes, you can't avoid being outside or you may choose to enjoy time outdoors; either way, you don't want to end up punished by the sun. When you are in the sun, it is important to take appropriate precautions, including seeking shade. Between the hours of 10 am and 4 pm, it is especially important to find cover as the sun's rays are the most direct and strong during that time.

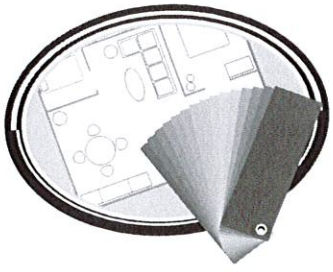
Choose a few places where you and others may spend time outside such as a patio, swimming pool, camp or outdoor seating at a restaurant. Observe each of the spaces during the day and take notes on what types of shade are available. Both natural cover and man-made structures can block the sun's rays and provide areas of shade. If there is shade provided, is it convenient for people to gather in the shady places or do most people stay in the sunnier spots? Pick one location that you think could be most improved by the addition of shade structures and create a new design for the space. You can use graph paper to draw a floor plan of the space and layout of the existing design and then use a different color to show the elements you would add to increase the shade. You can take photos to show the areas you would address, and cut out pictures from magazines or print off the Internet of products and materials you would like to incorporate into the space. You may want to consider different leafy vegetation, awnings, umbrellas or window coverings that filter UV light. Refer to other spaces which have good shade options for inspiration for your redesign.

Extension Idea Share your observations and possible solutions with the owner of the space. If it's a public space, present your findings at a local town or county council meeting or write a letter to the editor about the importance of shade and your suggestions for creating more shady spaces.

Ozone Detective The ozone layer is one protection you have from the sun. Find out what it is, where it is located and why it is important in keeping you sun safe; pay careful attention to what it does to UV rays. You may want to draw a diagram or create a model to help your understanding. Learn what "CFC" is an abbreviation for and why they were originally used. Investigate what common activities and products society uses which deplete the ozone layer and try to avoid them for at least two weeks.

Extension Idea Since 1995, September 16 has been celebrated as the International Day for the Preservation of the Ozone Layer. Research the history of this event. Find out why the United Nations designated this day and the purpose behind its establishment. What is the significance of the date selected and what happened on that date in 1987? Find out if there are any events or activities being planned in your community to commemorate the day and if there are, take part.

UV Intensity The UV Index uses numbers and colors to tell people how dangerous it is to



Sun Safety: Empowering girls and saving lives

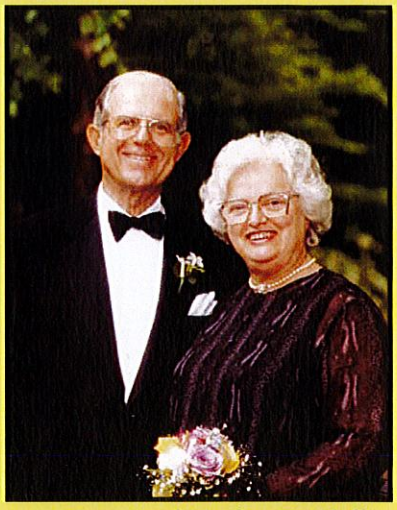
Studies have shown a connection between UV light exposure—whether from the sun or an artificial source—and skin cancer occurrences. Teens make up 2.3 million of the nearly 30 million people who go indoor tanning, and girls ages 10-19 years old make up 90 percent of all pediatric melanoma cases. Melanoma is the most dangerous type of skin cancer, accounting for the most skin cancer deaths.

These scary statistics are just a few of the many reasons the Girl Scout Council of the Nation's Capital, with the generous support of The Gendell Family Foundation, has created the Sun Safety patch program to educate you about the sun's unseen—but dangerous—ultraviolet (UV) rays and empower you to take preventative action to help yourself and others be sun safe.

The Sun Safety Story

By Carin Gendell

A current TV show calls it the "Big C" – cancer. Many families face losing a loved one to cancer, and our family was no exception. My father, Gerry Gendell, valiantly fought melanoma for 18 months before he lost his battle in July 2009, just two weeks after turning 80 years old.



Gerry and Marion Gendell

Like many bereaved families, we wanted to honor our father by educating people about skin cancer, which can strike both young and old. We were shocked to discover that melanoma—the deadliest form of skin cancer—is the second leading cause of cancer deaths among women in their late twenties. As a longtime GSCNC volunteer, I knew that one of GSCNC's former staffers, Teen Program Specialist Jessica L. (Hodgkins) Dovi, succumbed to the disease at only 30 in April 2008.

The natural place for us to start educating girls was in the Girl Scouts. Our family has a long Girl Scout history starting with my mother who loved being a Girl Guide in England. My sisters and I fondly remembered Girl Scout camping and hiking when we were young, but we weren't aware of the dangers of sun exposure. As an adult leader, I knew about the dangers and always encouraged my daughters and their scout friends to use sunscreen during our wonderful adventures outdoors. But the truth is I only worried that the girls would get bad sunburn; I didn't worry enough that they were at risk for melanoma.

Another important reason for honoring my father through Girl Scouts is to remember his commitment to developing leadership skills in young women. As a senior executive at the Procter & Gamble Company, my father was an early advocate for hiring young women into the marketing ranks and developing them into future executives. He mentored numerous young women, including his three daughters, who went on to be successful managers and leaders. It's no surprise that he encouraged his own daughters to join Girl Scouts, one of the few activities in the 1970's that encouraged girls to take on leadership roles.

The Gendell Family Foundation is proud to fund the creation of the Sun Safety program in honor of Gerry. Or greatest hope is to teach girls to enjoy the outdoors safely while avoiding the risks of melanoma so that they can grow up to be outstanding leaders who make the world a better place.

Sun Safety

Low | Moderate | High | Very High | Extreme

Cadette, Senior, Ambassador activities

(You will find patch requirements and Daisy, Brownie, Junior activities at the reverse of this booklet)

This patch program was made possible thanks to The Gendell Family Foundation.