Grade 3

Health Objective 2.06
Recognize and demonstrate proper usage of various methods of sun protection.

Math Objective 2.02
Estimate and measure using appropriate units.
Temperature (Fahrenheit, Celsius)

Materials Needed:

Appendix 1 – UV chart – copies for each student
Appendix 2 – SPF chart – copies for each student
Appendix 3 – Protect Yourself - six copies for small groups
Appendix 4 – Sun Quiz
Appendix 5 – Protect Yourself and Sun Quiz Answer Keys
Appendix 6 – UV Index Today
At least 1 computer with internet access (more are preferable)

Focus:

The teacher will ask students to raise their hand if they think they know a lot about the sun. The teacher will then give the students the Sun Quiz (Appendix 4) for them to complete, allowing them to see if they really know as much about the sun as they had previously thought. After teaching the lesson, the teacher allows the students to change any answers they might have missed.

Teacher Input:

The teacher will give a brief lesson about sun protection (lecture format). The information for the lecture is as follows:

The sun gives off many different types of rays. One of these types is what we see as sunlight. Other types our eyes cannot see at all. For example, infrared rays are invisible, but they are the rays that keep us warm. Another type of invisible ray is called Ultraviolet—or "UV"—rays. These are rays which make the Vitamin D in our skin start working, can kill some types of germs, and can even help to put us in a good mood. They are also very powerful, and can go through clouds.

However, UV rays can be very bad for our skin. After being exposed to these rays our skin starts to tan, and even to get sunburned. Our outer most layers of skin also get a little thicker, and too much exposure to UV rays in our lifetime can cause us to get extra wrinkles. Some people even get skin cancer because they spent too much time in the sun. Therefore, we have to make sure to protect ourselves from UV exposure whenever we are going to spend time in outdoors.

How do we protect ourselves from UV rays so that we don't get extra wrinkles or cancer? There are two different ways. The first way comes natural to us. Our skin helps protect itself from UV rays. When exposed to UV rays our skin starts to make its outer layer thicker. This makes it harder for the UV rays to get in and hurt us. It also produces a chemical that is called melanin. Melanin is what gives our skin the tanned color. It also acts like a barrier to protect the lower levels of the skin, which are easily damaged. But these chemicals alone are not enough to fully protect us from UV rays. Therefore, there are more things we can do to help protect our skin from these rays.

First, we can protect ourselves from UV rays by wearing protective gear, staying in the shade, and wearing sunscreen. Wearing protective gear puts a layer between your skin and UV rays so that the rays can not get through. Protective gear includes wearing clothes, a hat, and sunglasses. But not just any sunglasses will work, though. UV rays can go through sunglasses that do not have special UV protection. When buying sunglasses you should look for a sticker on the lenses which specifically states that it blocks UV rays. Staying in the shade is another way of limiting how much UV reaches your skin. The object that is creating the shade is also blocking UV rays from reaching you.

Though wearing protective gear and staying in the shade helps a lot, the most important way we can protect our skin from the UV rays, is to wear sunscreen. Sunscreen protects our skin by blocking UV rays so that they do not enter our skin. But not just any sunscreen will do. The type of sunscreen that a person needs depends upon how long that person will be in the sun, and on what type of skin they have. Different sunscreens have different levels of Sun Proof Factor, or "SPF". This is a number that—when multiplied by how long one can be in the sun without burning—can be used to calculate how long the sunscreen will be effective. You will be given a chart later to help you determine what SPF you need in different situations. Typically though, the lighter your skin is and the longer you will be outside, the higher the SPF needed. Although the SPF lets you know how long one can be in the sun without burning, it does not take into account other factors. For example, if you are sweating, if you are on the beach or a pool, or if you are drying off with a towel, you could be decreasing how long you can safely stay in the sun. Any of these things can make sunscreen come off. With this in mind, it is very important that every couple of hours you put on more sunscreen. Also, when putting on sunscreen, you should make sure that all the parts of the skin that will be exposed to the sun are covered. This includes lips, backs of knees, the tops of ears, and even parts of the scalp (the skin under your hair).

The important thing to remember is that anytime you are going to be where UV rays can reach you, you need to use something to protect yourself. Whether it is protective gear, staying in the shade, or wearing sunscreen, there needs to be a barrier between your skin and the UV rays. That way when you are older you will not have to worry about getting extra wrinkles or skin cancer.

Practice & Assessment:

Activity 1

The class will be broken up into six groups. Each student in the group will have a UV chart (Appendix 1) and an SPF chart (Appendix 2). Each group will need have just one copy of Protect Yourself (Appendix 3). In their individual groups the students will use the UV and SPF charts to determine what kind of protection is needed from the sun for the scenarios given. The objective of the activity is to have students practice three things:

1- Determining how they should protect themselves from the sun by referring to a UV index chart.
2- Determining what kind of sunscreen to use by referring to a SPF chart.
3- Determining by looking at the temperature in Fahrenheit what kind of article of clothing would be needed as protective gear (sweater, jacket, or

t-shirt). The objective is for students to familiarize themselves with using Fahrenheit readings and how to protect themselves from the sun for those temperatures.

Activity 2-
Each student will receive a copy of UV Index Today (Appendix 6). All the students will take turns, individually using the computers with internet access to find the UV index that day in the city of their choice. The directions for how to do this are on the worksheet. After they get the information they will fill out the sheet and write a story. In the story they will live in their chosen city and will tell about what activities they will be doing outside that day. They will also have to state the UV index, and what measures they are going to take in order to protect themselves from the sun while performing those activities. The objective of this activity is to teach students where they can go to find the UV index for where they live and reinforce methods of sun protection.

References:

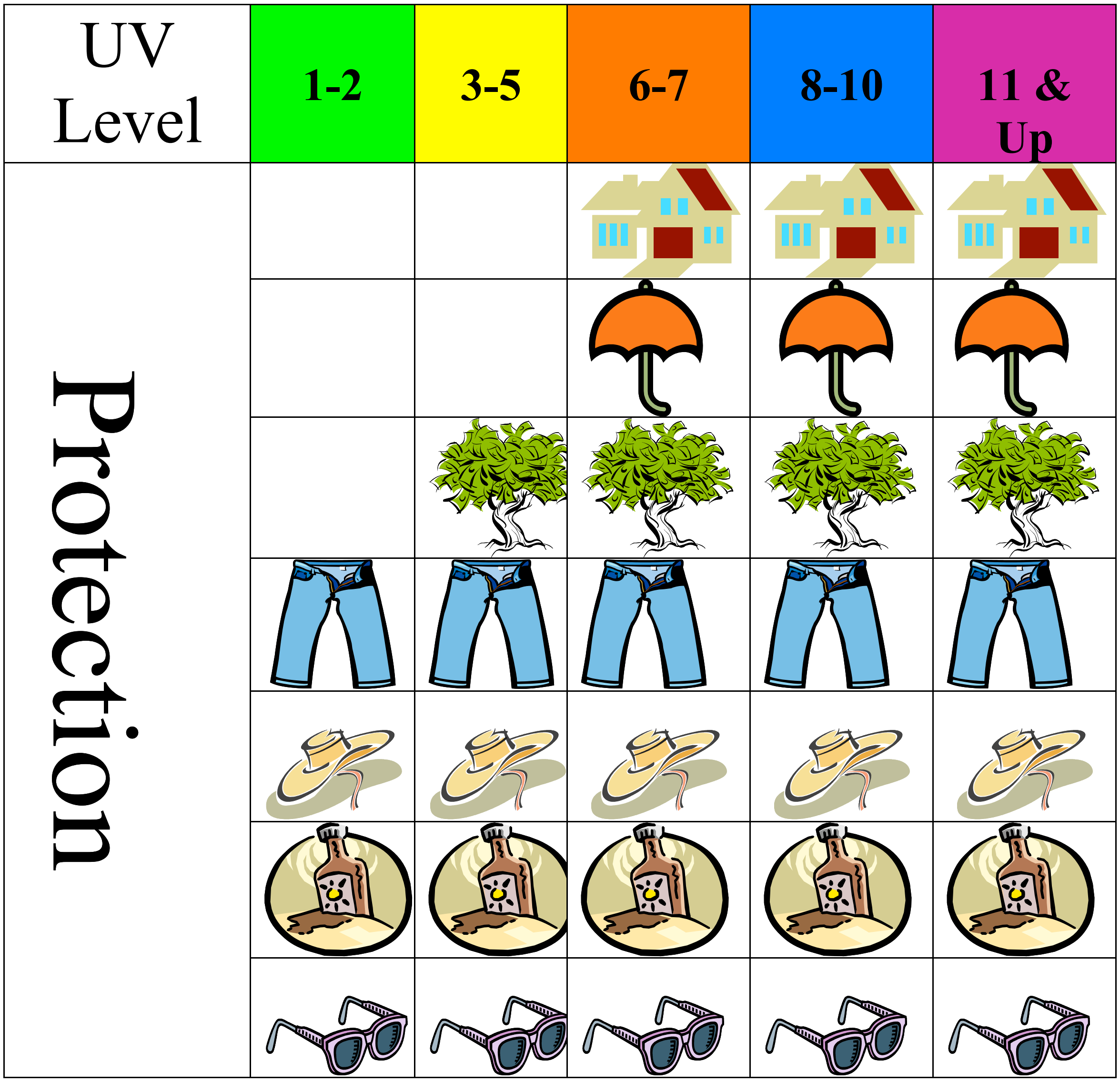
- "OSH Answers: Skin Cancer and Sunlight." Canadian Centre for Occupational Health and Safety. 27 Aug 1999. 14 March 2005. http://www.ccohs.ca/oshanswers/diseases/skin_cancer.html

- "Protect Yourself and Your Family." Coppertone. Schering-plough Health Care Products Incorporated. 9 Feb 2005, http://www.coppertone.com

- "Sun Protection" Loreal. 10 March 2005, http://www.loreal.com/_en/_ww/index.aspx

- "Sun Safety." Banana Boat. Sun Pharmaceuticals Corporation. 9 Feb. 2005 http://www.bananaboat.com/safety.html

- "Sun Safety Tools." Coppertone. Schering-plough Health Care Products Incorporated. 9 Feb 2005 <http://www.coppertone.com>.



Key:

Stay inside (11 – 4)	Wear protective clothes	Stay in the shade
Wear a hat	Wear UV safe sunglasses	Use sunscreen
Stay in the shade around noon		

SPF Chart

Hours in the Sun	Skin Type				
	Very Fair Always burns	Fair Burns mostly, but tans slowly	Light Burns first then tans	Medium Sometimes burns	Dark Almost never burns
1	15 SPF	15 SPF	8 SPF	8 SPF	8 SPF
2	30 SPF	30 SPF	30 SPF	15 SPF	8 SPF
3	50 SPF	30 SPF	30 SPF	15 SPF	15 SPF
4	50 SPF	50 SPF	30 SPF	30 SPF	15 SPF
5	50 SPF	50 SPF	50 SPF	30 SPF	15 SPF

Protect Yourself

For each of the following scenarios, use the SPF and UV Charts to answer the questions. A Fahrenheit reading is also given. List which kind of clothes (t-shirt, jacket, or sweater) would be needed to protect that person from the sun.

1. Anita is fair in skin type. She is going to play outside for 3 hours. The UV index today is moderate and the temperature outside is 95°F.

What should Anita wear to protect herself from the sun?

What SPF sunscreen should Anita use?

Since the temperature outside is 95° F, what kind of protective clothes should Anita wear?

2. George is medium in skin type. He is going to play outside for 1 hour. The UV index today is high and the temperature outside is 35°F.

What should George wear to protect himself from the sun?

What SPF sunscreen should George use?

Since the temperature outside is 35° Fahrenheit, what kind of protective clothes should George wear?

3. Alex is very fair in skin type. She is going to play outside for 5 hours. The UV index today is low and the temperature outside is 50°F.

What should Alex wear to protect herself from the sun?

What SPF sunscreen should Alex use?

Since the temperature outside is 50° F, what kind of protective clothes should Alex wear?

The Sun Quiz

True or False

Write a T or an F in the blank.

___ 1. A lot of sun is good for your skin.

___ 2. Wearing sunscreen is a good way to protect your skin from the sun.

___ 3. You can get sunburned on a cloudy day.

___ 4. The sun produces rays that damage our skin.

___ 5. Sunscreen has what is called SPF. SPF stands for Some Protection Film.

___ 6. Sunscreen should be put on just once a day.

___ 7. There are ways other than sunscreen to protect yourself from the sun.

___ 8. The bad rays from the sun are called UV rays.

___ 9. Sunburn shows up immediately after you are done spending time in the sun.

___ 10. All sunglasses protect your eyes from the sun.

Protect Yourself

Answer Key

1. Anita should stay in the shade near midday, use protective clothing, wear a hat, use sunscreen, and wear sunglasses.

   Anita should wear sunscreen with at least 30 SPF.

   95° F – t-shirt

2. George should stay in the shade, use protective clothing, wear a hat, use sunscreen, and wear sunglasses.

   George should wear sunscreen with at least 8 SPF.

   35° F - jacket

3. Alex should wear protective clothes, wear a hat, use sunscreen and wear sunglasses.

   Alex should wear sunscreen with at least 50 SPF.

   50° F - sweater

Sun Quiz
Answer Key

1. False
2. True
3. True
4. True
5. False
6. False
7. True
8. True
9. False
10. False

The UV Index Today

On the internet, go to the webpage http://www.coppertone.com. Once at this page look for the list on the left hand side. Here you will click on the "UV index" link. This will take you to a window where you can type your zip code or pick from a list the name and state of where you want to live. Click on the down arrow where it says Select a City. Pick the city of your choice and then click on the orange circle with the word Submit written on it. With the results answer the questions:

1. **What city and state did you chose?**

   _____

2. **What is the UV index today?**

   _____

Write a story telling the reader where you are living, what the outside activities you have planned for the day, what the UV index is today, and what you are planning to do to protect yourself from the sun.