**Program Objective**

The Canadian Cancer Society has designed this program to educate on how to protect ourselves from the dangers of ultraviolet rays and the risks they propose to human health. The program encourages students to follow the Canadian Cancer Society’s SunSense guidelines. The information in this program is valuable to those of all ages but the presentation is specifically geared towards grade one to three students.

In order to keep participants aware and reminded of the information they gain through this lesson the UV bead bracelet serves as a take away message and reminder to follow SunSense guidelines. Students will be able to wear their UV beads throughout the summer and have them serve as a visual reminder to take extra precautions when they know the UV index is high.

It is recommended to keep the lesson to 20 minutes in order to keep participants’ attention and the messages can then be reinforced through follow up activities (see end of lesson plan).

**Students will learn:**

- The importance of the sun
- The damaging effects of the sun
- What ultraviolet rays and the UV index are
- How to stay safe in the sun

**Presentation Tips**

This lesson plan serves as a guideline. You know your students best therefore, feel free to alter the lesson format as you wish to fit your teaching style.

Explain that the lesson will only take about 20 minutes and includes a sun safety craft and an opportunity to go outside at the end.

The lesson plan includes several questions to keep children engaged throughout the lesson. Avoid yes or no questions to encourage students to give more detailed responses. This way the information is more impactful because the students provide some of it themselves.

The information provided is appropriate for most age groups, however for more in depth information see the SunSense grades 4-6 lesson plan.
Sun Safety

Research shows that childhood exposure to ultraviolet radiation (UVR) is a contributing factor to the development of skin cancer later in life. Due to children being at school during peak sun and UV hours (11am-3pm) it is important that schools play a role in sun safety messaging and reinforcement.

Skin cancer is the most common type of cancer in Canada and one of the most preventable. While the cause of many cancers is unknown, the most common cause of skin cancer is multiple sunburns and excess UVR exposure. Young people under the age of 18 are at the highest risk, in fact 80% of people’s exposure to UVR occurs before the age of 18.

As Canadian children are spending more time indoors in front of screens and childhood obesity rates are soaring, it is important not to discourage children from going outside. Instead we want to encourage children to use SunSense to play outside safely by establishing sun safe habits. It is imperative that schools are committed to helping reinforce these habits as school is where children spend the majority of peak sun hours and this sets the tone for the habits they will carry throughout the summer.

Information for Teachers

Skin cancer rates are greatly increasing in Canada with an estimated 7200 new cases of melanoma in 2017 alone. Although Canada does experience long winters and cooler temperatures it is important to know that the sun we receive is strong enough to cause skin damage and premature aging. The good news is that skin cancer is highly preventable.

Skin cancer is classified into either melanoma or non-melanoma. While melanoma is less common than non-melanoma it is far more deadly and the most common cancer for young people aged 15-29. UVR from overexposure to the sun or indoor tanning beds is the main risk factor for skin cancers. It is estimated that young people who get 5 or more severe sun burns have double the risk of melanoma skin cancer.

You need the vitamin D that your skin produces when exposed to sunlight, however you do not need a tan to get benefits from the sun. For most people the exposure that you get to the sun when going about your daily life is enough. Getting vitamin D from supplements or your diet is much safer than through UV exposure.

There are three types of UV rays; UVA, UVB, and UVC. UVA rays make up 95% of the sun’s natural light, these are the rays that can cause premature aging. UVB rays make up 5% of the sun’s light and these are the rays that can cause your skin to burn. UVC rays are the strongest of the three but thankfully are absorbed by the Earth’s atmosphere. When choosing a sunscreen, it is important to choose a broad-spectrum sunscreen as both UVA and UVB rays have potential to cause skin damage.

UV rays can get through clouds, fog, and haze, meaning they can still harm you. Water, sand, concrete and especially snow can reflect and increase the sun’s rays. It is important to check the UV index regardless of fog or cloud and take precautions if the UV index is above 3, even in the winter.

<table>
<thead>
<tr>
<th>UV Index</th>
<th>Exposure</th>
</tr>
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<tbody>
<tr>
<td>0-2</td>
<td>Low</td>
</tr>
<tr>
<td>3-5</td>
<td>Moderate</td>
</tr>
<tr>
<td>6-7</td>
<td>High</td>
</tr>
<tr>
<td>8-10</td>
<td>Very high</td>
</tr>
<tr>
<td>11+</td>
<td>Extreme</td>
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## Curriculum Connections

### Grade 1

| **Health & Physical Education** | A3.2. Identify environmental factors that pose safety risks during their participation in physical activity (too much sun exposure will cause a sunburn)  
C3.1. Demonstrate an understanding of how to stay safe and avoid injuries to themselves and other in a variety of situations, using knowledge about potential risks at home, in the community and outdoors (weather and sun hazards) |
|---|---|
| **Science** | Understanding Life Systems  
3.4 Describe the characteristics of a healthy environment, including clean air and water and nutritious food, and explain why its important for all living things to have a healthy environment (shade)  
Understanding Earth and Space Systems  
2.3 Investigate the changes in the amount of heat from the sun that occur throughout the day and in the various seasons (UV index)  
3.6 Describe how humans prepare for and/or respond to daily and seasonal Changes |

### Grade 2

| **Health & Physical Education** | A3.2 Identify ways to protect themselves and others, including those with medical conditions, from safety risk while participating in physical activity. (apply sunscreen, wear a hat etc.)  
C1.1 Demonstrates an understanding of practices that enhance personal safety in the home and outdoors (using UV protection) |

### Grade 3

| **Health & Physical Education** | C2.2 Apply their understanding of good safety practices by developing safety guidelines for a variety of places and situation outside the classroom (guidelines for sun safety routines) |
Grades 1-3 Lesson Plan

Importance of the Sun

Q. What are your favourite summer activities?
A. Students will list a variety of activities ie; camping, biking, swimming, etc.

Those are all fun things to do and lots of them are outside in the sun!

Q. What are some ways the sun is helpful?
A. Provides light, helps plants grow, keeps you warm, vitamin D, solar energy, etc.

Q. What happens when you get too much sun?
A. Sun burn, heat stroke, skin cancer.

Q. Raise your hand if you have had a sunburn before?
"Students raise hands"

Q. What happens to your skin when it burns?
A. It turns red, hurts, peels

Q. Do you know what part of the sun gives us a sun burn?
A. Ultraviolet (UV) rays

Optional Videos: Crash Course:
Here comes the sun: https://youtu.be/6FB0rDsR_rc
Crash Course: Seasons and the sun: https://youtu.be/b25g4nZTHVM

UV index

Q. So how do we know when the UV rays are strong so we can protect ourselves?
A. We can’t see or feel the UV rays so just like we check the temperature before we go out for the day we need to also check the UV index so we know when to protect ourselves.

Q. Raise your hand if you checked the temperature today.
A. "Students raise hands"

Q. Keep your hand up if you checked the UV index today.
"Most hands will go down"

It’s important to check the UV index just like you check the weather for the day so that you know what to wear to protect yourself!
The UV index is a scale from 0-11+ that tells us how strong the sun’s rays are that day. The UV index is what tells us the level of precaution we need to take when being in the sun that day. If the UV index is 3 or higher it will be included in the weather. To check the UV index you can listen to the radio, check the internet, or watch the weather channel. Once you know the UV index you can prepare for the day.

If the UV index is between 3 and 7 you should take sun safety precautions and seek shade from 11am-3pm. If the UV index is above 8 you NEED to take sun safety precautions and should avoid being outside.

Optional: Talk to the students about the ways animals behave in the heat of the day. The website http://www.foundation.sdsu.edu/sunwisestampepede/ may provide useful background information. Where do dogs like to be on a hot day? What do they do? Why are birds busy in the morning and evening, but quiet in the middle of the day? Get them to make some generalizations about animals in summer. Ask whether people are always as smart as animals when it comes to the sun. Point out that temperature and UV radiation are not always linked: even on a cool day, UV radiation levels can be high.

Q. What are some ways you protect yourself from the sun?
A. Hat, sunscreen, sunglasses, etc.

Those are all great ways to protect yourself, today we’re going to learn about the 5 S’s that will keep you safe in the sun!

SEEK Shade or Create Your Own

Q. Do you think you can get a sunburn when it’s cloudy?
A. Yes you can! Even when it’s cloudy the sun’s UV rays can sneak through the clouds.

So if you’re outside and you know the UV index is over 3 you should try to find shade.

Q. What are some examples of places you can find shade?
A. The playground, under a tree, by a building, etc

And if there isn’t shade you can always bring along your own shade by bringing an umbrella, this is a good idea if you’re going to spend the day at the beach.

Q. What time do you think the sun’s rays are the strongest?
A. Between 11am and 3pm

Here’s a rhyme to help you remember when you should play outside:

“When your shadow is short, stay out of the sun. When your shadow is tall, go out and have fun!”

*Have kids repeat the rhyme*

SLIP on Protective Clothing

(Different types of clothing can be used as a teaching aid)

When you’re getting dressed to go outside you should choose long sleeves and long pants to protect your skin. Your clothes can be loose fitting but you shouldn’t be able to see through the fabric (fabric should be tightly woven). You can also look for clothing with UPF that means it has extra sun protection, but regular clothing works as well.
**SLAP on a Hat**

*Use a baseball and sun hat as teaching aids*

Q. What kind of hat do you think would protect you better from the sun? A baseball hat or a bucket/sun hat?

A. A bucket/sun hat will protect you better because it has a wide brim to protect your ears and the back of your neck as well as your face.

**SLOP on Sunscreen**

*(SPF 30+ and SPF lip balm as teaching aid)*

Q. Does anyone know how long before going outside you should put on your sunscreen?

A. You should put on sunscreen at least 20 minutes before going outside, but if you forget it’s not too late to put some on when you’re already outside.

Q. How often should you put on more sunscreen?

A. Follow instructions on the label but if you’re swimming or sweating you should reapply at least every 2 hours.

You should always choose a sunscreen with an SPF (sun protection factor) of at least 30 and make sure to put it on before you put on bug spray. Also, make sure you protect your lips by wearing lip balm with an SPF.

**SLIDE on Sunglasses**

*(Different styles of sunglasses may be used as teaching aid to demonstrate the best type)*

Your eyes need to be protected just like your skin! So, wearing sunglasses is important. You should choose sunglasses with dark lenses and thick sides to block the sun from hurting your eyes.

Optional Videos:
Slip slop slap seek slide: https://youtu.be/FzA47J7QsVk

**Summary**

So, this summer when you’re heading out in the sun don’t forget to check the UV index and if it’s above 3 remember to SLIP on protective clothing, SLAP on a hat, SLOP on some sunscreen, SEEK shade, and SLIDE on some sunglasses.

**Conclusion**

It’s great to have fun in the sun but you need to be prepared and practice sun safety!

**UV Bead Bracelet**

Since it’s hard to know when the UV rays are strong we are going to make a tool to help you know when to protect yourself. *Hold up premade UV bead bracelet* These special UV beads will turn from white to purple when they are hit by UV rays to tell you to protect yourself. However, it’s still important for you to check the UV index before leaving the house so that you’re properly prepared to spend time outside.

Hand out packages of beads and have kids make bracelets, see the following pages for activities and experiments using the UV bead bracelets.
Activities

Testing UV Beads

Once bracelets are finished there are a variety of both indoor and outdoor experiments that can be done to test the beads.

Outdoor Activities

Test #1: What clothing protects us from the sun?
While outdoors, have the kids hide the bracelets under different articles of clothing for 20 seconds at a time. After the 20 seconds, bring the bracelets out from hiding. Has the UV light been able to get through the clothing?

Test #2: Shade
Have the kids gather in the shade and watch the beads turn pale due to the weaker UV light.

Test #3: Can UV light travel through water?
Materials required: Pail, water, towel
Have kids drop their bracelets in the water and watch to see if the colour fades. Make sure sunlight can reach the pail.
UV rays can travel through water. Remember water does not protect you from the sun so be sure to protect yourself when swimming.

Indoor Activities

Why do the UV beads turn white indoors? (because there are no UV rays)

Test #4: Flashlight
Materials required: flashlight or lamp
Have children predict if the flashlight/lamp on the beads will make them change colour. Shine the light on the beads to show them that the beads will not change colour because there is no UV light present.

Test #5:
Have children hold their bracelets up to the window and observe what happens to the beads. The beads will turn a pale purple as some UV rays do come through the window. It is important to protect yourself on long car rides!

SunSense Trivia
SunSense trivia questions are included in lesson plan. Students can either fill out the worksheet or you could have a mini trivia tournament.

SunSense Crossword and Word Scramble
Crossword and word scramble included in lesson plan kit.
Design a Poster/Flyer about Sun Safety
Have students create posters and flyers about sun safety (ie; sun safe practices, the 5 S’s, danger of UV rays, etc.) to put up around the classroom or in the school hallway to inform others!

Style Up Your Sunscreen!
Materials required: sunscreen, art supplies such as pompoms, pipe-cleaners, googly eyes, and glue
Have students bring in a bottle of sunscreen each to decorate. They can turn it into a bug or a shark or just decorate it with their name and stickers.
See video here: https://www.youtube.com/watch?v=O7Xmdn3etZo

Become Sun Scientists
Materials required: Newspaper, fruit, construction paper, scissors
Make predictions and try some of the following experiments:
   - Place some newspaper in direct sunlight and another piece in a dark cupboard.
   - Place a fruit in direct sunlight and another piece in the shade, both outdoors. A banana works well.
   - Place some interesting shapes on a piece of coloured paper in direct sunlight and place a similar grouping in a dark cupboard.
Talk about how the sun caused the changes that were witnessed.

Make shade!
Materials required: seedling, shovel, watering can, anchors and string
Plant a tree in the school yard that will eventually provide shade for the children to play in. Explain that playing in the shade between 11am and 3pm is safest because UV rays aren’t as strong in the shade. Students can help dig the hole and water the tree after, you may need to anchor down the tree to ensure it grows straight. Contact your local nursery to find out what type of tree is best for your area.

If you require further information or have any questions please contact the Canadian Cancer Society toll-free at: 1-888-939-3333 or visit www.cancer.ca