

Sun Safety Meets Math

Objective Students will apply their knowledge of geometric properties, fraction language, and the sun's dangers to demonstrate the need for sunscreen.

Materials

- Sun Protection in Action poster bit.ly/2N5g3um
- Shady Shapes activity sheet
- Chart paper
- Markers
- Dark construction paper
- Notebook paper
- SPF 30+ sunscreen sticks (sunscreen lotion is not recommended for this experiment)

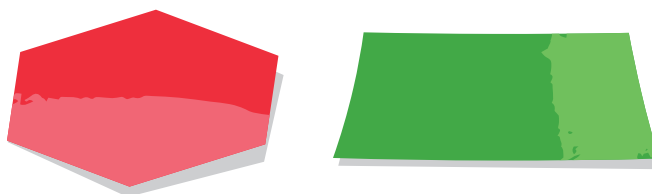
Steps

1. Divide chart paper into columns to create a Sun Safety K/W/L chart (Know/Want to Know/Learned).
 2. Ask students to think about sun safety. Complete the first two columns of the K/W/L chart as a class. "W" examples could be "Do I need to wear sunscreen if I don't have light skin?" or "Do I need to wear sunscreen in the winter?" Include questions about all sun-safety behaviors.
 3. Read the Sun Protection in Action poster, particularly the "How Can You Be Sun Safe?" portion. Lead a class discussion on the facts from the poster, including the harmful effects of the sun and how to avoid them. Emphasize the importance of sunscreen, shade, and protective clothing. Explain that the sun is directly overhead from 10 a.m. to 4 p.m. and shadows are shorter (or there is no shadow). The sun's rays are more intense and harmful at this time. Update the K/W/L chart and keep it for when the class completes the activity sheet.
 4. Tell students you're going to do a fun experiment with sunscreen, but first you want to review what they know about geometry. Have them identify some shapes they see in the room and support their answers. For example, "The chart paper is a rectangle because it has four sides and four corners, or angles."
 5. Briefly review basic fractions as well. Ask a student volunteer to fold a piece of paper in half. Ask another to fold it into thirds, and another to fold it into fourths. Have the students point out $\frac{1}{2}$ of the folded paper, $\frac{1}{3}$, and $\frac{1}{4}$.
 6. Distribute the Shady Shapes activity sheet and the rest of the materials. Tell students they will be doing an experiment to see what effect the sun's rays have on paper, and how sunscreen can make a difference. The best approach is for students to use the sunscreen stick to apply a thin layer of sunscreen directly to the paper. You may wish to have students tape their shapes onto another sheet of paper that they label with their names. It takes approximately two hours for results to appear; it's recommended that you wait until the end of the next school day for maximum effect.
TIP: If you leave the papers outside, be sure to weigh them down with rocks so they don't blow away!
 7. After the experiment is completed, reconvene to discuss the results as a class. Have students complete question 5 on the Shady Shapes activity sheet. Encourage them to use mathematical terms in their discussion. For example, "Two-thirds of the square faded, but the third with sunscreen on it did not fade."
- Explain to students that the side of the paper without sunscreen faded or was damaged and is much like the skin, which can get damaged or burned from too much sun exposure without sunscreen. The takeaway should be that the sun's rays are powerful!

Extension

Plan a "Be Sunbeatable" Day

Have students write about their "Be Sunbeatable" day. Drawing inspiration from the Who's Ready for the Sun? activity, they should choose an outdoor place they'd like to go and create a diary of their planned activities for at least three different times during the day. Students should explain each activity and how they would stay safe from the sun. They can illustrate the activities and use the facts from their Sun Safety K/W/L charts to inform their work.



Name: _____

Shady Shapes

See the difference sunscreen makes with this fun math-and-science experiment.

DIRECTIONS

1. Cut out the shapes below. Trace each onto dark paper.
2. Find the shape with six sides, called a _____. Fold it in half ($\frac{1}{2}$). Write an "S" (for sunscreen) on one half. Use your sunscreen stick to add a thin layer of sunscreen to that half.
3. Find the shape with four angles, called a _____. Fold it into thirds. Write an "S" on one-third of the shape. Using your sunscreen stick, add a thin layer of sunscreen to cover that third.
4. Place your shapes in the sun. What do you think will happen to the shapes? Why? Plan to check on your shapes tomorrow.

5. Now that it's the next day, what do you see? How is this connected to what happens to our skin when we use sunscreen?

CUT THESE OUT

