

SUMMER SUNSCREEN SCIENCE!

During hot summer days in the sun, it's easy to develop a tan or sunburn without noticing. Try this sunscreen experiment to directly compare the effects of wearing sunscreen vs. wearing no sunscreen.

SUPPLIES:

2 pieces of black construction paper

Sunscreen

A paintbrush or cotton ball

A black pen or marker

Sunlight

INSTRUCTIONS:

1.



Fold each piece of construction paper like a book. Open the pieces and lay them flat so you can see the crease running down the middle of each.

2.



Squeeze a little bit of sunscreen on a paintbrush or cotton ball. Lightly dab the sunscreen on one half of the paper, leaving the other half untouched. Leave a few spots without sunscreen.

3.



Lay out your second piece of paper. Use a pen or marker to make a small black dot on the top corner of one section. This will be the section that receives extra sunscreen applications throughout the day. Squeeze a quarter-sized glob of sunscreen onto each half and use a paintbrush or cotton ball to thoroughly coat the entire areas. Add more sunscreen if needed.

4.



Gently carry the papers outside and set them down in a sunny area. If it's a windy day, you can place rocks on the corners of the papers to keep them from blowing away. Reapply sunscreen to the section you marked every hour and a half.

CRITICAL THINKING

- Think about the way sunscreen has been applied (or not applied) to the four sections of paper. What real-life situations do the sections represent?
- Predict what each section of paper will look like after sitting out in the sun for the day.
- How does each section of paper look at the end of the day? What are the differences? Are there any similarities?
- What does this experiment teach us about the importance of using sunscreen?
- Which section represents the way sunscreen should be applied to your body?

One thorough coat of sunscreen

One thorough coat of sunscreen plus reapplications



No sunscreen

Dabs of sunscreen

WHAT HAPPENED?

Construction paper gets its color from dye, which is responsive to sunlight. When colored paper is left out in the sun, the dye undergoes a chemical reaction as it absorbs the sun's ultraviolet (UV) rays. The UV rays damage the paper and cause it to fade.

In this experiment, the construction paper represents our skin, which can also become damaged when exposed to the sun's ultraviolet radiation. When left unprotected, our skin also goes through a chemical reaction that hurts our molecules and leaves us with a bright red sunburn. Duh!

CRITICAL THINKING

- What is melanin?
- Black paper fades in the sun, but skin gets darker. Why is this?