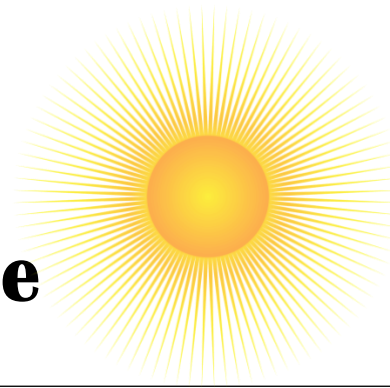




# DIY Air Force Activities: Sunscreen Science



## Materials:

- 4 plastic sandwich sized ziplock bags
- black construction paper
- white construction paper
- tape
- 3 different SPF's of sunscreen (you could also test different brands with the same SPF!)
- paper and pen or pencil

\*\*\*A phone camera is also useful to track changes but is not necessary.



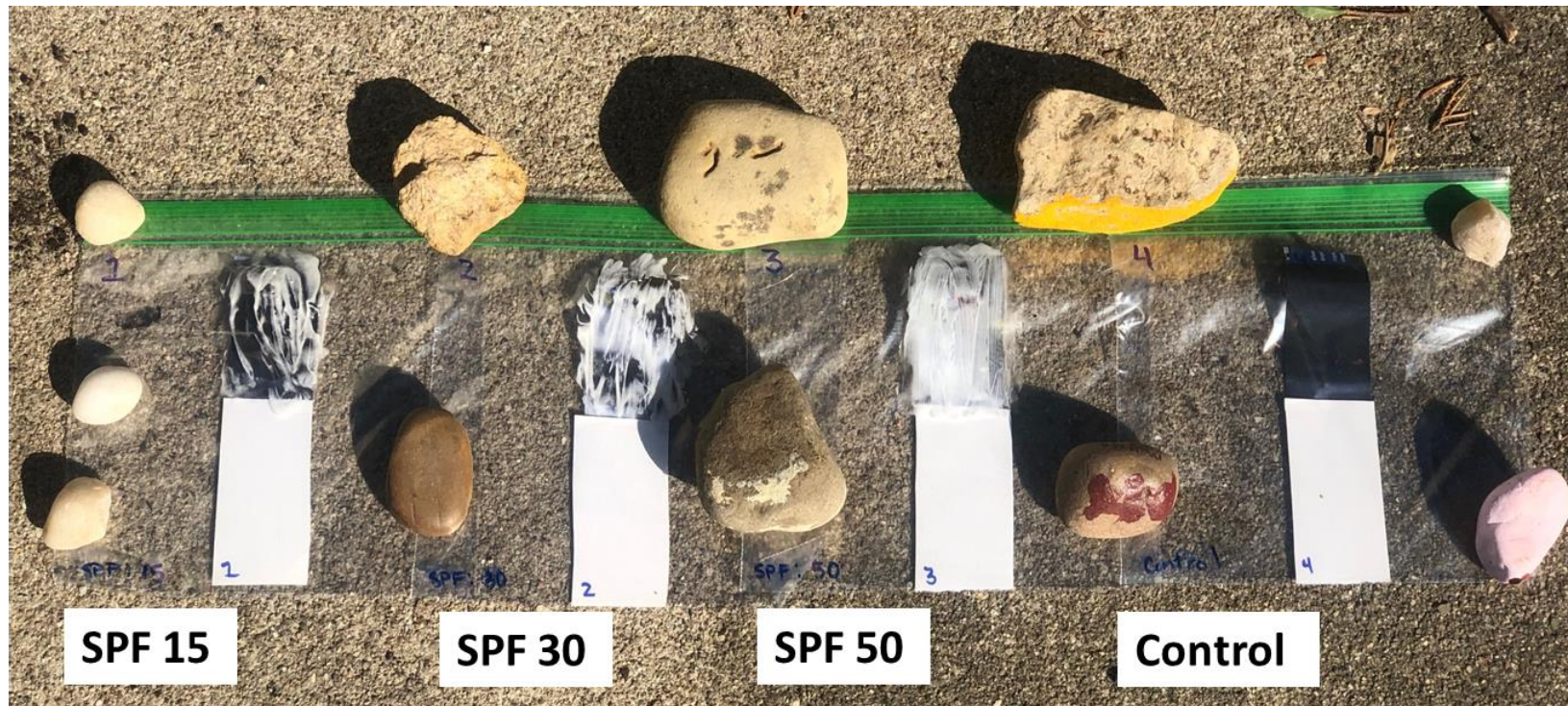
Playing outside on a beautiful sunny day is wonderful! But be sure to protect your skin! Did you know that the sun's rays can be harmful? Ultraviolet (UV) radiation can damage your skin. Repeated sunburn can lead to wrinkles, leathery skin, and even cancer later in life! But don't fear, we can take precautions to protect our skin while still enjoying the beach and all our favorite outdoor activities. Sunglasses can be used to protect our eyes, and hats and clothing that covers our skin is are also useful. When our skin is exposed we can protect ourselves with sunscreen! The ingredients in sunscreen either block and scatter the incoming rays (physical barrier) or absorb them before they can harm our skin (chemical barrier). Most sunscreens contain a combination of both working together. The following experiment will allow you to test the amount of protection different types of sunscreen provide.

## Directions:

1. Cut 4 strips out of the black construction paper, each about 5 inches long and 1-2 inches wide.
2. Cut out strips of white construction paper the same width but  $\frac{1}{2}$  the length. Number the strips 1-4.
3. Secure the white construction paper over top the black construction paper using a small loop of tape (see back of this page) so that the bottom half of the strip is covered.
4. Place your strips inside your plastic bag, secure with another small loop of tape so they will not slide around and close the bag.
5. Number your bags from 1-4. On your paper, record what sunscreen you will apply to which bag. Now cover the outside of the first 3 bags with a thin layer of the assigned sunscreen over the black paper section. The 4<sup>th</sup> bag is your control and should get no sunscreen.
6. Lay your bags outside in direct sunlight. You may need to weigh them down with some small rocks in the corners.
7. Check on them every few hours and record your observations, you can also take a picture!
8. At the end of the day, bring the strips inside. Remove the white construction paper cover. How much did the strips fade? What sunscreen worked the best?

## Air Force Associations:

The Air Force takes health and safety very seriously! June is highlighted as National Safety Month and many bases will release tips on sun protection. Recommendations include covering up, drinking plenty of fluids, seeking shade, wearing a hat, and applying sunscreen! <https://www.robins.af.mil/News/Features/Display/Article/840426/as-temperatures-soar-protect-yourself-from-suns-uv-rays/>



## What is SPF????

The term SPF means Sun Protection Factor. It is a measure of how much protection the sunscreen will provide from the sun's harmful rays. The number is calculated as follows: if your skin would burn in the sun after 10 minutes, SPF 30 would keep you from burning for about 30 times longer, or 300 minutes. An SPF of 15-30 is considered moderate protection, and anything above 50 provides a high level of protection.

\*\*\* Create a loop of tape as shown to the right to adhere your construction paper. Use another loop to stick your strip to the inside of your bag so it does not move around!

