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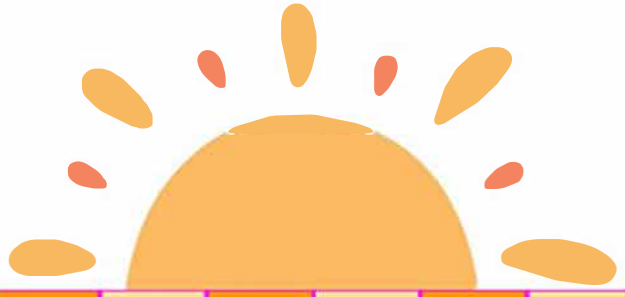
Sunscreen Showdov

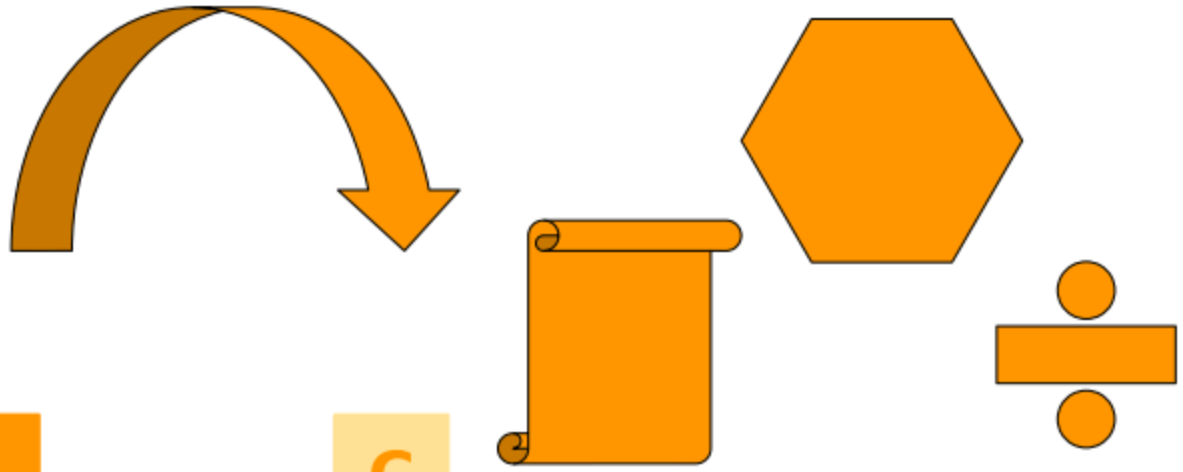
The Battle of the Sunscreens



Problem

So, everybody knows that the sun is a flaming ball of fire, very far away. But not everyone knows the effect that is has on your skin. The sun's radiation penetrates deep into the skin barrier, and even reaching your skin cells which can lead to skin cancer later in life, 3rd degree sunburns, and the inability to touch your skin. So, to protect our skin the best, we need to know what the best is.

Variables



IV

Independent variable

- Sunscreen
- Cream
- Spray
- Stick

DV

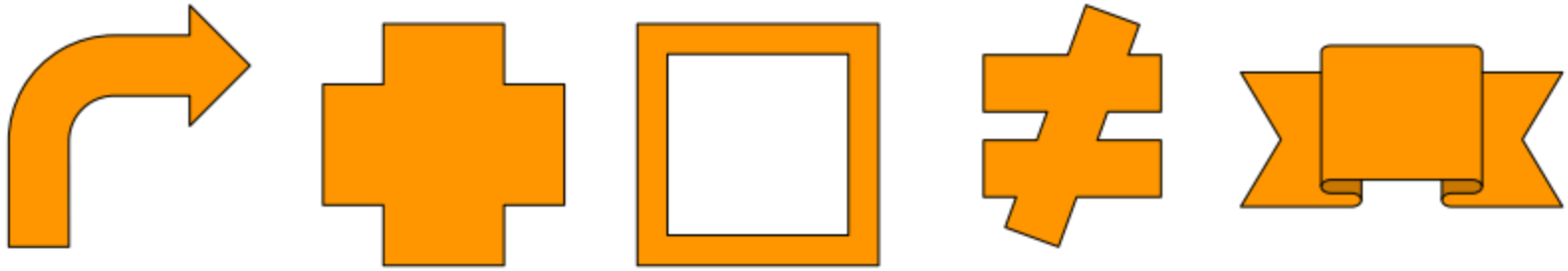
Dependent variable:

- How white the paper is/how well the sunscreen protected the photosensitive paper.

C

Control variables:

- SPF level
- Same amount of sunscreen applied
- Same weather (sunny, partly cloudy, ect.)
- Same brands of sunscreen
- Time of day
- Location



Research

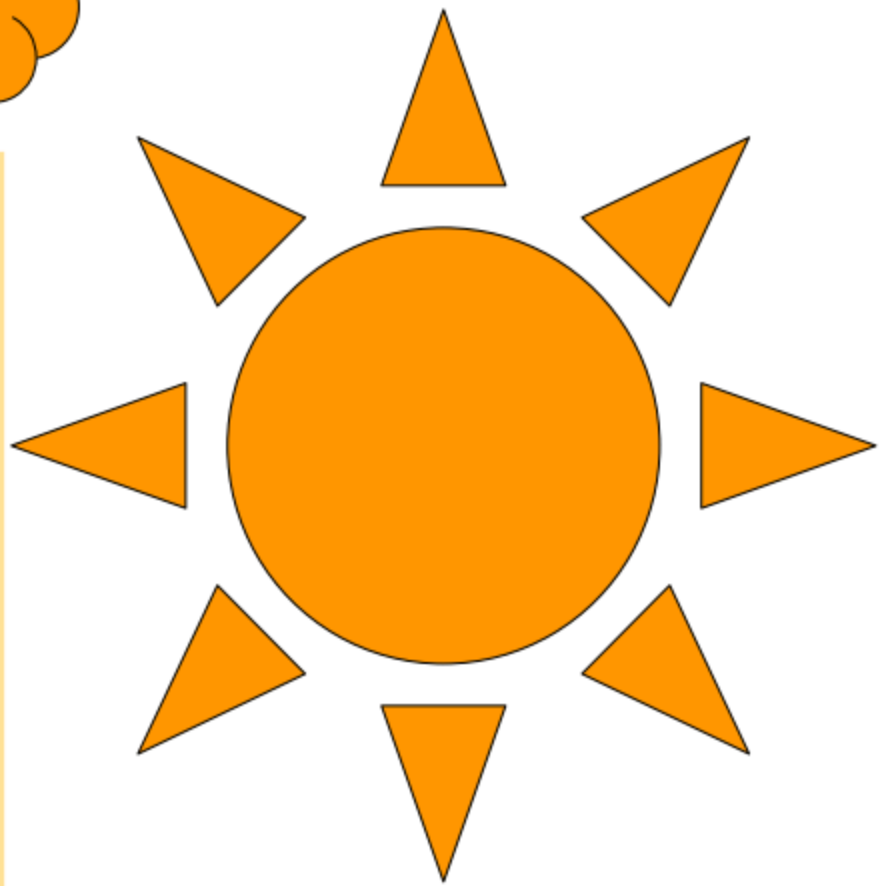
Three facts learned are higher number SPFs last the same amount of time as lower number SPFs, when you put sunscreen on every day you age less, and that some sunscreens are contributing to coral bleaching and fading coral reefs all over the world, so make sure that your sunscreen is reef safe. This is important for our project because we are focusing on which sunscreen prevents burns the best.

Sources:

1. Source 1
2. Source 2
3. Source 3

Vocabulary Words

- UVA- light that penetrates deep into the skin
- UVB- ultraviolet radiation up to 280-320 nanometers
- SPF- sun protection factor
- Broad spectrum- denoting antibiotics and pesticides
- Ultraviolet- electromagnetic radiation



Hypothesis

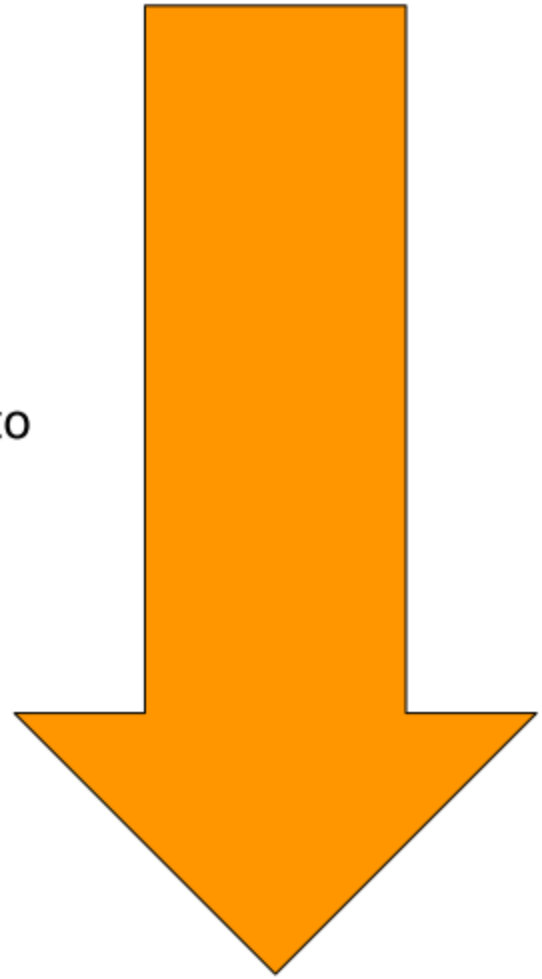
If we test all sunscreens on photosensitive paper then we think that the photo sensitive paper with the cream sunscreen will be the most white because we think it will give the most coverage.

Materials

- Photo sensitive paper
- Banana boat cream sunscreen
- Banana boat spray sunscreen
- Banana boat stick sunscreen
- Paper towels
- water/tub

Procedures

1. Write down time, attempt #, and which sunscreen we are using.
2. Put on gloves to prevent oils from spreading to the paper
3. Apply a thin coat of sunscreen on photo sensitive paper.
4. Set down on t-shirt with no shadows.
5. Leave it in the sun for two minutes.
6. Dunk it in water for about 1 second.
7. Wipe excess product off of the paper.
8. Leave outside to dry for 1 minute.

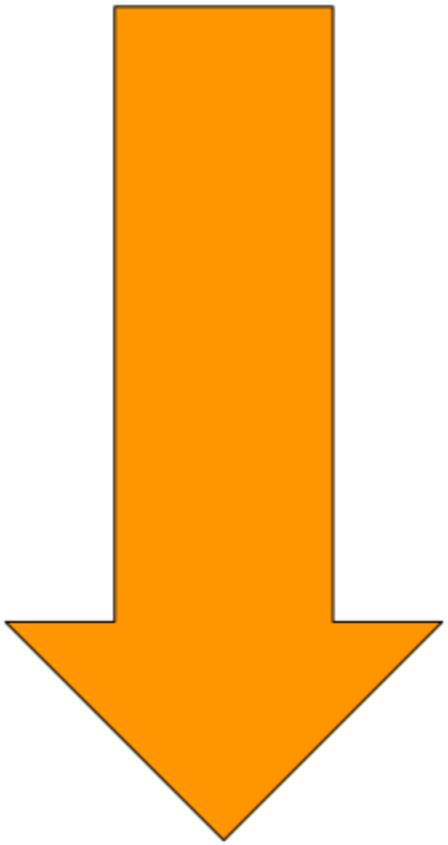


Procedures

10. Bring paper inside to prevent paper burning or flying away.

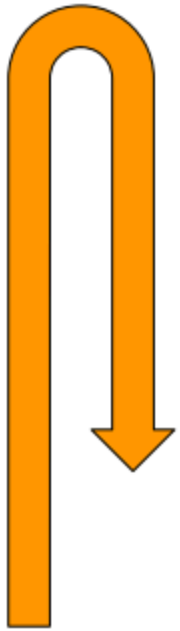
11. Repeat with other sunscreens. (Cream, stick, or spray.

12. Compare and record observations after you finish all of the experiments.

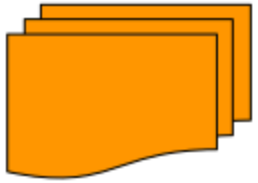


Data Collection

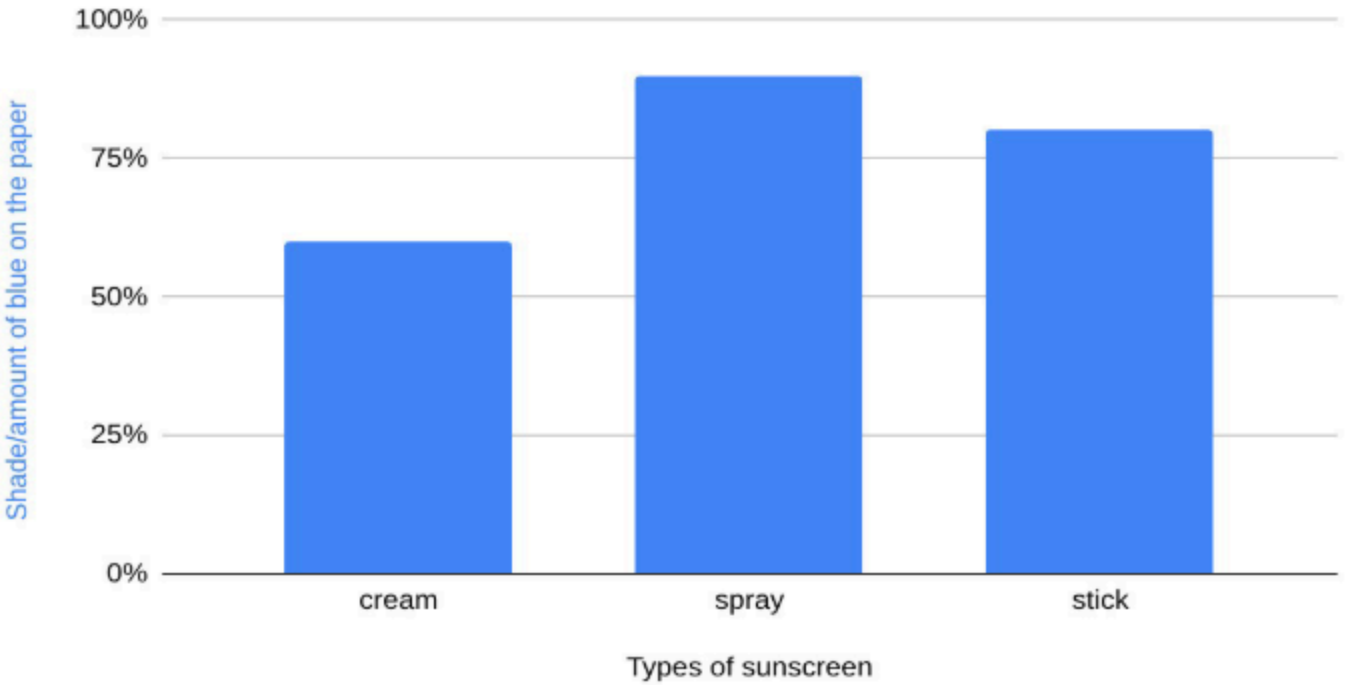
Type of sunscreen applied on paper.	Time of day	Time left in the sun	SPF level	Percent of blue on paper
Banana boat cream sunscreen	3:08 pm	2 minutes	50 SPF	60% blue
Banana Boat spray sunscreen	3:25 pm	2 minutes	50 SPF	90% blue
Banana boat stick sunscreen	3:16 pm	2 minutes	50 SPF	80% blue



Note-High percentages means it did not protect the paper very well.



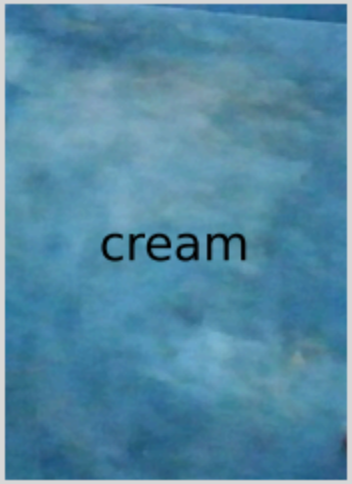
Sunscreen Protective Scale



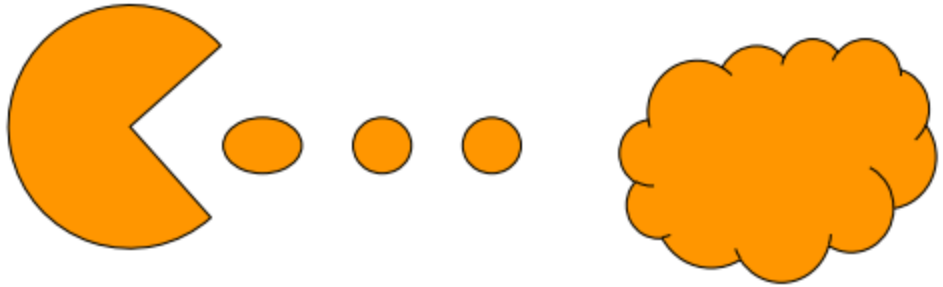
Note- High percentages means the sunscreen did not shield the paper very well!

Data Analysis

- The data shows that the cream sunscreen worked the best, then it was the stick, then the spray.
- The highest was 90%, while the lowest was 60%, and the most average was 75%.
- All were sunscreen from Banana Boat, and only cream gets good coverage.
- When we were applying the spray sunscreen, we think that the wind blew the sunscreen away from the paper because it had no physical contact with the surface resulting in worse coverage.
- It was hard to make an equal amount of sunscreen on each paper



Conclusion

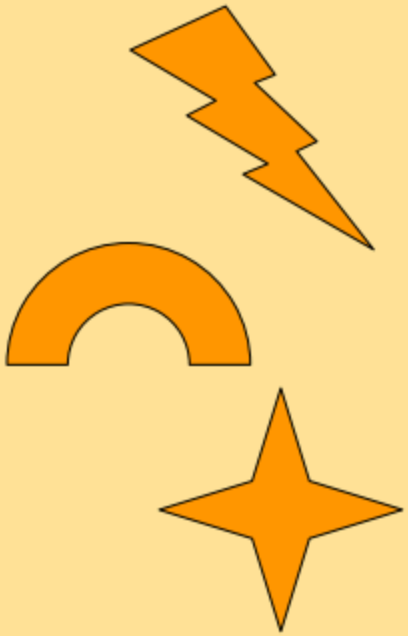


We chose our project because we know that applying sunscreen is vital to protecting your skin, and there are consequences to not applying it like skin cancer and sun spots, but we wanted to know which sunscreen will be the most effective of shielding the sun, so that we can get ultimate protection.

Our hypothesis was correct because we believed that if we test all sunscreens on photosensitive paper then we thought that the photo sensitive paper with the cream sunscreen will be the least blue because it would most likely give the most coverage, and the cream had made the photosensitive paper 60% blue which is much better than the stick sunscreen and

Application

Some people that would benefit from our experiment is anyone who is not sure how to protect themselves from the harsh and hot sun.
We learned that cream sunscreen protects skin the best.
Next time we would record our data differently.



Acknowledgements

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Thank you to our science teacher for teaching us everything we know about our science fair projects (IVs and DVs)

Thank you to SARSEF for hosting this amazing science fair!