



# CALIFORNIA STATE SCIENCE FAIR 2013 PROJECT SUMMARY

<b>Name(s)</b> <b>Xavier Aguilar</b>	<b>Project Number</b>  33155
<b>Project Title</b> <b>Not All Sunscreens Are Created Equal</b>	
<b>Objectives/Goals</b> To see if expensive sunscreens with high SPFS are better than inexpensive sunscreens with low SPFs. <b>Abstract</b> <b>Methods/Materials</b> Materials: Different brands of sunscreen, Saran wrap, 2 ring stands with a thermometer clamp, Vernier Labquest 2, Two UVB probes, Thermometer clamp, Desk, Outdoor access away from buildings and trees.  Method 1. Set up the ring stand. 2. Place the ring stand in direct sunlight. 3. Cut out a 5x6in piece of saran wrap. 4. Place the piece of saran wrap you cut out on the ring stand. 5. Weigh out 1.2 grams of sunscreen on a scale and place it on the saran wrap. 6. Spread the sunscreen out until you have a thin layer of sunscreen covering the saran wrap. 7. Attach the UVB probe to the thermometer clamp. 8. Place the UVB probe under the saran wrap. 9. Connect the UVB probe to the Vernier Labquest 2. 10. Set up your control by following steps 1-4 and 7-9. 11. Press play on the Vernier Labquest 2 and start taking in data for 5 minutes with 1 second intervals. 12. Save your data. 13. Repeat steps 1-12 for each brand of sunscreen. <b>Results</b> Most sunscreens block the same amount of UVB rays; however, some cost less. <b>Conclusions/Discussion</b> My hypothesis that the more expensive sunscreens with higher SPF would outperform the inexpensive sunscreens with lower SPF was partially wrong. What I observed was that sunscreens with SPF 30-100 outperformed sunscreens with SPF 15 or lower. However, Anything past SPF 30 did not block more UVB rays than SPF 30. What did vary between these sunscreens was the price. Block UP 30 blocked 99.9% of the UVB rays, but only costs one cent per gram while This experiment applies to people everywhere because many people use sunscreen to try to protect themselves from sunburns and the more important disease, skin cancer. This also applies to people because everybody likes to save money and most people	
<b>Summary Statement</b> My project's main goal was to test the efficiency of different sunsceen brands and SPFs.	
<b>Help Received</b> Teacher helped proof read written material.	