



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> <b>Madalyn A. Morris</b>	<b>Project Number</b> <b>J1216</b>
<b>Project Title</b> <b>Sizzling Hot Sunscreen: Does a Sunblock's SPF Level Correlate with Its Ability to Block Harmful Rays from the Sun?</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The objective of this project is to determine if sunblocks with SPF levels of 40, 50, 60, or even 70 truly protect any better than sunblocks with an SPF level of 30.</p> <p><b>Methods/Materials</b> <b>Hotdog Method/Materials</b> Hotdogs were coated with varying sunscreens with varying SPF levels and placed under a bed in a tanning salon to test protection levels. The results were inconclusive so a new method was used. <b>Solar Graphic Paper in Natural Sunlight Methods/Materials</b> Solar graphic paper was placed under transparencies with varying sunblocks and varying SPF levels. The papers were placed outside to be exposed to sunlight. Paper colors were scanned into the computer and results were assessed. <b>Solar Graphic Paper in Tanning Bed Methods/ Materials</b> Same method as at the tanning salon except the trays were under the tanning bed's light for ten minutes and at one minute intervals.</p> <p><b>Results</b> <b>Hot Dog Results</b> After three trials lasting an hour and a half total in a tanning bed, the results showed that all of the hotdogs had the same coloring and that no one hotdog was lighter in color than the rest. The results were not as anticipated and a new test using solar graphic paper was used. <b>Solar Graphic Results</b> There were six trials for each product, three in regular sunlight and three in the tanning bed, and the results were much more conclusive. The solar graphic paper began fading. It faded less in areas covered with sunblock, but the longer the paper was in the sun, the more it faded, even with sunscreen covering the transparency over it. There was no significant difference in sun exposure between the SPF 30 and 50 and 70.</p> <p><b>Conclusions/Discussion</b> The hypothesis regarding sunblock effectiveness was proven correct. The hypothesis is that SPF 50 and 70 specifically aren't more effective or protective than SPF 30. The hotdogs showed no significant difference but the solar graphic paper results were conclusive. The SPF 50 and the SPF 70 did not perform as good as the SPF 25-30.</p>	
<b>Summary Statement</b> This experiment was to determine whether or not advertisement claims that sunblocks with higher SPF levels protect better than lower SPF levels.	
<b>Help Received</b> My mom helped type and glue my board together; Hanz On Tanning Salon and Electric Beach for the use of their rooms.	