



**CALIFORNIA STATE SCIENCE FAIR
2008 PROJECT SUMMARY**

Name(s) Kenna N. Falk	Project Number S1505
Project Title Effectiveness of Sunscreen against UVA and UVB Rays	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The objective is to determine which brand of sunscreen will most effectively protect against both UVA and UVB rays and why.</p> <p>Methods/Materials Five brands of sunscreen with identical SPFs of 30 were used to make a 10% dilution. That dilution was then inserted into a cuvette and inserted to the Spectrophotometer which had a preset wavelength of first UVA waves, then UVB waves. The absorption and transmission readings were recorded. This process was repeated three times for each brand of sunscreen for both UVA and UVB waves.</p> <p>Results Aveeno, the sunscreen with the highest amounts of UVA and UVB protectors as active ingredients, was the most effective with the lowest average UVA transmittance at 89.333. Target brand and Banana Boat sunscreens were close behind with average UVA transmittances of 90 and 90.333 respectively. Aveeno had the average transmittance of 0 against UVB rays. Coppertone Sport was the least effective against UVB rays with an average transmittance of 22.666.</p> <p>Conclusions/Discussion My conclusion is that hypothesis that the sunscreen with the most UVA and UVB protectors as active ingredients in the highest amounts would be the most successful was supported. Although Aveeno had the highest UVA absorbance at 7%, this number is extremely low when considering what the sunscreen claims to be doing for our skin. This suggests that though some sunscreens claim to protect against both UVA and UVB rays, the protection offered is poor. SPF measures specifically UVB protection, and in my results UVB protection was far better than protection against UVA rays, however UVA rays are responsible for long term skin effects so you may be unaware of the damage you are causing your skin.</p>	
Summary Statement My project tests the effectiveness of sunscreens against UVA and UVB rays and to determine why some are more successful than others.	
Help Received Used lab equipment at Woodbridge High School thanks to Mr. Nakaue	