



**CALIFORNIA SCIENCE & ENGINEERING FAIR
2018 PROJECT SUMMARY**

Name(s) Kael K. Mai	Project Number J2114
Project Title What's Your UV Defense?	
Abstract Objectives/Goals The objective of this experiment was to test the effectiveness of three different types of sunscreen active ingredients, which were oxybenzone, titanium dioxide, and a combination of zinc oxide and titanium dioxide. Methods/Materials Three different sunscreens, a UVC/UVB meter, saran wrap, paint stirrers, and embroidery hoops. Spread saranwrap over the embridery hoops, and spread suncreen over the saran wrap. Measured the UV energy going through the sunscreen. Results The sunscreen with a mixture of zinc oxide and titanium dioxide blocked the most UV energy and was the most effective in all 3 trials. Conclusions/Discussion In all 3 trials, oxybenzone was the least effective active ingredient while the combination of zinc oxide and titanium dioxide was the most effective. This suggests that sunscreens with a combination of zinc oxide and titanium dioxide are more effective than sunscreens with either oxybenzone or only titanium dioxide.	
Summary Statement I measured the effectiveness of three different active ingredients in suncreens and found that a combination of titanium dioxide and zinc oxide is the most effective.	
Help Received My mom helped take measurements for the experiment when I was gone.	