



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Kimi P. Hirano	Project Number J1110
Project Title How Toxic Is Your Child's Park? Comparing the Effects of Parks' Parking Areas' Run-Off on Daphnia magna	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to use Daphnia Magna to compare the effects of run-off from parking areas of local San Mateo and Foster City parks. (San Mateo Central Park, Sea Cloud Park in Foster City, and Foster City Edgewater Park).</p> <p>Methods/Materials This experiment used transfer pipettes; same-sized containers; an electric balance; spring water; a Daphnia Magna culture kit; and sediment samples from the parking areas of three local parks (San Mateo Central Park, Foster City Sea Cloud Park, and Edgewater Park in Foster City). To simulate run-off, I mixed each sediment sample with spring water. For each trial, I used four containers; three were for the three different run-off samples, and one was a control, i.e. no sediment. The experiment was conducted within a 48-hour window by recording the number of dead Daphnia in each of four containers at specified time points. Then the 48-hour experiment was repeated again for a second trial using fresh sediment samples, live Daphnia, and fresh water.</p> <p>Results The containers with the San Mateo Central Park parking area sediment samples had a consistently higher death rate than those from the other parks. By the end of the experiment, compared to the control group, the sediment from the Central Park parking area had a 63.64% higher death rate, while the other two parks both 55.56% higher death rates than the control. On average, the sediment from San Mateo's Central Park parking area had an 18.18% higher death rate than the other two parks' parking areas.</p> <p>Conclusions/Discussion My conclusion is that, amongst the sediment from Sea Cloud Park and Edgewater Park, the sediment from San Mateo Central Park's parking area is most toxic.</p>	
Summary Statement I tested the effect of simulated run-off (from parks' parking areas) on marine animals by using Daphnia Magna as my test subjects.	
Help Received Mom and Dad helped get some of my materials, and they drove me so I could get my samples	