



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Clinton L. Hatayama	Project Number J1808
Project Title The Effects of Nonbiodegradable Plastic on Concrete Cracking	
Abstract Objectives/Goals The goal of my project was to see if nonbiodegradable plastic had an effect on the cracking of concrete. Methods/Materials I had 54 concrete bricks made and tested. The plastics I tested were plastic #4 and plastic #6. I had 18 trials for each variable. Nine blocks of each variable went in the oven to reach an internal temperature of 125 degrees and the other nine went into the freezer to reach an internal temperature of 32 degrees. The 27 blocks that went into the oven were immediately pulled out and 32, 60, and 80 degrees water was poured on the blocks. For each temperature there were three blocks from each variable. The 27 that went into the freezer were taken out and 60, 80, and boiling water were poured over three blocks from each variable. Then I recorded my results. Results After all my results were recorded I found no results. None of the concrete cracked during the extreme temperature change. So I decided to go further and do another experiment. I decided to drop the bricks from seven feet and see how many broken pieces there were and I also recorded the biggest piece out of each variable. The results of my second test were: the control had an average of 1.7 cracks per block, the concrete with Plastic # 4 was 4.6 per block, and the concrete with the Plastic #6 was 2.5 cracks per block. Conclusions/Discussion In conclusion the control did the best with a low number of cracks. This states that even though the plastic was being put to good use the concrete still cracked more. This suggests that the plastic could be added to the concrete in small unimportant areas, like a sidewalk, so the plastic wouldn't have to go to any of the landfills.	
Summary Statement My project is about the effect of nonbiodegradable plastic on the cracking of concrete.	
Help Received Mother helped type report; Parents bought materials.	