



**CALIFORNIA STATE SCIENCE FAIR
2013 PROJECT SUMMARY**

Name(s) Leo J. McGrath	Project Number J1116
Project Title Are You Sure That Air Is Safe to Breath? Acidity and Particles in the Air of Newark, CA	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals This project is about the air quality around my local area. The purpose of this project is to answer the questions: 1. Does the pH and/or particle level vary from sample to sample? 2. If they do vary, does it have to do with the time of the day? 3. If they do vary, does it have to do with the day of the week?</p> <p>Methods/Materials Twice daily, I used pH strips and a beaker to measure the acidity of the air condensation. Then I used a 5 by 10 rectangle of grid paper taped to an index card. I put Vaseline on the paper and put it outside to collect air particles for 12 hours. I then counted the amount of particles under a microscope.</p> <p>Results I found that there is a pattern for both the acidity and particles in the air during the week and during the day and night. The acidity goes up in the mornings and work week days and down in the evenings, weekend days and holidays. Acidity goes up in the work week days and down in the weekends. For particles, I found a pattern of both up in the work week and down in the weekend and up in the mornings and down in the evenings. In summary: 1. pH and particle levels do vary from sample to sample. 2. In the mornings and evenings there was no change in pH level, but when I look at particles I get a different answer. During the day the particle level is higher in the morning than in the evening. 3. During the week both the pH and particles are higher than they are during the weekends.</p> <p>Conclusions/Discussion Looking at the air quality of my local area in this project I came to the conclusion that there is a pattern in the acidity of the condensation and air particle count throughout the week. The air particle count and acidity went up during the work week days and down during the weekend days. The second pattern was that the particle count went up during the day time and down during the evening. These patterns suggest that there is a link between traffic and air quality. In my experience, the traffic in my local area goes up during the work week days and down during the weekend. The traffic in my local area goes up during the mornings and down during the evenings. To look more into the link between the traffic and the patterns I observed, I would need to consider the weather, location, air quality and time of year. I would collect data in places closer and farther from roads. I would collect data from car exhaust and try to link it to my observational data.</p>	
Summary Statement The goal of this project was to see if there were any patterns in the changes of air quality in my local area throughout the week or within the day.	
Help Received I would like to thank my dad who helped me throughout my project. I would also like to thank my science teacher, Mr.Drumm, for reviewing my project proposal.	