



**CALIFORNIA STATE SCIENCE FAIR
2003 PROJECT SUMMARY**

Name(s) Ann E. Kashanski	Project Number J1113
Project Title Acid Rain on the Face of Things: The Effect of Acid Rain on Building Materials	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My project was to determine the effect of acid rain (using lemon juice, pH2) on various building materials in direct sunlight and indirect sunlight as compared to the effect of unpolluted rain water.</p> <p>Methods/Materials Samples of six building materials - copper, steel, brick, granite, sandstone and marble were placed on a grating on top of four different buckets. The buckets represented acid rain/direct sun; acid rain/indirect sun; unpolluted rain water and a control. All were placed in direct sun except one which was placed in indirect sun (shade). Acid rain samples were sprayed 20 times every day at 7 a.m. and 7 p.m. with lemon juice and unpolluted samples were sprayed the same but with distilled water. Samples were weighed every two days with changes in appearances also recorded. A secondary experiment was done also.</p> <p>Results All six materials were affected differently with sandstone having the most erosion or loss of material and marble the second most. Direct sun had a greater effect. Some weights didn't change, but the physical appearance did as in the case of copper and steel.</p> <p>Conclusions/Discussion My hypothesis was correct in stating that acid rain affects and erodes or corrodes building materials more than unpolluted rain and the effect is greater in direct than indirect sunlight. Buildings, monuments, bridges and artworks are affected. The pollution creating acid rain must be controlled and renewable sources of energy must be developed and used or we will lose millions of dollars in repairs, as well as our historical architecture and artworks.</p>	
Summary Statement My project is about the effect of acid rain on building materials.	
Help Received My mother helped with some typing and took photos of me with my project. She helped me handle the sticky spray mount and brads on the board. My mother also supervised when I used toxic products.	