



**CALIFORNIA STATE SCIENCE FAIR  
2006 PROJECT SUMMARY**

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| <b>Name(s)</b><br><b>Anthony Battey; Shayla Smith; Heather Ward</b>  | <b>Project Number</b><br><b>S0603</b> |
| <b>Project Title</b><br><b>Bringing Down the Greenhouse Effect</b>   |                                       |
| <p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b><br/>The purpose of this experiment is to compare the amounts of Carbon Dioxide in four common gas sources. The four gas sources were human exhalation, ambient air, pure carbon dioxide, and automobile exhaust.</p> <p><b>Methods/Materials</b><br/>The air contained was later released in a bromthymol blue solution and titrated with ammonia. The bromthymol blue solution would change colors depending on how much carbon dioxide was released. Ammonium was used to bring the bromthymol blue back to its original color.</p> <p><b>Results</b><br/>The human exhalation had the least significant change and did not change colors. The ambient air and pure carbon dioxide had a small change from dark blue to light blue. The automobile exhaust had the highest level of carbon dioxide and the bromthymol blue solution turned a light shade of yellow.</p> <p><b>Conclusions/Discussion</b><br/>Our hypothesis proved correct. This study is significant because our group was able to prove that automobile exhaust has the most pollutants in our environment. Perhaps, having this knowledge will guide our legislators to pass laws that provide a better and friendly environment.</p> |                                       |
| <b>Summary Statement</b><br>Our project was designed to test four gases and discern which had the most carbon dioxide--a harmful greenhouse gas.   |                                       |
| <b>Help Received</b><br>Mrs. Castillo provided us with needed materials such as bromthymol blue solution, test tubes and beakers.  |                                       |