



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

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| <b>Name(s)</b><br><b>Haley S. Rogers</b>   | <b>Project Number</b><br><b>J1032</b> |
| <b>Project Title</b><br><b>The Effect of Roads and Buildings on Global Temperatures</b>  |                                       |
| <b>Objectives/Goals</b><br>To prove that black roads and buildings have an effect on the rise in temperature of our planet. However, the clouds in our atmosphere may cause a cooling effect.  |                                       |
| <b>Abstract</b><br><b>Methods/Materials</b><br># The Planetary Structure was built<br># 6 Balls of modeling clay were made, 2 inches in diameter. 2 White, 2 Blue and Green, and 2 Black. On each one of the two had clouds made of polyester fibers<br># The Balls were added to the planetary structure<br># The Thermometers were calibrated with ice water<br># The Globes and the Thermometers were put over the balls<br># The motor and light bulb was turned on<br># Temperature readings were taken every 5 minutes   |                                       |
| <b>Results</b><br>The worlds with no clouds were about 2.8 degrees Celsius higher than the Worlds with clouds. The all black world representing the earth totally covered with black buildings and roads recorded the hottest about 5 degrees above the control.   |                                       |
| <b>Conclusions/Discussion</b><br>The hypothesis was that roads and buildings have an effect in the rise of temperature of our atmosphere; and that clouds around our planet help decrease the rise in temperature. The hypothesis was proven correct. The highest temperature was the black world at 48 degrees Celsius and the lowest was the White world with clouds at 41 degrees Celsius. Since roads would add blackness to the earth, this would raise the temperature. Although this would be a very small amount, small changes in the average world temperature can cause dramatic changes in the global climate.<br>The clouds on average made the worlds 2.8 degrees Celsius lower. It was very surprising to see it was that big of a change. To further the project the square footage of roads and buildings all over the world could be determined and added to my experiments. |                                       |
| <b>Summary Statement</b><br>How roads and buildings effect global temperatures.  |                                       |
| <b>Help Received</b><br>Dad helped with construction of the planetary.   |                                       |