



2009

## MASSACHUSETTS CLEAN TECHNOLOGY AWARDS

A Program from The Foresight Project Inc; [www.theforesightproject.org](http://www.theforesightproject.org)



Region VI, Boston MA  
CleanTech Award:

Johneric Cedeño and  
Reggie Edge, Health  
Careers Academy, Boston

*"How Does The Power Of  
Light Effect Electricity?"*

### ABOUT US:

Hi! My name is Reggie (on the left). I am fifteen years old and a ninth grader at Health Careers Academy in Boston. I play for the basketball team and study Physics I, Algebra I, English-Language Arts and United States History. I have two brothers and one sister that I love a lot. The person I look up to is Lebron James as my role model because I admire the effort he puts in for basketball. In the future, I want to be an NBA player.

Hi! My name is Johneric (on the right). I am fourteen years old and a ninth grader at Health Careers Academy in Boston. My classes are Physics I, United States History, Algebra I, Spanish, English, Health Professions and Computer Engineering. I live with my mom, two younger sisters and my step dad. My uncle is my role model because when my father was gone my uncle took his spot and became a big part of my life. When I grow up I want to be a football player or an architect.

### OUR PROJECT:

The purpose of this project was to find out how the colors of light affect electricity and how much energy a solar panel gives off. Reggie and I also wanted to see if our research could help the future of this country. Our world is nervous about all the fossil fuels we are using and the resulting pollution; our experiment could help the United States be more energy efficient. To judge how much electricity was produced, we attached a silicon solar cell to a model car. We then placed different colored transparent plastic sheets over the solar panel, and measured how many rotations the wheels made when powered by the light.

Our hypothesis was that the lighter colors were going to give the most electricity and have the most rotations around the wheel. Reggie and I made this hypothesis because we thought the lighter colors would absorb less light than the darker colors, and let more light into the solar panel. To start the experiment, we needed to get a couple of materials. We learned through our research the most important factors to the experiment were the solar car and the color transparency sheets. Reggie and I

chose to use the car and the sheets because we thought it would be the easiest way to do the experiment. We had to plan ahead and look at the 5-week forecast to know when it was a good day to do the experiment. We did the test on a sunny Thursday evening. Once we had everything set-up, we started testing. The average results for each color were 280 for normal sunlight, 206.7 for red, 178.7 for purple, 230.7 green, 228 for blue and 241.3 for orange. Thus proving our hypothesis was right that the lighter the color transparency the more energy went into the solar panel.

#### Works Cited

Hewitt, Paul G. Conceptual Physics. 10th ed. Menlo Park: Adam Black, 2005.

Hewitt, Paul G. Conceptual physics. 3rd ed. Menlo Park: Scott Foresman.

Bailey, William, and Regina Bailey. "Solar Science Projects." 2005-2006.

<<http://www.crystal-clear-science-fair-projects.com/solar-science-projects.html>>.

Benyus, Janinie M., and Gunter A.M. Pauli. "The Business of Biomimicry." Harvard Business Review Feb. 2009: 28-29.