

Blake Middle School Wins National Science Bowl Hydrogen Car Race

Abigail Pillitteri, a writer for the Department of Energy's Office of Science



You could feel the energy in the air at the model car race for middle school students at the National Science Bowl competition. After rounds and rounds of races, members of the final eight teams crouched at the starting line. In past runs, the top four cars all completed the ten-meter stretch in times separated by just a few tenths of a second, so the competitors knew the race would be a close one. “You have three minutes to electrolyze!” said the announcer. The students hurried to prepare their fuel. “On your marks.... GO!”

Cars of all different shapes and sizes zipped down the track. Students’ faces reddened with anticipation. The timer clocked the fastest car at just 3.49 seconds. It belonged to Blake Middle School! Following close behind were cars built by Paducah Middle School and Ingomar Middle School for second and third place.

The Blake students constructed quite an impressive little car. It weighed only 149 grams, which is about the same as a baseball. They made the frame from the bottom of a dishwasher container and found the small plastic wheels in a solar car kit.

Like all of the cars, it was powered by hydrogen. The hydrogen came from regular-old water (H_2O), which contains molecules with two hydrogen atoms and one oxygen atom. As Jazmin Piñón of Guillen Middle School explained, the students “put water in an electrolyzer to separate the hydrogen from the oxygen, and then used the hydrogen as fuel.”

While all of the cars had the same fuel source, there were a wide variety of designs. Some looked like skateboards, others like mini racecars or go-carts. Guillen Middle School’s car had a panda bear driver, and Nathaniel Rochester’s had CDs for wheels. Design was an important element of the competition, as the team with the best design will be awarded at Monday’s ceremony.

But at the end of the day, the model car segment of this competition was not about wins and losses or awards. It was about the student’s excitement of building something by hand, watching it in action, and understanding every bit of how it works. It was about hands in the air, glowing faces, high fives and hugs.

