

TEMPE REPUBLIC

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Engineer John Purchase mentors Josh Foe, 13, with his solar-powered car at Connolly Middle School in Tempe.

PAT SHANNAHAN/
THE REPUBLIC

Running on sunlight

It was like a race to the future when Connolly Middle School seventh-graders put their solar-powered cars to the test to culminate a four-day project organized by the Institute of Electrical and Electronics Engineers' Teacher-In-Service Program's retirees. The volunteers visit classrooms to share their expertise with students through hands-on workshops. **Page 3**

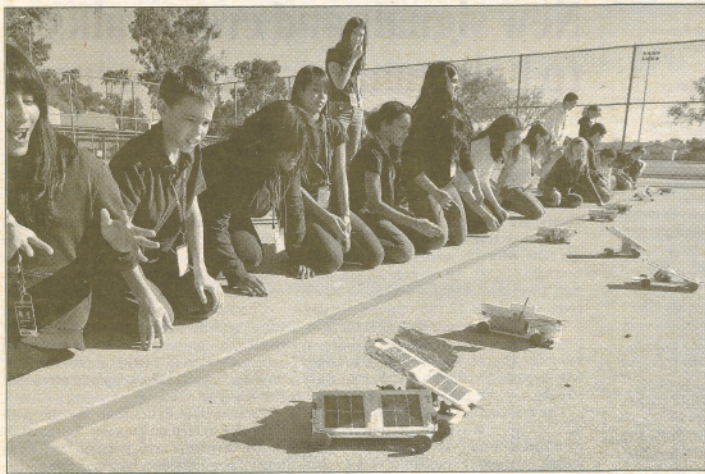
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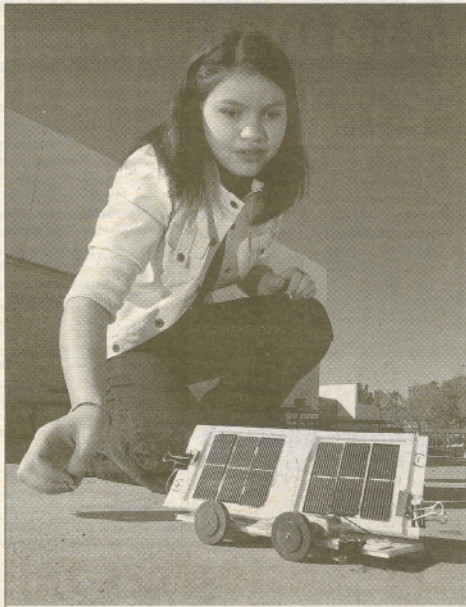
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PHOTOS BY PAT SHANNAHAN/THE REPUBLIC

Allison Valenzuela (far left, above), 12, watches her solar-powered car crash into another during a race at Connolly Middle School in Tempe. Francesca Callicotte (right photo), 13, checks the operation of her car.



Solar power put to the test

Retired engineers organize project for Connolly Middle School students to build, critique cars

By Georgann Yara

SPECIAL FOR THE REPUBLIC

After a few days of rain, sunlight was a welcome sight Thursday to Connolly Middle School seventh-graders, who put the solar-powered cars they built from scratch to the test.

Students placed their hand-held vehicles on the school's outdoor basketball court, let go and watched them zoom under the cloudless sky.

Josh Foe and Kenan Dobric affixed two pieces of aluminum foil to the sides of their car, hoping the resulting reflection would enhance its performance. They said they were happy with the results and enjoyed the atypical science lesson.

"It was very educational and more hands-on," Josh said.

Kenan said, "We learned a lot more from this than reading a

textbook. And it's a lot more fun."

The race was the culmination of a four-day project organized by the Institute of Electrical and Electronics Engineers Teacher In-Service Program's retirees.

IEEE is the world's largest professional association established to foster technological innovation, and comprises engineers and scientists in 160 countries.

Fifteen retirees in the Phoenix program visited classrooms, sharing their expertise with students through hands-on workshops.

Corporations, businesses and individuals donate funds, resources and time to make these projects free to schools.

Tempe resident John Purchase started the Phoenix subset last year after attending a TISP training program aimed at help-

ing teachers take what they've learned to their students.

Purchase realized that limited funding in the public-school system would make it difficult for teachers to implement these projects.

He took it a step further and got fellow retired engineers involved.

The solar-car project cost \$2,600.

"The schools cannot afford this," said Purchase, who has a background in aerospace engineering.

"This came from teachers saying, 'Come into the classroom and help us teach.'"

Seventh-grade science teacher Sara Nicholls said Purchase and his team taught students how to build their cars and brought in materials beyond her budget.

She said students are benefit-

ing from working with real scientists and learning lifelong skills, such as teamwork and problem solving.

Nicholls said the project has brought shy students out of their shells and given her ELL and special-education students a confidence boost.

"At first they thought, 'I can't do this. It's science. It's too hard,'" she said.

"But then they see how what they are doing applies to their everyday life and they realize they can do this."

Adriana Puente-Reinhardt, one of Nicholls' honors students, noticed her car was fast but it curved.

She attributed that to one of the wheels, which required straightening.

"I never knew it would be so complicated and a lot of work," Adriana said. "Personally, I

wasn't so excited, but then it was a lot of fun."

Classmate Francesca Callicotte said she appreciated the engineers coming in and sharing their knowledge.

She said she had considered engineering as a career before the project.

"It was more fun than work," Francesca said. "Now I want to be an engineer more than ever before."

Eli Kawam, an aerospace independent consultant, built the 200 solar panels that students used.

He said he enjoys the time spent with students.

"This is what makes my career rewarding," said Kawam, who lives in Tempe.

"If there is an interest, to use my passion to cultivate that spark and turn it into a fire, that's what it's all about."