

# Engineers help in science classrooms

By Hayley Ringle

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A group of mostly retired scientists and engineers are volunteering their time to visit classrooms and teach fun lessons on science and engineering with the goal of inspiring students to become interested in those careers.

The Engineers in the Classroom volunteers, a sub-program of the Teacher in Service Program, are run by the Phoenix section of the Institute of Electrical and Electronics Engineers. Since 2008, the volunteers have taught Newton's laws, Archimedes' principle and Bernoulli's principle by helping kids build sailboats and test them in inflatable pools.

They also teach students about simple machines and mechanical advantage while kids make their own water wheels. Building and racing toy solar cars comes after lessons of electric circuits, batteries and solar cells.

The volunteers visit the classroom for



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Josh Foe gets help with his solar car from retired aerospace engineer John Purchase.

three days, with 45-minute lessons, presentations, project building and experimentation. Although the group started out teaching third-graders to sophomores, they are now focusing on sixth to eighth grades.

## Volunteers wanted

Engineers in the Classroom, a group of mostly retired scientists and engineers who teach lesson plans on science and engineering to sixth- to eighth-graders, are looking for volunteers, especially college students willing to help out during the day. If interested, e-mail John Purchase at [jpurchase@cox.net](mailto:jpurchase@cox.net). The Institute of Electrical and Electronics Engineers has also set up a website, [www.tryengineering.org](http://www.tryengineering.org), with more than 70 project-based science lesson plans available for teachers to download for free.

"We found if you don't get them hooked before high school," their interest may never turn into a career, said David Leeper, 63, a retired electrical engineer from Scottsdale. "We're trying to plant that seed."

The volunteers are scheduled to teach in 88 classrooms in nine schools around the Valley.

Lesson plans under development include teaching Newton's laws, propulsion and trajectories using bottle rockets, and tension, compression and cable suspension with truss bridges.

Two to four volunteers work with the teacher to teach the project-based lessons.

The materials and volunteers, who now number 15, are available at no cost to the schools. Materials, about \$10,000 worth, are paid for through the Institute of Electrical and Electronics Engineers.

The students choose their own building materials, work in teams and experiment until their project works.

"It's not an arts and crafts project," said Eli Kawam, 55, an engineering consultant from Tempe. "We're helping students transfer what is learned in the classroom to the world beyond. Hey, that should be our motto."