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## KidGINEER science program inspires students in West Laurel

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(Enlarge) A science experiment yields blue and green foam, which delights Dominick Booth during a Feb. 12 KidGINEER session on chemical engineering at the West Laurel Community Building. (Photo by Phil Grout)

According to Laurel resident Andrea Evans, research shows children can permanently lose their interest in math and science by the time they reach third grade.

In this age of technology, that lack of interest can be detrimental and she's doing everything she can to prevent it.

Evans, who is a patent lawyer in Washington, is the founder of KidGINEER, a science enrichment program for students in kindergarten through the fifth grade. Through six-weeks of Saturday sessions, Evans helps teach kids the importance of science, technology, engineering and math.

Evans, who also has degrees in math and civil engineering as well as law, began the program at Bond Mill Elementary last year, where her daughter is now a first-grade student. Evans said she wanted her daughter involved in extracurricular activities pertaining to math and science, and there were none available.

"People often emphasize reading as a fundamental of education, but science is equally important," Evans said. "Being an engineer helps you be a leader, too. By third grade, research has shown that many children have lost interest in math and science, and research also shows that there will be more engineering jobs by the time these kids reach the work force, and not enough engineers to meet the demand. This (program) is impacting the lives of young children, if we catch them at a young age."

Evans, 34, began KidGINEER with some of her family members, and initially it was a 10-week, after-school program that met three times a week. Forty students participated in the program, which she described as a smorgasbord of science.

That smorgasbord drew attention from parents whose children weren't able to participate in after-school activities because of scheduling conflicts. So Evans partnered with Maryland-National Capital Park and Planning Commission and moved the program to the West Laurel Community Building. She shortened the program to six-weeks, moved the meeting day to Saturday and capped the class size at 30 students.

The first session of the Saturday program, which centered on chemistry and chemical engineering, ended Feb. 12. Registration is under way for the next session, which is focused on electrical engineering and begins March 5. Sessions costs \$125 for students in Prince George's County, and \$150 for out-of-county students, and registration is through M-NCPPC.

To end the chemical engineering session, Evans and four other instructors helped 28 children, ages 5-10, make foam and rudimentary lava lamps.

"It's not what you think of a lava lamp," Evans said. "It's more of a density project."

For that project, students mixed oil and water, then added food coloring to the mixture. Next, Evans said, came Alka-Seltzer tablets. As students watched the oxygen bubbles pushing the colored water upwards, the lights were turned off and the students held flashlights under the bottles.

"Seeing their faces, to hear them say 'ooh' and 'wow,' that's the best part," said Bernadette Hence, Evans' mother and one of the teachers in the program.

For the next session, in order to bring a spark to electricity, Hence said students will learn about circuits, and wire a dollhouse to make the doorbell ring, lights go on and off and miniature fans circulate. Hence said plans were already in place for the following session, as well, in which students will learn about robotics.

Hence, who has a degree in civil engineering and a doctorate in education, said she is aware of what the country is up against in the technology-driven world. While students in STEM-related college majors have gone up in recent years, that increase is a "drop in the bucket" compared to STEM majors in other countries, she said.

"There's a big push for STEM because our numbers are behind other countries, like India and China," Hence said. "For our country to be competitive, we've got to get more people at the table and increase the pipeline for science and engineering. You have to start very early. You can't wait until someone's in high school. After third grade, without a proper intervention, students are permanently turned off from math and science. That's a whole wave of things you can't touch, and you want to be at least strong enough in those fields to go into them if you choose to."

While trying to orchestrate nearly young 30 students in the same projects and learning initiatives may seem daunting, Evans said it wasn't difficult. She and other instructors know the material, and know kids.

"We stress safety, and we're not teenagers teaching the class," she said. "We're applying and pushing the kids, giving them college-level work and they can do it."

"People think it's a big range (of ages), but it's new for all of the kids. They're all on the same level, and they all have fun," Evans said.

Read more: <http://archives.explorehoward.com/news/79825/science-program-inspires-students-be-engineers/#ixzz2ssaaXf00>