



News Release

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30 April 2013

ECBC helps local teachers use robotics for applied math lessons

PERRYVILLE, Md. – While students often ask themselves why they need to learn math, teachers ask themselves how they can make math more relevant in the classroom and relay its real-world application in meaningful way.

In times where the number of students pursuing science, technology, engineering and mathematics (STEM) degrees is dropping and the need for a technically skilled workforce is significantly growing, it is critical that subjects like math are taught in a fashion that matters to students.

Therefore, the U.S. Army Edgewood Chemical Biological Center (ECBC) offered 20 middle and high school teachers at Cecil County Public Schools a professional development training that revealed how mathematics lessons can be embedded in the context of robotics, April 18-20.

“Which student wouldn’t want to play with robots?” STEM Coordinator for Cecil County Public Schools Frank Cardo rhetorically asked. “Here’s an opportunity to take a topic that interests students and to integrate math in a meaningful and relevant way.”

“The Math Robotics training brought enormous excitement to our teachers and shed light on how they can use robotics to teach math concepts in a manner that is more conducive to our students,” he added.

As part of ECBC’s Adopt-a-SME initiative, three of the Center’s subject matter experts (SME)s teamed up with teachers during the training contributing their real-world knowledge and skills in robotics. But furthermore, teachers will be able to use the SMEs as an educational resource in their classroom after the training to help reinforce the application of STEM principles.

“Having ECBC’s scientists and engineers train with us is helpful because, as teachers, we can then exactly tell students how professionals out there use math as part of their every day jobs,” said Michael Hinton, computer literacy teacher at Elkton Middle School. “It also allows us to use them as resources in our classroom to show students that math can lead to a better career and ultimately to a better future for them.”

SMEs that work at ECBC develop cutting-edge technologies that protect service members and the nation against potential chemical, biological, radiological, nuclear and explosives threats. The passion and expertise they have for their careers enables them to convey the real-world application and relevance of science and engineering naturally.

“The scientist we’ve been working with has been really helpful with explaining how the data and concepts can be applied later on during a job [in a STEM career field],” said Jennifer Berman, seventh-grade math teacher at North East Middle School, who teaches an Honors Algebra class

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and a seventh-grade Common Core class.

“Without the interaction with the subject matter expert, it would be impossible to exactly explain to students how they’ll use math in the future.”

This STEM educational outreach initiative, sponsored by the National Defense Education Program and presented by instructors from the National Center for the Advancement of STEM education, allowed teachers to be students for three days. Focused to take an inquiry- and design-based teaching approach, their goal was to explore techniques that will help them effectively implement the Common Core Math Standards in the classroom.

“What we’re doing here today really brings all the math concepts together,” Berman said. “Students will be able to see the different connections between experimental versus theoretical probability, between the experimental and theoretical use of data, how math connects to actual activities, and they will be able to investigate on their own instead of us telling them.”

Leveraging a topic that excites students can help teachers overcome the challenge of making a difficult subject like math more interesting. This training is designed to help teachers spark students’ intrinsic motivation for mathematics through the lens of robotics and consequently help them yield good math results without much effort.

“This Math Robotics training allows us to make math and science more fun, especially for students that normally don’t like these subjects,” said Michael Hinton, computer literacy teacher at Elkton Middle School. “Using these teaching methods, we can show students how math directly applies in the real world.”

Please click on this link for YouTube video coverage: http://youtu.be/C7Dffl3_Bdq.

For more information about ECBC, visit <http://www.ecbc.army.mil/>.

ECBC is the Army’s principal research and development center for chemical and biological defense technology, engineering and field operations. ECBC has achieved major technological advances for the warfighter and for our national defense, with a long and distinguished history of providing the Armed Forces with quality systems and outstanding customer service. ECBC is a U.S. Army Research, Development and Engineering Command laboratory located at the Edgewood Area of Aberdeen Proving Ground, Maryland. For more information about the Edgewood Chemical Biological Center, please visit our website at <http://www.ecbc.army.mil> or call (410) 436-7118.

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