



News Release

For Information: Don Kennedy, 410-436-7118

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The Army's Edgewood Chemical Biological Center adds fun factor, earthworms to elementary science lessons

BEL AIR, Md. – As one of its major science, technology, engineering and math (STEM) educational outreach initiatives, the U.S. Army Edgewood Chemical Biological Center (ECBC) continues to help implement the 'Engineering is Elementary' (EiE) curriculum in Harford County Public Schools' elementary school classrooms.

After providing its neighboring school system with four different EiE storybook modules, ECBC subject matter experts have teamed up with local teachers to reinforce STEM concepts taught in 'Yi Min's Great Wall,' 'A Reminder for Emily,' 'Leif Catches the Wind' and 'Saving Salila's Turtle.' EiE storybooks integrate engineering and technology concepts and skills with elementary science topics, challenging students to solve a real-world problem.

"The Department of Defense's (DoD) National Defense Education Program (NDEP) enables us to offer teachers and students fun and meaningful experiences that enhance STEM lessons in the classroom," said Mary Doak, the Center's program manager for community and educational outreach. "With NDEP's support, the scientists and engineers that work at ECBC today can help foster the STEM talent we need to solve tomorrow's problems."

ECBC's Environmental Toxicologist Michael Simini, Ph.D., who uses earthworms to assess the impact of chemicals on the environment for DoD customers, recently translated his area of expertise into four real-world science lessons for 120 fifth-graders at Red Pump Elementary School.

"In my every day job at ECBC, I analyze the way harmful pollutants affect the survival and reproduction of living organisms like earthworms and develop models that monitor environmental toxicity levels to support the sustainability of military testing and training ranges," he explained. "I truly enjoy sharing my passion for science with elementary school students – I think this is the perfect time to start sparking students' interest in STEM career fields."

Instead of using earthworms for chemical and biological defense projects that afternoon, Simini used the organisms to engage local students in a hands-on STEM activity that directly related to the EiE story 'Saving Salila's Turtle.' After reviewing topics like the eco-system, living and non-living organisms and the food chain with each group of students, Simini asked questions that

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allowed them to apply their knowledge of science.

Students then took a closer look at earthworms and their behavior in different environments. During two separate experiments, students examined whether worms preferred a 'wet' or 'dry' environment and whether they were attracted to a 'polluted' or 'clean' area. While using creative thinking and the scientific method, they developed a hypothesis, performed a scientific experiment and drew conclusions based on the scientific data collected.

Heather Hammond, who teaches fifth-grade science at Red Pump Elementary School, had invited Simini into the school to help reinforce STEM concepts outlined in the environmental science curriculum.

"Dr. Simini's visit to our classroom was a great way to enhance our 'Environmental Issues' and 'Environmental Engineering' science units," she said. "The students were intrigued by using earthworms for scientific experiments and really enjoyed the STEM experience ECBC provided."

Looking through the eyes of science, students applied inquiry and problem-solving skills to the discovery of a phenomenon unfamiliar to them before Simini came into their classroom.

"I was very surprised to see how earthworms reacted to different environments," said fifth-grade student Nick Hildebrandt. "I had a lot of fun conducting this activity, because it allowed us to see and examine earthworm behaviors up close."

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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