Middle school kids go outdoors, learn science the hands-on way

By Melanie Lebert

Students at Macon Middle have stepped outside of the classroom and experienced hands-on learning in science by collecting information and data from a creek located near the school.

Students in Colette Lovell and Jonathan Krieger's eighth-grade science classes have been participating in citizen science projects on their school campus as part of the Cowee-ta LTER (Long Term Ecological Research) Schoolyard Program.

Over the past week students have been collecting data on the small creek adjacent to the Middle School and bordering the new Mountain View Intermediate School. They have collected information on pH, dissolved oxygen, temperature and turbidity and have made observations on the physical characteristic of the stream corridor. They also collected living organisms from the stream that are biological indicators for stream health.

These activities not only prepare the students for the end-of-grade test (EOG), but also teach students about field methods and local issues surrounding water quality.

Lovell explained that eighth-grade students are required to learn all about the hydrosphere and about properties of water, the importance of water, where water is, how to take care of it and lots more.

“Going outside with the Cowee-ta LTER group allows students to ‘do’ science,” she said.

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Photo/Provided

Eighth-grade "citizen scientists" collect data on their school campus.
Established 1886

LTER: Students go outside, practice citizen science at the Middle School

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said, "They make real connections between terms learned in class and streams in their backyard. Doing science as opposed to learning about it makes information and the importance of knowing it real."

"In the class, the term 'bioindicator' would be a big word that most students wouldn't even want to learn about," she continued. "However, put the students in the creek, have them kick up some critters and explain which ones indicate good water quality and which ones don't; 'bioindicator' isn't such an intimidating word anymore."

Lovell expressed gratitude towards the scientists from Coweeta who have been working with the students.

"Jennifer (Jennifer Love, Coweeta LTER Schoolyard coordinator) was a tremendous help to Mr. Krieger and me. She made taking two classes at a time outside much more manageable. The students enjoyed having her and the scientists from Coweeta instruct them and work with them outside. We are all eager for them to return after EOGs."

"I think it is an incredible opportunity as a teacher to have these kind of resources extended to us," Krieger added. "All year long I make references to real field scientist activities in the classroom and for my students to actually get to participate in a scientific study, I couldn't be more thrilled. Experiences like these are what spark the imagination of the scientists of tomorrow. With 120-plus students on my roster I couldn't do this type of engaging field study without the help of Coweeta, Mrs. Jennifer Love and my 'partner in science crime,' Mrs. Colette Lovell."

In the future, the Coweeta LTER Schoolyard Program will be installing a weather station and a salamander-monitoring study on the campus. They will also continue to monitor the stream health. The data collected from these projects will not only provide data for the students to use for independent projects but will also create a baseline for future research involving this stream. The program is designed to provide long-term data, allowing students to recognize changes in their local environment.

What is citizen science?

Citizen science uses volunteers to help collect data. Using citizen scientists not only helps collect valuable information, the breadth and depth of which would be impossible for researchers to gather, but it fosters environmental awareness and a sense of place by teaching citizens about their local environment.

Coweeta Hydrologic Lab

Coweeta Hydrologic Lab is a U.S. Forest Service Research Station that was established in 1934 to investigate different forest management activities on water quality and quantity. Today Coweeta Hydrologic Lab has expanded its mission and partners with colleges and universities through the University of Georgia's LTER (Long Term Ecological Research) Program. The "Schoolyard" initiative has been funded annually since the 1998-1999 school year by a supplemental grant from the National Science Foundation to the core Coweeta LTER grant. The goal of this initiative is to impress the importance of long-term research and environmental awareness into the curriculum of K-16 science instructors.