

# Fostering Eco-Literacy

## One Library's Take on Environmental Learning

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Last year, through a Library Services and Technology Act (LSTA) Grant for \$28,000 from the South Carolina State Library, the Georgetown County Library sparked a shift in the thinking of local young people by involving them in informal science learning activities. The funding proposal centered on technological approaches to ecological studies. The result was the multifaceted Twenty-First-Century Skills for Eco-Literacy project.

This originated from the basic idea of purchasing eco nature backpacks that could be checked out by families to explore the natural environment. The backpacks would contain binoculars, specimen jars and tweezers, scoop nets, backyard field guides, journals, and more. Although geared for backyards and neighborhoods, they could be easily expanded and repurposed for field trips to interactive environmental sites throughout our county and beyond.

Partnering with a number of nature-based agencies and nonprofit groups, we involved middle school and high school students in excursions including forest, marshland, river, and ocean locations. Students visited the Center for the Birds of Prey, the Waccamaw National Wildlife Refuge, the Winyah Bay National Estuarine Research Reserve, and other similar sites. Such places featured field studies, wet labs, scientific demonstrations, expert-led discussions, and other approaches related to South Carolina Science Standards. Scientific staff from these facilities visited our branch libraries for follow-up presentations.

During these ecological field trips, the teen explorers created original digital video productions. Expert filming depended

on learning new skills in videotaping workshops that were scheduled for the students before the field trips. Our public services librarian, who has a background in broadcast journalism, taught these classes.

The teens learned how to use digital video gear, including cameras, lights, green screens, and editing equipment. Interviewing techniques—such as asking questions skillfully and considering answers—were part of the training. The students produced six short films based on their experiences “out in the wild.” These films remain available on the Georgetown County Library’s YouTube channel ([www.youtube.com/user/GeorgetownCountyLibr/videos](http://www.youtube.com/user/GeorgetownCountyLibr/videos)). During the course of the project, the films were viewed more than two thousand times.

Our public library staff creatively wove the eco-literacy idea into our teen technology program at each of our branch libraries. Our teen tech librarian had come to work for us from the video and board game industries, so he had the appropriate expertise for this work. He and his assistant fashioned ecology-themed escape rooms with puzzles and other challenges.



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Custom-made kits included a three-digit locked box, a directional lock, a word lock, a key lock, a flash drive, a UV flashlight, an invisible ink pen, and more. Youngsters also navigated their way through eco-related kits such as “The Swamp,” “It’s a Jungle in Here,” and “Weather Wizard.” They likewise became engaged in game design camps and in a game board design club to create actual games about environmental topics. In so doing, they experienced the twenty-first-century skills of collaboration and team building, problem solving and critical thinking, communication and inference abilities, and inquiry-based learning.

As background support, we purchased ecology books for each branch to enhance our science collections, nature backpacks, and teen technology centers.

Minecraft was expanded at each of our libraries. Kids were able to communicate and collaborate through our multiplayer server. Multiplayer technology encourages teamwork and pulls together diverse youth. The young people worked together to create a new world: reshaping the best of the old into a wondrous novel environment. We also supported their efforts by purchasing a series of related Minecraft books.

The LSTA grant allowed us to expand our current LEGO League Club and establish LEGOs at each of our rural libraries. We incorporated ecology-based LEGO field kits into learning experiences such as “Animal Allies” and “Trash Trek.” We also purchased LEGO robot Mindstorm EV3 brains. We conducted LEGO robotic workshops at each of our libraries with emphasis on building and programming robots.

## Bring on the Drones!

What kid—or adult for that matter!—doesn’t love a drone? That component was enhanced by an effective collaboration between the Georgetown County Library and the Georgetown County Emergency Operations Center. We offered workshops presenting information about rules and regulations that govern the ownership and operation of drones. The Emergency Operations Center manager also explained and demonstrated the benefits of drone technology in Georgetown County. He demonstrated how such equipment could be essential during natural disasters like hurricanes, forest fires, and floods.



These curious students study an insect.

We acquired an industry-standard DJI Phantom 4 drone as a demonstration model and for actual use during future times of crisis. We also purchased LEGO Flybrix kits so kids and parents could experience the excitement of building and flying smaller drones.

About 800 diverse students were stimulated by this STEM project. Our population of 51 percent white and 42 percent black was mirrored in overall youth participation. Although a smaller contingent at 6 percent countywide, our Hispanic audience was nevertheless especially active in all programming.

We are, of course, continuing many of the activities, even after the grant period. During one robotic workshop, a ten-year old girl exclaimed, “I am so good at this! Who knew?”

Another student said, “Oh, my gosh; you are combining LEGOs with drones? This is the BEST EVER!” Another trumpeted, “I am so going to be a nature reporter. Is that a thing?”

One eighth grader on the way to the Sewee Shell Mound Interpretive Trail even proclaimed, “I don’t know where we are, exactly, but I like it here!” That’s certainly the quintessence of scientific learning! 🐛