2015 CEEF Institute Teacher Reports on Student's Stewardship Projects

As was mentioned earlier, 28 out of 28 teachers developed detailed PowerPoint presentations which photo-illustrated their student's stewardship projects. The following outcomes of the stewardship projects highlight the significant benefits to the natural and human-built environment, as well as the educational benefits reaped by the students as a result of their participation in the environmental educations activities and the stewardship projects.

Benefits to the Natural Environment

-Saved water on campus by replacing dead vegetation, which died from the drought, with native plants which require less water
-Germinated native oak acorn seeds and planted them with help from TreePeople
-Collected recyclable bottles and paper, twice a week, on campus
-Planted a campus vegetable and herb garden and used recycled plastic water bottles for containers
-Re-purposed plastic water gallon jugs as planter boxes for growing collard greens, tomatoes, kale and herbs
-Collected and tested Los Angeles river water for pH and dissolved oxygen, participated in a river cleanup, and then educated the community
-Developed and implemented an action plan to address identified areas of student's weaknesses in knowledge, and engaged in environmentally friendly practices regarding water use, trash disposal, transportation, and recycling

Benefits to the Human-Built Environment

-Collected plastic bottles and aluminum cans and sold them to make money to buy plants
-Collected and traced the origin of campus and community trash that often pollutes watersheds
-Adapted *Project Aquatic WILD* activity, "What's in the Water," to raise awareness of the pollutants in the Los Angeles River
-Studied landfills and made posters about hazards of leaching pollutants into groundwater and then did experiments on decomposition rates of organic and inorganic objects in soil.
-Conducted audits on water, paper, and electricity use on campus and then drew qualitative posters on water audit results and promoted recycling to other students

-Learned about low-flow shower heads and how to obtain them from local utility for free
-Designed energy efficient home floor plans using architectural technology and constructed a to-scale model to show fellow schoolmates
-Constructed solar cells and tested them using UCLA's nanoscience materials
-Tracked use of electricity at home and presented the results to other students at their school
-Placed plastic bottles along edge of school landscaping to prevent soil and water runoff.
-Conducted student surveys to determine campus-wide needs and found that the lack of bathrooms was the number one concern: only four bathrooms for 1,900 students! So students calculated walking time to bathrooms, wait time to use the facilities, analyzed their data and wrote petitions, held stakeholder meetings, and advocated the campus needs to their school principal, coaches, faculty, as well as their fellow students.
-Created posters about street runoff pollution and made class presentations to younger students in their school

Teacher's Observations of Students in EE Activity and Stewardship Project

- Held a parent Eco Night and an Earth Day Fest for students and parents and shared the results of their stewardship projects

- Created a "Digital Storybook on the Birds of Lake Balboa" and shared it with schoolmates.

- Applied California's Common Core Standards by having students "make claims about what they might see and why?" in their lab experiments on landfill decomposition

- Engaged in rich discussions about how precious our water resources are and how we need to preserve it on campus

- Created posters on environmental topics and gave presentations on Earth Day to fellow students

- Promoted a school-wide poster contest on Planet Earth which generated widespread participation on earth-friendly topics such as: "Explore then Restore;" "Mulch;" and "Bottled Water is Wasteful"

- After Earth Day, school campus became cleaner as students took more responsibility and did more recycling

- Generated student PowerPoint presentations and gave oral presentations on water quality, emphasizing biomagnification

- Posters were made from recycled bottle caps: one said "Every Day Counts"

- Categorized water usage at home and school, conducted personal and family water use audits, interviewed school administrators about water use practices, and wrote statements on what they could do to conserve and save water

- Students decided to form an Environmental Club for 2016 as a result of participation in this year's stewardship project

- Students issued "green tickets" to teachers who remembered to turn off their lights and "red tickets" for those who forgot
- Students sponsored an "everyday morning public announcement" on campus
- Through a garden project, students learned about life science concepts, such as photosynthesis, pollination, ecosystems, global warming, and caring for the environment
- Re-purposed plastic forks and made a trellis to grow blackberries and snap peas
- Students contacted and collaborated with Friends of the Los Angeles River, Audubon Society, National Recreation and Parks Association, and other organizations to implement their LA River stewardship project
- Students identified trees on their school campus and posted the tree's GPS coordinates, as well as the condition of the trees, and then shared their knowledge with 4th and 5th grade students on their campus
- Gathered and analyzed Los Angeles precipitation data and participated in activism and outreach, including writing the Los Angeles Mayor's office to encourage him to speak more about the current drought in the news media
- Assessed arguments and solutions from multiple viewpoints regarding the use of single-use petroleum products (i.e. plastic bags) and gained deeper understanding of global citizenship and responsibility
- Art and biology teachers swapped classes. They introduced a lesson in ecology to the art students, and a lesson in watercolor painting to the biology students after taking the students on campus nature walks, conducting research, holding discussions, and writing about losing a species from an ecosystem
- Campus audit was performed through soil testing, temperature data collection, cloud observation and gardening
- A School Beautification Day was held after tallying trash around the campus during different times of the day and week with the help of the student council. Then posters and flyers were circulated on campus, and in the community, to encourage greater participation in Beautification Day.
- Followed the Project Citizen Model to identify the current problem of water shortage, examine alternative solutions, design a policy, and implement an action plan
- Students researched CA state redwood parks and created a collaboration Google Map and drew lines of the park border and included descriptions and pictures
- Created a climograph of Redwood Park and plotted its temperature and precipitation data using Google Spreadsheet, and then compared the climograph with the local area climate data to engage other students on campus through Google Moderator to design realistic solutions to maintaining a campus redwood grove
- Participated in student-generated song/word contest about EE and Stewardship
- Created a one-act vignette for 20 kindergarteners, "How the Wolf Learned to Save Water"

- Conducted a campus-wide assessment to determine the beautification needs and mapped the surrounding community to determine who could help rectify the campus problems of trash and refuge and obtained a grant from the Jane Goodall Foundation to buy plants and other building supplies to re-purpose salvageable materials
- Made bird feeders and bird baths from recycled materials and educated the school community about how litter can harm birds
- Conducted laboratory tests on sources of drinking water from around their campus
- Participated in a Recycling Article Jigsaw, made "Infographic" poster presentations, set up and distributed recycling bins donated by Tree People and placed them next to school library and classrooms