

Connecting Students With Storm Water

Getting pollution prevention education down to a science

By **Namju Cho**

Have you ever tried to speak to a group of 300 third-grade students? It is never easy to get everyone's attention and focus. Then try teaching them the concept of storm water pollution prevention. Believe it or not, it is possible not only to get them to listen intently, but also to get them excited about the issue and to take action.

S. Groner Associates (SGA) has been partnering with the Malibu Foundation

for Environmental Education (MFEE) for the past 15 years to conduct fun and interactive school assemblies, tailored to different grade levels, that have generated positive feedback and several cleanup efforts. As an integral part of many National Pollutant Discharge Elimination System (NPDES) permits, school outreach on storm water issues remains a high priority for many municipalities. The assemblies are the brainchild

of Michael Klubock, founder of MFEE, who developed the presentations and conducts assemblies, and for other jurisdictions such as Riverside, Calif., trains presenters to lead assemblies.

Between July and December 2011, SGA conducted 20 assemblies in 11 schools throughout Riverside County, reaching 3,333 students in grades one through six. Similarly, the City of Los Angeles Stormwater Program, which



SGA and MFEE conduct school assemblies tailored to different grade levels to boost student cleanup efforts. *Photo courtesy of SGA*



In 2009 and 2010, SGA visited a total of 16 schools in San Bernadino County, three of which later conducted their own clean-ups on campus. *Photo courtesy of MFEE*

In some Los Angeles schools, the school year ends in a beach cleanup involving 6,300 students, teachers and volunteers. *Photo courtesy of MFEE*



SGA also manages, visited a total of 32 schools and educated 10,464 students between July 2010 and June 2011 through this partnership. In San Bernardino County, Calif., where SGA last conducted school assemblies during the 2009-2010 fiscal year, SGA visited a total of 16 schools and educated 6,032 students. Three of the schools conducted clean-ups on campus, during which 501 students collected approximately 63 lb of trash.

SGA has received positive feedback from teachers who attended the assemblies.

“The presentation was excellent. The video presentation involved the students and made the lesson more valuable. I would appreciate sharing this with future classes,” said Stephan Miller, a teacher at Rancho Elementary School in Temecula, located in Riverside County.

Carol Macdonald, a teacher at Eastvale Elementary School in Corona, also in Riverside County, agreed. “Students loved the video presentation. The presenter was fun, interesting and entertaining,” she said.

Others pointed out the presentation’s accessibility to non-native English speakers. “The visual representation of the pollution and healthy land and animals were great for our English learners,” said one teacher from Avalon Elementary School in Perris, located in Riverside County.

The school outreach presentations are based on a classic teaching model that connects students’ actions to local storm water pollution issues.

The model is simple:

- Show them the things they love (animals, aquatic life, pets, friends, etc.);
- Show them that the things they love are being damaged;
- Show them how they are being damaged through the storm water drain; and
- Provide a call to action.

To have a lasting impact, SGA conveys that the students’ efforts to prevent pollution can and do change the world, and gives them an opportunity to act. This increases the potential for instilling an environmental ethic that will last

into adulthood.

The presentation opens with questions like, “Who likes to breathe?” and “Who likes to go to the beach?” to immediately capture the students’ interest and encourage active participation. The presentation then gives them an understanding of how storm water pollution prevention relates to their daily lives. It connects storm water issues to breathing, which everyone does; having fun in the water, which most children enjoy; and the foods they eat, like fish sticks, which many children love.

The educational, permit-specific and interactive 45-minute presentation consists of a sequence of about 300 images of animals and natural landmarks familiar to the students (e.g., Mt. Rubidoux in Riverside County or the beach in Los Angeles) and boils down to key messages that are repeated several times. It ends with a concrete call to action that lets students know they can do something to help.

Key messages on why it is important to keep water clean include:

- So plants and animals have clean air to breathe;
- So we can swim in it and have fun; and
- So we have clean fish to eat.

Calls to action—what the students can do to help—include:

- Organizing a cleanup;
- Recycling rather than littering; and
- Using a broom to clean rather than water.

SGA and MFEE look for ways to tailor the presentations to Riverside County and cities from the coast to the Mojave Desert to make the presentations as watershed-specific as possible. For example, SGA worked with city coordinators in San Bernardino County to localize the presentations. SGA's coordination with the city of Chino Hills, Calif., in a presentation to Los Serranos Elementary, allowed a former student (now a teenager) to talk about his own environmental projects, making him an important role model for current students.

As follow up to the presentation, SGA supports teachers who would like to organize a clean-up. By linking the school presentations with clean-ups, these connections become more relevant to students and provide teachers with the opportunity to leverage science and math California State Standards activities.

In Los Angeles, school assemblies throughout the year culminate in a massive beach cleanup in June where about 6,300 students, teachers and volunteers congregate to clean up the beach and demonstrate their commitment to keeping the ocean clean.

SGA's approach to ensuring appropriate measurements of effectiveness includes the following:

- Tracking the number of schools visited and students in the assembly programs;
- Collecting evaluations from teachers after assemblies;
- Taking photographs of outreach as it is being conducted; and
- Monitoring continued participation of students in clean-up activities, such as number of

pounds of trash collected during clean-ups.

The teacher evaluations provide the best anecdotal feedback for the program. These evaluations indicate how well the information fits with existing curricula, what students' reactions were, the level of student involvement and general comments. One of the most encouraging results reported by teachers in their evaluations of the program is the continued participation

of students in clean-up activities. Monitoring this provides an indication of how school education efforts are affecting model behavior. **[SWS]**

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