

New Haven Unified School District

*Bringing Science to Life for Students, Teachers and the Community*

Report Period: 08/01/06 – 01/31/07

A. Introduction:

*Bringing Science to Life for Students, Teachers and the Community* engages and energizes students in learning science and the protection of the SF Bay Watershed, provides staff development for teachers and community outreach.

B. Purpose:

Increase student achievement in science on the California State Science Test, increase student academic and cognitive skills in science, writing, mathematics, oral communication and technology. Improve the quality of teaching by teachers and increase community awareness of local pollution and watershed protection.

C. Approach:

Starting in August, four (4) teachers were trained in Marine Activities and Resource curriculum in ocean studies and traveled to the Fitzgerald Marine Reserve for field study in preparation for fieldwork later in the year. In September, 120 students started with a marine science pre-test to ascertain prior knowledge of marine science and environmental pollution. Teachers designed curriculum and started watershed instruction including; designing a watershed, making a

watershed in your hand, interactive vocabulary work, water cycle, water conservation and culminating in a water test to measure students' knowledge.

Students then learned about non-source point pollution and observed garbage and debris entering local storm drains. Using their knowledge of watersheds, students tracked debris to a local creek and observed creek garbage and debris on two separate occasions and hypothesized on its origin. Students, community members, parents and teachers participated in the creek clean up. Students created brochures, which were entered into the Storm Drain Brochure contest. Watershed Adventures and Union Sanitary District did classroom presentations on watershed awareness and wastewater treatment. Teachers collaborated on tide pool research projects where curriculum and materials were designed. Students were explicitly taught about tide pool organisms and using Big Six Research Methods learned about the Green Sea Anemone and were guided through a formal research project. Students then visited the Fitzgerald Marine Reserve to observe the Green Sea Anemone in its natural habitat.

Teachers collaborated and created the B-WET calendar and calendar donations were solicited in late December. Students are currently finishing their independent research projects on marine mammals, seabirds, or reptiles with special emphasis given to their protection. Students are also learning fundamental oceanography such as; currents, weather patterns, properties of seawater in preparation for their whale watching cruise in March and April. Teachers met for mid-term progress evaluation and parent surveys were distributed. Students were given a mid-term marine science test.

D. Results:

Students collected over 250 lbs. of garbage including tires, bowling balls and coconuts during the creek clean up.

150 B-WET Calendars have been sold starting our grants self-sustained effort.

Students have scored an average of 84% on curriculum imbedded water tests.

1. Mid-term marine science test results:

Knowledge of Watershed – Increase of 75%

Parts of a watershed – Increase of 78%

Storm drain knowledge – Increase of 34%

Storm drain pollution – Increase of 25%

Storm drain effect on creek – Increase of 25%

Water pollution – Increase of 20%

Tide pool and tide pool organism – combined results - Increase of 120%

Marine Mammals – Increase of 32%

Seabirds – Increase of 6%

Seabirds and health of the ocean – Decrease of 6%

Ocean and environment – Decrease of 3%

2. Parent Survey - Ninety parents were surveyed about project impact with the following results:

My child has learned about the marine environment – 90% responded agree

My child talks about marine life or ocean studies at night – 65% responded agree

My child talks about conserving or protecting the ocean – 52% responded agree

My child talks about storm drains and pollution – 56% responded agree

When asked which activities were the most meaningful most parents chose the creek clean up, the fieldwork at the Fitzgerald Marine Reserve and classroom instruction on pollution and marine life as the most meaningful.

E. Comments and Notes:

*Cheri Benafield, working with students during research phase:*

“I have spent some time working with the students in Ms. Pratt’s fifth grade classroom during the past month. The students have been working on research projects relating to sea life... I was so impressed with the results! All the students were self-directed and very interested and engaged in researching these animals. I was especially impressed with students that were obviously not proficient fifth grade readers. They too, were locating books that were provided at their reading level, able to find the answers to their questions, and motivated to work at the computer to put their answers into outline form. Writing a “research paper” looked like lots of fun in Ms. Pratt’s fifth grade classroom.”

*Ms. Pena - Parent* – “This is the one school year that Savannah constantly talked about what she learned in science. Science has become one of her favorite subjects whereas in the past it was not.”

*Tracie Noriega - Principal* - “The opportunity to have the BWET grant has been truly amazing for both my students and staff. It has afforded opportunities that most of my students would not get to experience. The creek clean up day helped students to realize that they personally can be responsible for our environment. Learning about tide pools and ocean animals has become such an interest that in the near future, we are sure to have more Oceanographers. Our 5<sup>th</sup> grade

students are engaged and amazed at all the information. I have compared them to veritable sea sponges just soaking up all the facts. The excitement about the whale watching trips is mounting as our students learn about marine mammals. Students have been also extra aware of their behavior and are up to the challenge of showing responsibility. Cabello Elementary School has definitely benefited tremendously from having this grant and Ms. Kimberly Pratt.“