



Monterey Bay Sanctuary Foundation • Multicultural Education for Resource Issues Threatening Oceans (MERITO) Integrating Multicultural Environmental Education in Extended Learning Programs



MERITO Academy



Priority Area

Professional Development in the Area of Environmental Education for Teachers

Target Audience

Elementary and middle school teachers and youth leaders serving culturally diverse and underrepresented 5th – 8th grade students; 392 students served in 2006-2007

Goals and Objectives

Goal

With the overall goal to inspire protection and responsible stewardship of water resources, MERITO seeks to deliver bilingual outreach programs and materials that successfully inform Latino residents about threats to marine and coastal environments and what they can do. Through the MERITO Academy we provide a training workshop for teachers with guidance in facilitating communication with field experts, and support in the integration of the MERITO Academy curriculum into other programs.

Objectives

1. Increase awareness of the Sanctuary and its partners;
2. Increase awareness of watershed and marine issues;
3. Increase positive attitudes towards nature;
4. Increase frequency of positive environmental behaviors;
5. Increase knowledge of techniques for engaging English language learners
6. Provide pedagogical tools to teach ocean literacy to multicultural youth.

Evaluation plan

Critical questions

1. What, if anything, are teachers learning from the training?
2. What, if anything, are students learning from the MERITO Academy?
3. How can the program improve?

Evaluation tools

- Teacher pre and post training surveys, conducted in English and analyzed as a cohort using qualitative and quantitative methods.
- Student pre and post program tests, conducted in both English and Spanish and analyzed as a cohort using qualitative and quantitative methods.
- Using drawing to evaluate changes in understanding the concept of watershed.

Partners Alisal Union School District • Boys & Girls Clubs of Monterey County (BGCMC) • California State Parks, Monterey District • California State University, Monterey Bay – Earth Systems and Science Program Internship Program • California State University, Monterey Bay - Moss Landing Marine Labs • California State University, Monterey Bay - Recruitment In Science Education (RISE) • California State University, Monterey Bay - Return of the Natives (RON) • Camp S.E.A. Lab Monterey Bay • Channel Islands National Marine Sanctuary (CINMS) • City of Watsonville - Parks and Community Services • City of Watsonville Public Works Recycling Education Department • Consortium for Oceanographic Research and Education (CORE) • Monterey Bay Sanctuary Foundation • Elkhorn Slough National Estuarine Research Reserve (ESNERR) • Monterey Bay Aquarium, Free to Learn Program • Monterey County Office of Education (MCOE) • Pájaro Valley Unified School District (PVUSD) • Save The Whales • Watsonville Wetlands Watch • Wetlands Educational Resource Center

Project Overview

What

The MERITO Academy is a year-long, bilingual, After-school Science Program focusing on watershed and ocean related issues. It offers inquiry-based, hands-on field and in-class experiences, often assisted by scientists and experts, exposing students to careers in science and encouraging pride and stewardship towards their local environment.

Who

This program serves culturally diverse and underrepresented 5th through 8th grade students. The MERITO Academy provides teaching resources, on-site staff support, and 3 days of professional development for teachers and youth leaders who serve multicultural underrepresented students.

Why

The MERITO Academy responds to a community-expressed need for ongoing ocean and watershed science programs, and a broader exposure of Middle School students to careers in these fields within our region. This is especially relevant to the Latino communities in California, which are largely underrepresented in these professional fields, while children often have to compromise their science learning at school in order to improve their English language proficiency.

Where

The MERITO Academy is currently implemented at schools and after school programs in Monterey, Santa Cruz, Santa Barbara, and Ventura counties along the Central and Southern California Coast.

External Evaluation Highlights

Students

- Improved understanding of the concept of watershed and its connection to the ocean
- Improved ability to identify sources of pollution and ways in which the sanctuary can get polluted
- Improved ability to identify and share actions to better protect the ocean and water resources
- Improved ability to identify jobs and careers related to science and the ocean
- Increased visitation to natural sites
- Improved knowledge about the role and programs of the Monterey Bay National Marine Sanctuary

Teachers

- Improved knowledge about the role and programs of the Monterey Bay National Marine Sanctuary
- Improved ability to identify and describe sources of pollution and ways in which the sanctuary can get polluted
- Improved knowledge of techniques for engaging English language learners.

Products

MERITO Academy program

- 21 locations: 8 public school after-school programs, in 6 classrooms, 2 GATE programs, the Boys & Girls Club, Salvation Army Youth Center, Recruitment in Science Education, and the City of Watsonville's Youth Center at Ramsey Park
- 425 students served from August 2006 – June 2007
- 45 full scholarships funded and hosted by Camp SEA Lab, providing MERITO students with the opportunity to attend week-long day and residential summer camp sessions from June-August 2007.

MERITO Academy Professional Development

- 24 leaders attended and completed the 2-day MERITO Academy Training in August 2006
- 7 additional teachers were trained to run the MERITO Academy during special in-services
- 17 participants attended and completed the 1-day MERITO Academy Follow-up Training in February 2007

MERITO Academy Activity Guide

- Aligned to California State Standards in mathematics, science, language arts, visual and performing arts, and English language development.
- Six modules including a total of 35 tested lesson plans
- Half of which can be conducted in the field (for instance, sand crab monitoring, mudflat lab, tide pool exploration, and water quality testing)
- Some of which become local community-service-learning projects, such as storm drain stenciling, beach and neighborhood clean ups, and native plant restoration.
- A teacher resource list highlighting existing curricula, books, videos and websites to supplement or extend lesson plan activities, and a contact list of local scientists partnering with MERITO to provide support for local field activities.

Lessons Learned

Teacher Recommendations Based on Evaluation Results

The following are the evaluator's recommendations regarding the teacher training portion of the program.



1. Connect teachers with other potential funding sources for executing the curriculum, such as the Harden Foundation or Community Foundation for Monterey County.
2. Facilitate a process to make logistics for field trips easier.
3. Discuss suggestions for easing school teachers' interaction with and the expectation of school administrators.
4. Continue to be responsive to questions outside of the workshop (several teachers commented how helpful this was).
5. Provide ongoing information and updates to teachers about new materials, local occurrences, opportunities and additional information.
6. Continue emphasis on teaching techniques of the material in addition to the content, particularly hands-on learning activities that can be done in neighborhoods.

Student Recommendations based on Evaluation Results

The following are the evaluator's recommendations regarding the student portion of the program.

1. Change data collection tools to fewer open-ended qualitative questions.
2. Add emphasis on actions to do, not just actions not to do.
3. Add emphasis to lesser known actions that impact water quality including food choices and influencing others.
4. Focus attention to other roles of MBNMS in addition to protecting animals.
5. The high emphasis on pollution and ways that the water can become contaminated may take time from understanding the importance of the watershed and the relation to other parts of the environment (this may be a function of the instrument too, and not of the actual training program).
6. Get direct student process feedback on the program, not just the changes in their amount of knowledge.
7. Encourage elementary students to express themselves in whichever language they are most comfortable in when learning new material.