



Ocean Science Explorers Initiative



Initiative Narrative

From December 2009 through February 2010, Ocean Discovery Institute **provided classroom-based, experiential science education to 546 low-income students and 24 teachers**, including professional development for classroom teachers, hands-on activities, thematic curriculum, books and materials, a field experience to study conservation concepts and an environmental service project that students implement at the completion of the program.

The initiative was expanded to reach two new schools this year. This winter, the program was **completed at all 4th Grade classes** and begun at all **3rd Grade classes at five elementary schools** in low socio-economic status communities. Approximately 50% of work has been completed, with the remaining 50% expected to be completed by July 2010.

Summary of Activities:

<p>In-Class Activities</p> 	<p>All students participated in four to five hands-on, interactive, standards-based science lessons in their classrooms led by Ocean Discovery Institute staff. Interactive program content introduced students to science in genuine ways, helping them make connections between science and their own lives and communities.</p> <ul style="list-style-type: none">● 3rd Grade: Students became “<i>Sea-Life Scientists</i>” learning about invertebrate adaptations to the rocky seashore habitat and how coastal habitats are linked to inland neighborhoods.
<p>Field Exploration</p> 	<p>All students participated in one science focused field trip led by Ocean Discovery Institute staff, offering a venue for experiential learning of science content and an opportunity to explore local coastal resources. Field-based learning allowed students to apply their knowledge gained in the classroom and to understand the relevance of science.</p> <ul style="list-style-type: none">● 3rd Grade: Students explored the tide pools at the rocky seashore habitat through four field trips.● 4th Grade students explored wetland habitat at the Chula Vista Nature Center through four field trips, learning about the habitats and wildlife of San Diego Bay.

<p>Environmental Service</p> 	<p>All students participated in a locally-based environmental service project related to the science curriculum and led by Ocean Discovery Institute staff. By participating in locally-based environmental projects, students gained the understanding that they can make a difference, encouraged others to participate in stewardship and increased everyone's ability to increase quality of life within highly urbanized communities. Students learned about environmental issues, the impacts that their actions upstream have on San Diego Bay, and how they can take action to improve water quality.</p> <ul style="list-style-type: none">• In partnership with the San Diego Canyonlands, Inc. 4th Grade students worked with community volunteers to conduct habitat restoration in an urban canyon neighboring their school. Restoration activities varied depending on each canyon's needs and included watering native plants, picking up trash, and enhancing trails. Seven environmental service projects were conducted.
<p>Classroom Teacher Support</p> 	<p>In order to increase the number of teachers who provide quality hands-on, interdisciplinary science education to their students in the early grades, Ocean Discovery Institute provided activities to increase teachers' comfort and facility in science. All 3rd and 6th Grade teachers received supports and classroom materials to enrich and extend their students' science and literacy learning.</p> <ul style="list-style-type: none">• All teachers participated in a curriculum-based professional development workshop led by Ocean Discovery Institute.• All classroom teachers received standards-based lessons linked to the hands-on science activities for use in their classrooms.• All classroom teachers received theme-related books for use with the curriculum units, enabling them to meet language arts requirements.

Problems Encountered and their Resolutions

This winter, the majority of fourth grade environmental service projects were delayed to rainy weather. This was resolved by rescheduling with the schools for January but it cost staff unexpected time to schedule volunteers and instructors.

Activities Planned for the Next Quarter

In the spring of 2010, the 3rd Grade unit will be completed and 5th Grade and 6th Grade units will begin, as outlined below:

- **3rd Grade:** The field exploration and environmental service components will be completed.
- **5th Grade:** In-class activities and professional development workshops will begin.
- **6th Grade:** In-class activities and field exploration components will begin.

Cumulative dollars spent to date: \$15,000

Initiative Outcomes

Ocean Discovery Institute verifies program success based on the outcomes of quantitative and qualitative evaluations led by Roxanne Ruzic, Ed.D., a contracted specialist in educational research. Dr. Ruzic received her doctorate in education from Harvard University. She is an education and research consultant and teaches graduate level courses in research methods for Chapman University.

Content assessments, attitudinal surveys, and interviews were administered and are being entered for future analysis. In addition, student and teacher participation information is tracked.