



May 28, 2010

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Dear Eileen:

On behalf of Ocean Discovery Institute (formerly Aquatic Adventures,) thank you and the Unified Port of San Diego for your support. We are pleased to provide you with an update on our progress and accomplishments in the *Ocean Science Explorers Initiative*, made possible through your contribution of \$30,000 awarded on September 2, 2009 (Document No. 55520).

The *Ocean Science Explorers Initiative* is a science education program that includes direct instruction in the classroom and field and professional development and resources for classroom teachers. Enclosed are the following documents to describe the progress and outcomes of this project:

- 1) ***Ocean Science Explorers Initiative Report:*** The report describes outcomes and enhancements from January 2010 – June 2010.
- 2) ***Mid-Year Report:*** A report highlighting Ocean Discovery Institute's recent work and accomplishments, including the *Ocean Science Explorers Initiative*.

If you have any questions or would like further information, please contact me at (858)488-3849. Thank you again for the Unified Port of San Diego's support!

Sincerely,



Shara Fisler
Executive Director



Ocean Science Explorers Initiative

Initiative Narrative

From March through May 2010, Ocean Discovery Institute provided classroom-based, experiential science education to 1,691 low-income students and 50 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 spring, the program was completed at all 3rd Grade classes and begun at all 5th and 6th Grade classes at five elementary and three middle schools in low socio-economic status communities. Approximately 75% of work has been completed, with the remaining 25% expected to be completed by July 2010.

<p>In-Class Activities</p> 	<p>The In-Class Activities began for all 5th and 6th Grade students, who will ultimately participate 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">• 5th Grade: Students became "City-to-Sea Scientists" gaining an understanding of how water connects ecosystems, how human impacts can affect interconnected ecosystems and about the diversity of careers in science.• 6th Grade: Students became "Time Travelers" using geologic evidence to discover what the Earth was like in the past and the forces that are shaping its future.
<p>Field Exploration</p> 	<p>Field exploration was completed for 3rd, 5th and 6th Grade students. All students participate 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 completed their field exploration, exploring the tide pools at the rocky seashore habitat through four field trips.• 5th Grade: Students looked in-depth at scientific careers while studying local Mission Bay; Students became microbiologists, performing DNA analysis; hydrologists, performing water quality analysis; and engineers, designing, building and piloting ROV's (Remote Operated Vehicles).• 6th Grade: Students completed their field exploration. Students

	<p>visited Torrey Pines State Reserve to study local cliff stratigraphy and topography and the Birch Aquarium where they used visualization technology to “fly” over the Earth’s ocean and learn about their carbon footprint and alternative fuels of the future.</p>
<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"> • 3rd Grade: Students completed their environmental service project, conducting a street cleanup in their neighborhood and painting storm drains with “No Dumping” signs, emphasizing how local actions in urban communities affect their neighborhood environment and tidelands.
<p>Professional Development</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, 5th 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

The biggest problem encountered was in having reliable volunteers and interns, who are crucial to making the initiative successful. The problem was temporarily resolved by staff filling in for missing volunteers and interns, but created a hardship on the organization. Therefore, we have hired an Operations Manager who will focus a third of her time on revamping the volunteer program. In addition, we have begun to work with the University of San Diego to create an internship partnership, increasing the accountability of interns.

Activities Planned for the Next Quarter

In the summer of 2010, the 5th Grade and 6th Grade units will be completed, as outlined below:

- **5th Grade:** in-class activities and will be completed and environmental service projects will be implemented.
- **6th Grade:** in-class activities will be completed and environmental service projects will be implemented.

Cumulative dollars spent to date: \$22,500

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.