





## Program Narrative

The *SEA Series Initiative* is a science education program that includes 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 *SEA Series Initiative* focuses on increasing knowledge of environmental issues affecting San Diego Bay and providing opportunities to take action to improve the health of the bay and its watersheds.

**485 students and 16 teachers from 3 schools in City Heights participated in 5,335 total educational hours through the *SEA Series Initiative*** during the months of September through December 2008. Fourth grade students were provided with the “*Wetland Avengers*” *SEA Series* unit and sixth grade students were provided with in the “*Time Travelers*” *SEA Series* unit.

### Each Unit Incorporates:

<p style="text-align: center;"><b>In-Class Activities</b></p> 	<p>All students participated in four to five hands-on, interactive, standards-based science lessons in their classrooms led by Aquatic Adventures staff. Interactive program content helped all students to retain information and second language learners to better comprehend subject matter. Curriculum is grade level specific, with different curriculum units and activities for each grade.</p> <ul style="list-style-type: none"> <li>• <b>4<sup>th</sup> Grade:</b> 270 fourth grade students became “<i>Wetland Avengers</i>” learning about the importance of the wetland ecosystem and its functions within San Diego Bay.</li> <li>• <b>6<sup>th</sup> Grade:</b> 215 sixth grade students became “<i>Time Travelers</i>” using geologic evidence to discover what the Earth was like in the past and the forces that are shaping its future.</li> </ul>
<p style="text-align: center;"><b>Field Exploration</b></p> 	<p>All students participated in one science focused field trip led by Aquatic Adventures 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"> <li>• <b>4<sup>th</sup> Grade:</b> Students explored wetland habitat in San Diego Bay at the Chula Vista Nature Center.</li> <li>• <b>6<sup>th</sup> Grade:</b> Students visited the Birch Aquarium where they used visualization technology to “fly” over the Earth’s ocean and understand plate tectonics. They also simulated coring techniques to study microfossils.</li> </ul>
<p style="text-align: center;"><b>Environmental Service</b></p>	<p>All students participated in a locally-based environmental service project related to the science curriculum and led by Aquatic Adventures staff. By participating in locally-based environmental projects, students gained the belief that they can make a difference, encouraged others to participate in stewardship and increased their connection to San Diego Bay.</p> <ul style="list-style-type: none"> <li>• <b>4<sup>th</sup> Grade:</b> In partnership with the San Diego Canyonlands, Inc. students worked with community volunteers to conduct</li> </ul>

	<p>habitat restoration in an urban canyon in the San Diego Bay Watershed neighboring their school. Restoration activities varied depending on each canyon's needs and included planting 60 native species, collecting and dispersing native plant seed, and removal of 10 bags of trash.</p> <ul style="list-style-type: none"><li>• <b>6<sup>th</sup> Grade:</b> Students designed and created posters to encourage others to conserve resources and to reduce, reuse, and recycle to benefit their local environment and watershed.</li></ul>
<p><b>Classroom Teacher Support</b></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, Aquatic Adventures provided activities to increase teachers' comfort and facility in science. All teachers received supports and classroom materials to enrich and extend their students' science and literacy learning.</p> <ul style="list-style-type: none"><li>• All teachers participated in a curriculum-based professional development workshop led by Aquatic Adventures.</li><li>• All sixth grade teachers participated in a science-based professional development workshop led by a Scripps Institution of Oceanography scientist.</li><li>• All classroom teachers received standards-based lessons linked to the hands-on science activities for use in their classrooms.</li><li>• All classroom teachers received theme-related books for use with the curriculum units, enabling them to meet language arts requirements. In addition, all sixth grade teachers received a science kit for use with the curriculum units enabling them to provide hands-on scientific learning experiences.</li></ul>

## **Program Evaluation**

Program evaluation was conducted for the fourth and sixth grade units. Evaluation included:

- Pre- and post-program student science content assessments
- Pre- and post-program student surveys to measure attitudinal and behavioral changes
- Post-program student interviews to measure student attitudes, behaviors, and experiences
- Post-program teacher surveys to measure teacher and student experiences

Data from program evaluation is currently being entered and the results will be included in a report after the conclusion of the school year.