

O'NEILL  
**SEA**  
ODYSSEY



# o'neill **SEA** odyssey

2014-2015 survey results  
november 2015



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# About O'Neill Sea Odyssey

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O'Neill Sea Odyssey (OSO) was incorporated in 1996 by wetsuit innovator and surfer Jack O'Neill as a nonprofit organization to provide unique ecology, navigation, and marine science learning experiences to regional students in grades 4 through 6. Since this time, more than 75,000 students have participated in the three-hour, hands-on learning event aboard the program's 65-foot catamaran in the Monterey Bay National Marine Sanctuary and follow-up lessons in the Education Center at the Santa Cruz Harbor.

The primary purpose of the program is to foster awareness of environmental stewardship and personal responsibility among program participants. This is done by delivering an interactive curriculum that emphasizes the connections between land and sea through a multi-disciplinary approach including ecology, biology, and mathematics.

The OSO website (<http://www.oneillseaodyssey.org/>) provides extensive curriculum and learning materials that are designed to introduce students to the topics they will be learning in the program. Teachers and group leaders are encouraged to use these materials with their students before attending the program and afterwards as follow-up activities.

Student groups are required to complete a community service project to earn a trip on the OSO. A community service project encompasses a broad range of activities such as native plant restoration, beach or creek cleanup, homeless garden projects, community environmental awareness projects, school recycling programs, and letter-writing campaigns for environmental causes. Teachers and group leaders are required to submit proof of completion of a community service project, which can be done via the OSO website.

During the July 2014 - June 2015 program cycle, two surveys were administered to the groups participating in the program. Teachers and group leaders were asked to fill out a survey after participating in the program, to get their feedback on the organization and effectiveness of the program, program materials, and the OSO website. The Teacher Survey was revised for 2013-14 program cycle. A second survey was read aloud to the students that asked them (by a show of hands) about their knowledge of, and attitudes toward, the environment. This survey was administered to the students before and after the program, and thereby measured the amount of change in their environmental awareness. The Student Survey was revised in March 2014.

OSO has undertaken the analyses of these two 2014-15 surveys and other program data for use in evaluating the program, further planning, and developing funds for program expansion or replication.



# Research Methodology

## Survey Design and Methodology

In prior years, separate surveys were designed and distributed to different groups of program participants: group leaders, teachers and parents, students, and the OSO crew. For over 5 years, two surveys have been utilized: one was distributed to the teachers/group leaders, and another was administered to the students. Both the Teacher Survey and Student Survey were revised in 2013-14. Each survey is described below and copies are provided in Appendix II: Survey Instruments.

### Teacher/Group Leader Survey

Teachers and group leaders were asked to complete a short survey after attending the O'Neill Sea Odyssey (OSO) program.

In this survey, teachers/group leaders were asked to evaluate the program based on how much they thought the students learned from each of the program areas, including three topics taught on the boat portion of the program, three topics covered in the classroom portion, and one question asking them to rate the students' overall learning experience.

Teachers/group leaders rated these program areas using a scale ranging from learned a lot, learned somewhat, to did not learn at all.



Teachers/group leaders were asked several questions about the OSO website and program materials available from it. They answered whether they had used the teaching materials provided before taking the trip, which online resources they used before the trip, which teaching materials were most helpful in the classroom, and whether they intended to use any of the online Learning Center or Teacher Packet

materials in the classroom after the trip. Finally, they were asked open-ended questions about whether there were any additional topic areas that would be helpful to include in the Sea Odyssey experience and if they had any additional comments.

### Student Survey

The Student Survey was designed to be read aloud to the students, and was administered to them before *and* after attending the program. Students were asked to raise their hands if they agreed with the questions (indicating a "yes" response), and the number of raised hands for each question were tallied.

The Student Survey included six questions. Three questions asked about their general knowledge:

- The ocean is important to my health.
- I know where storm drains lead.
- Most ocean pollution comes from land.

Three questions asked about their behavior:

- I pick up trash from the ground.

- I turn off the lights when I leave the room.
- I share what I know about protecting the environment and ocean with my friends and family.

After attending the program, students were also asked to raise their hand if they agreed with the same three general knowledge questions, if they plan to do the three behaviors listed above and if it was their first time on a boat in the ocean.

## *Demographic Data Collection*

In addition to filling out the survey, teachers/group leaders were asked to provide the name of their school or group, the number of students in their group, and the grade level(s) of their students. To determine the number of repeat participants, when students first arrived they were asked by a show of hands if they had previously participated in the OSO program.

## *Data Analysis*

In this report, most of the data in the analyses came from the OSO Teacher/Group Leader and Student Surveys. However, student ethnicity, level of English fluency, and enrollment in free or reduced price meal programs were estimated using percentages obtained from the DataQuest database of the

California Basic Educational Data System (CBEDS). Using DataQuest, OSO obtained the percentages of each of these demographics for each school participating in this program. For each school group, these percentages were applied to the total number of students in that group to estimate the number of students with these demographics.



Some of the questions in the Teacher/Group Leader Survey were open-ended. Participants were asked to provide comments and suggestions for additional topics to be covered. Although these open-ended questions are not evaluated in this report, all of the responses are provided in Appendix I.

A census approach was used for both the Teacher/Group Leader and Student Surveys. In this type of survey approach, every teacher and student who participated in the program also answered the surveys (as opposed to giving the surveys to only a sample of the participants).

Note that demographic data were not available for every group and not every group answered all of the survey questions. For this reason, the number of groups or students reported in some analyses may differ from the total number of groups and students that participated.

# Data Highlights

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## Demographics

- Between July 2014 and June 2015, 207 groups participated in the O'Neill Sea Odyssey (OSO) program, representing 5,519 students. Group sizes ranged from 5 to 35 students, with an average group size of 27.
- The majority of groups came from Santa Cruz County (38%) and Santa Clara County (32%).
- Approximately 89% of groups were of students between 4<sup>th</sup> and 6<sup>th</sup> grade, the program's target population.
- Seven percent of students had attended the program previously.
- About half (51%) of students indicated it was their first time on a boat in the ocean.
- Based on population estimates, 63% of the students were Hispanic or Latino, 19% were White, 11% were Asian, Filipino, or Pacific Islander, 2% were African American, less than 1% were American Indian or Alaska Native, and 5% were of another race/ethnicity.
- It was estimated that 56% of the students attending the OSO program did not have English as their primary language, a slight increase since 2010-11.
- More than half (64%) of students were receiving free or reduced price meals.
- Approximately 56% of participating groups were lower income groups, 29% were middle income groups, and 16% were higher income groups.

## Website Use

- Seventy-two percent of all teachers/group leaders reported that they had used the online teaching materials provided on the website before their trip, and nearly all of the teachers (95%) intended to use the online teaching materials in the classroom after the trip.
- When asked which online resource the teachers/group leaders used, 90% used the pre-trip education materials (teacher packets) followed by 78% using the safety and important information on the website. The online resource that teachers/group leaders identified as most helpful was the pre-trip education materials (84%)

## Program Ratings

- In every topic area, the vast majority of teachers/group leaders (between 95% and 98%) indicated that their students had "learned a lot."
- Of the three topics learned on the boat, 98% of teachers/group leaders thought students had "learned a lot" in the Marine Science station, closely followed by 96% in the Ecology station, and 95% in the Sailing & Navigation station.
- Of the three topics learned in the classroom, the vast majority of teachers/group leaders again said that students had "learned a lot" in the Marine Science station (99%), followed by the Ecology station (98%), and the Sailing and Navigation station (98%).
- Virtually all of the teachers/group leaders (99%) reported that their students had "learned a lot" from the overall learning experience.

## Student Environmental Awareness

- The Student Survey showed that the OSO program was effective in promoting substantial increases in students' environmental awareness. Before participating in the OSO program, an average of 76% of students agreed with the survey questions overall. After attending the program, this percentage increased to 96%.
- When student surveys were divided by income level, results showed that all groups of students increased their environmental knowledge after attending the program. The students from lower and middle income groups generally had lower overall levels of agreement before the program started than the higher income groups.

# Results

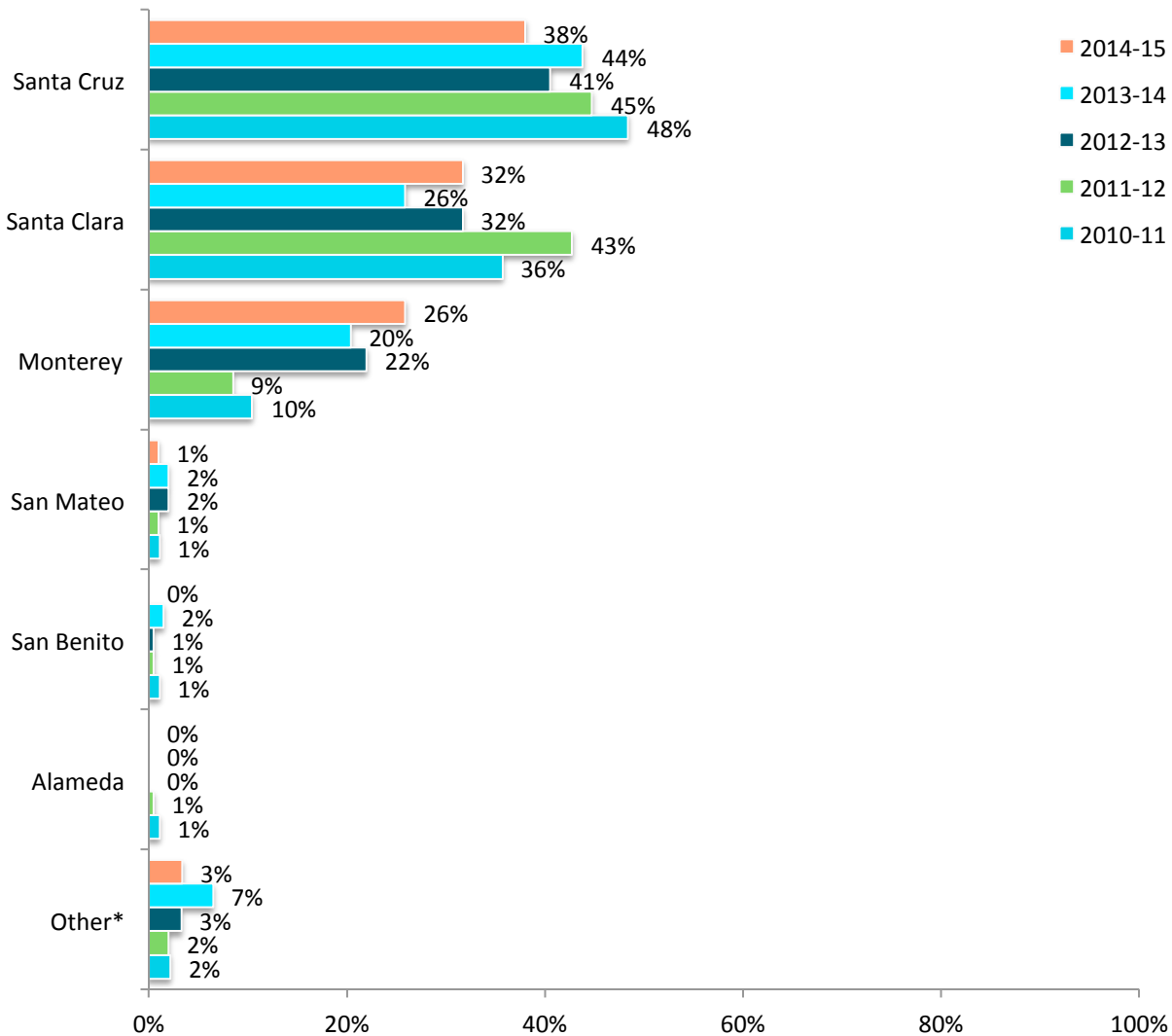
## Student Participation and Demographics

Between July 2014 and June 2015, 207 groups participated in the O'Neill Sea Odyssey (OSO) program, representing 5,519 students. Group sizes ranged from 5 to 35 students, with an average group size of 27.

### Counties of Origin

Most groups came from Santa Cruz County (38%), Santa Clara County (32%), and Monterey County (26%). Between 2008-09 and 2014-15, these three counties have continued to be the most frequent origins of groups.

**Figure 1: Participating Group's County of Origin**



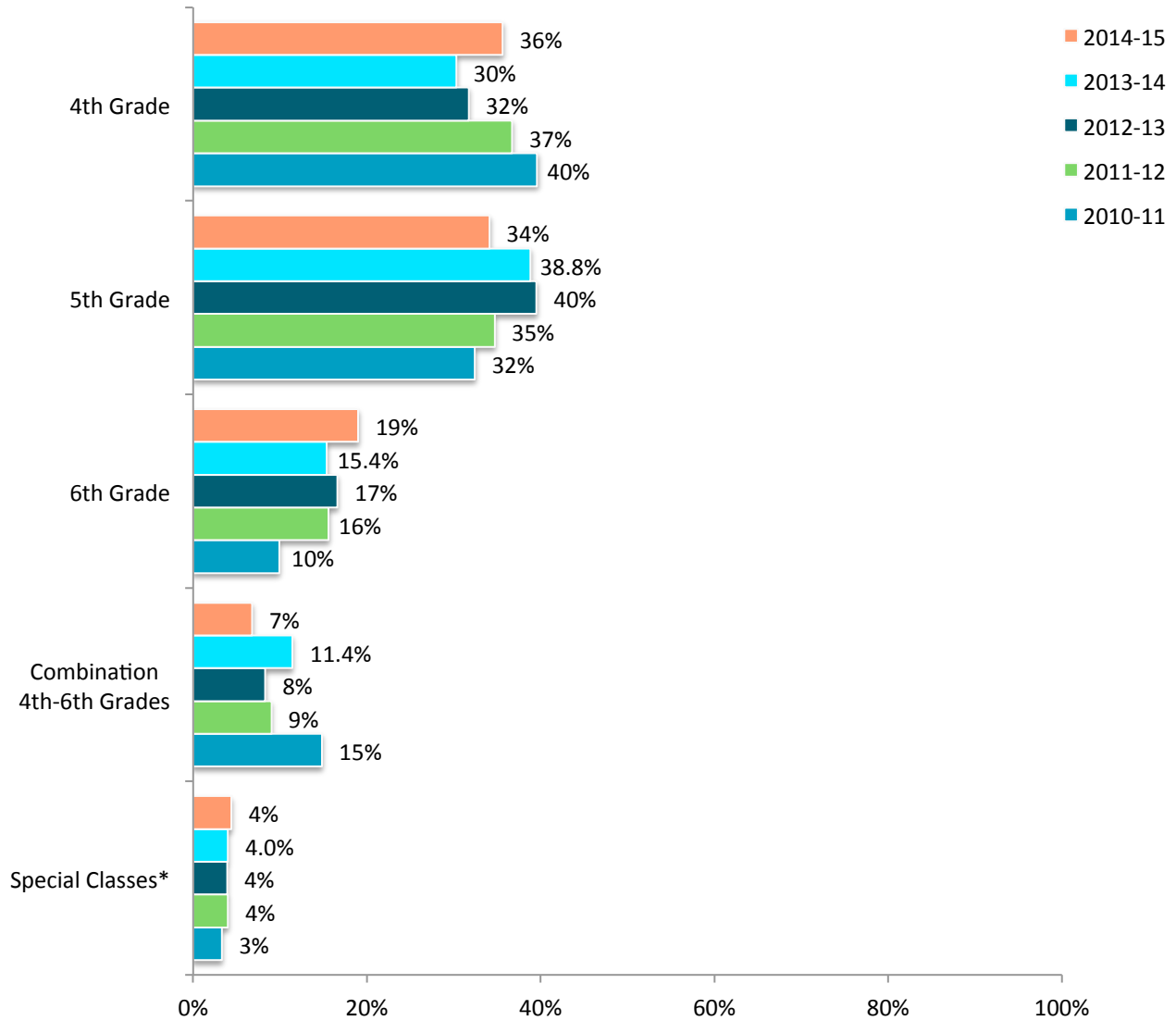
Source: O'Neill Sea Odyssey (2014-15 N=205 groups; 2013-14 N=201 groups; 2012-13 N= 205 groups; 2011-12 N=197 groups; 2010-11 N= 182 groups).  
 \* "Other" counties differ by year but includes the counties of Contra Costa, Nevada, Sacramento, San Francisco, San Joaquin, Stanislaus, Yolo and those where no information was available.

## Grade Levels

OSO's target population is students in the 4th through 6th grades and, in 2014-15, the majority of groups were in this grade range (89%). In 2014-15, the highest percentage of groups were from the 4th grade groups (36%), followed by 5th grade (34%), 6<sup>th</sup> grade groups (19%), and combined 4-6<sup>th</sup> grade groups (7%).

Most groups of students participated through schools, although a few came from community centers and day camps.

**Figure 2: Grade Levels of Groups**



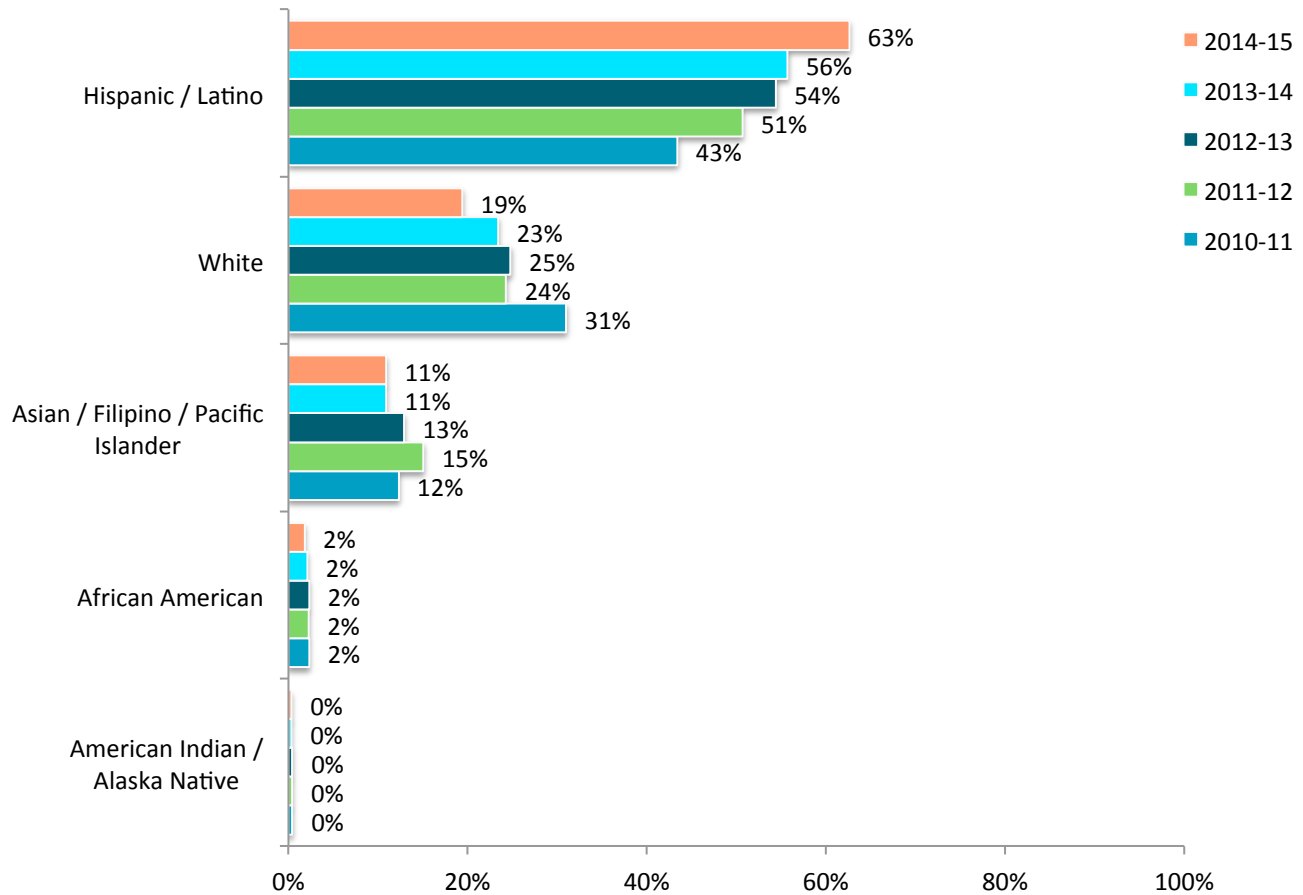
Source: O'Neill Sea Odyssey (2014-2015 N=205; 2013-14 N=201 groups; 2012-13 N=205 groups; 2011-12 N=197 groups; 2010-11 N=182 groups).  
 \* "Special Classes" refers to groups comprised of students in grades other than 4<sup>th</sup> through 6<sup>th</sup>.



## Race/Ethnicity

The race/ethnicity of participants was estimated using percentages obtained from the DataQuest database of the California Basic Educational Data System (CBEDS), based on the year, school locations, and grade levels of the students. In 2014-15, it was estimated that 63% of the students were Hispanic or Latino, 19% were White, 11% were Asian, Filipino, or Pacific Islander, 2% were African American, less than 1% were American Indian or Alaska Native, and 5% were of another race/ethnicity. The percentage of Hispanic/Latino students has increased from 43% in 2010-11 to 63% in 2014-15.

**Figure 3: Race/Ethnicity of Students**



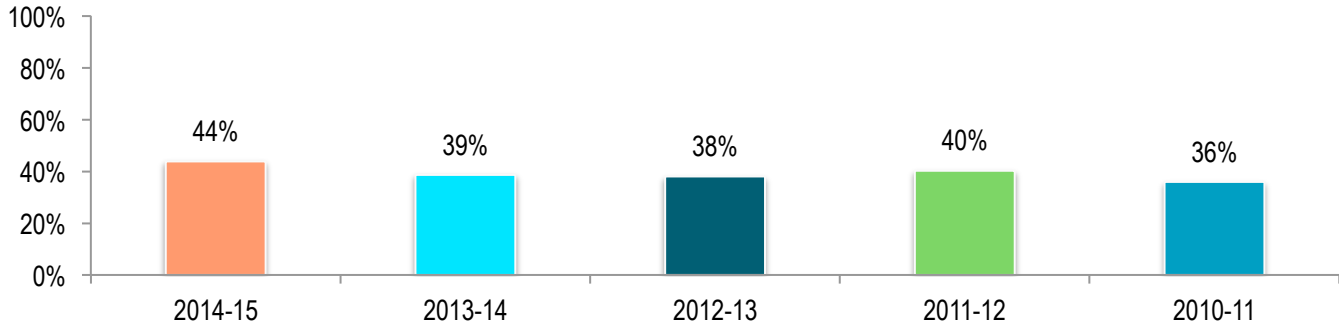
Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2014/15 N=5,519; 2013-14 N=5,201 students; 2012-13 N=5,442 students; 2011-12 N= 5,661 students; 2010-11 N=4,852 students).  
 Note: The "Other" and "Multiple or No Response" categories are not shown in this figure. Percentages may not total 100% for this reason or due to rounding.

## English as a Second Language

Two categories of English proficiency were examined using percentages obtained from the DataQuest database. One category was English Learner (EL), which described students whose primary language was not English, and who had been determined to lack the English language skills necessary to succeed in the school's regular instructional programs. The other category was Fluent-English-Proficient (FEP), which described students whose primary language was not English, but who had met the district criteria for determining proficiency in English.

In 2014-15, it was estimated that 44% of students attending the OSO program were English Learners (EL), and 12% of student participants were Fluent-English-Proficient (FEP). Since 2010-11, the percentage of EL students has increased from 36% to 44%, while the percentage of FEP students has remained relatively stable. When the two groups were combined (EL + FEP), the result showed that in 2014-15, 56% of the students attending the OSO program did not speak English as their primary language, an increase from 46% since 2010-11.

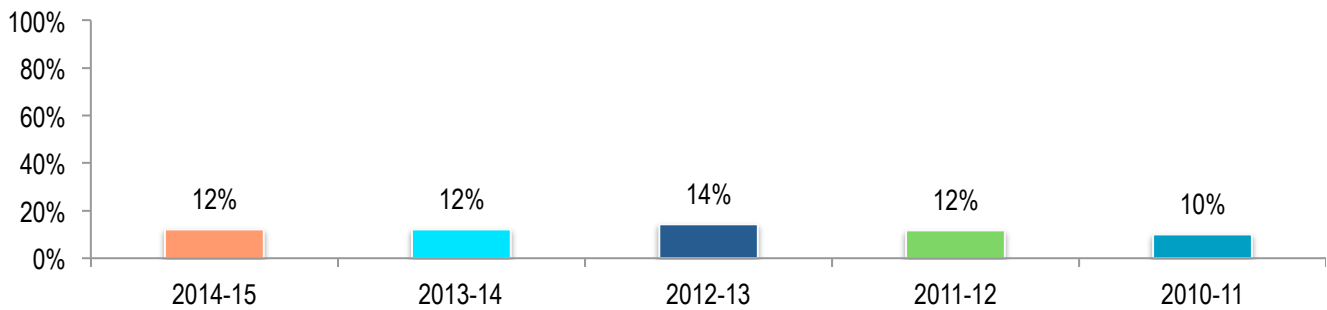
**Figure 4: Percentage of English Learner (EL)<sup>1</sup> Students**



Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2014-15 N=5,519; 2013-14 N=5,201 students; 2012-13 N=5,276 students; 2011-12 N=4,863 students; 2010-11 N=4,852 students).

<sup>1</sup> "English Learner" includes students for whom there is a report of a primary language other than English on the state-approved Home Language Survey and who, on the basis of the state approved oral language (grades K-12) assessment procedures and including literacy (grades 3-12 only), have been determined to lack the clearly defined English language skills of listening comprehension, speaking, reading, and writing necessary to succeed in the school's regular instructional programs.

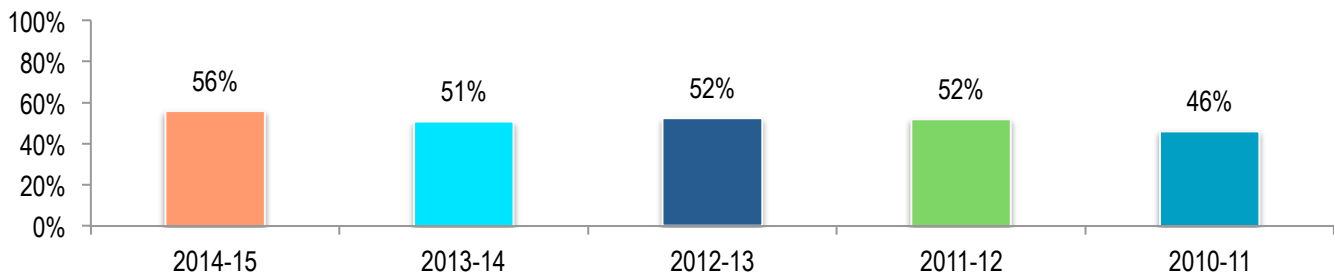
**Figure 5: Percentage of Fluent-English-Proficient (FEP)<sup>1</sup> Students**



Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2014-15 N=5,423; 2013-14 N=5,201 students; 2012-13 N=5,276 students; 2011-12 N=4,863 students; 2010-11 N=4,852 students).

<sup>1</sup> "Fluent-English-Proficient" includes students whose primary language is other than English and who have met the district criteria for determining proficiency in English (i.e., those students who were identified as FEP on initial identification and students re-designated from Limited-English-Proficient (LEP) or English learner (EL) to FEP).

**Figure 6: Percentage of Students Whose Primary Language is Not English**



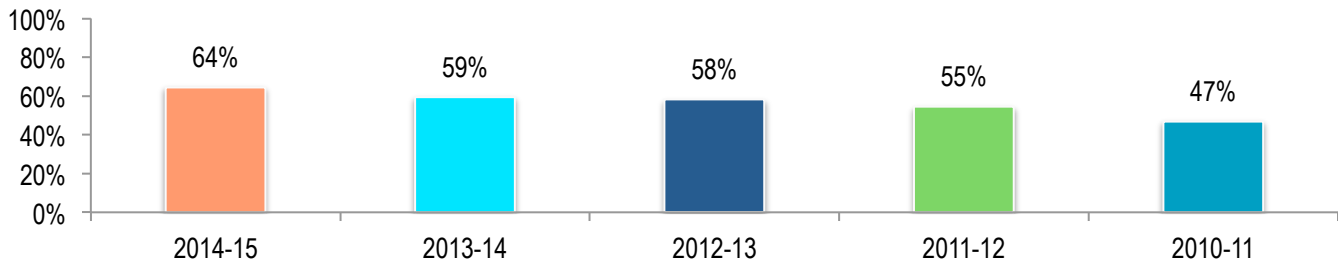
Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2014-15 N=5,427; 2013-14 N=5,201 students; 2012-13 N=5,276 students; 2011-12 N=4,863 students; 2010-11 N=4,852 students).

Note: This analysis combines both English Learner (EL) and Fluent-English-Proficient (FEP) students.

## Free and Reduced Price Meals<sup>1</sup>

Enrollment in federal programs that offer free and reduced price meals to students was used to estimate the percentage of students whose families meet the income eligibility guidelines for these programs. Based on the percentages obtained from the DataQuest database, in 2014-15, 64% of the students who attended the OSO program were receiving free or reduced price meals, an increase from previous years.

**Figure 7: Percentage of Students Receiving Free or Reduced Price Meals**

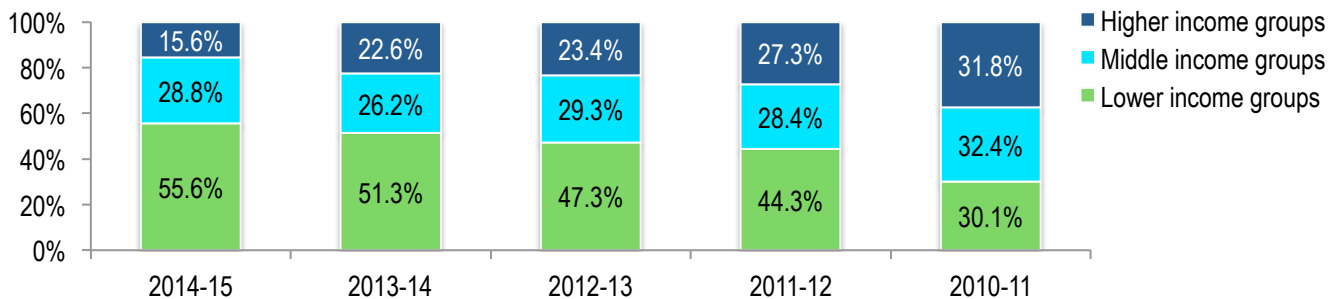


Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2014-15 N=5,427; 2013-14 N=5,201 students; 2012-13 N=5,276 students; 2011-12 N=4,863 students; 2010-11 N=4,852 students).

The OSO program aims to make its learning experiences available to students from all economic backgrounds. The economic levels of the communities from which participating groups came were estimated using the percentage of students receiving free or reduced price meals. Groups with less than 1/3 of their students receiving this benefit were considered higher income, and groups with more than 2/3 of their students receiving this benefit were considered lower income. Groups that fell between these extremes were considered middle income groups.

Using this method of analysis, approximately 56% of participating groups were classified as lower income groups, 29% as middle income groups, and 16% as higher income groups in 2014-15. The percentage of lower income groups increased from the previous year with a decrease in the percentage of higher income groups.

**Figure 8: Percentage of Groups Participating, by Income Level<sup>1</sup>**



Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2013-14 N=195 groups; 2012-13 N=205 groups; 2011-12 N=194 groups; 2010-11 N= 176 groups).

Note: Only groups that had data regarding the percentage of students receiving free or reduced price meals were included in this analysis.

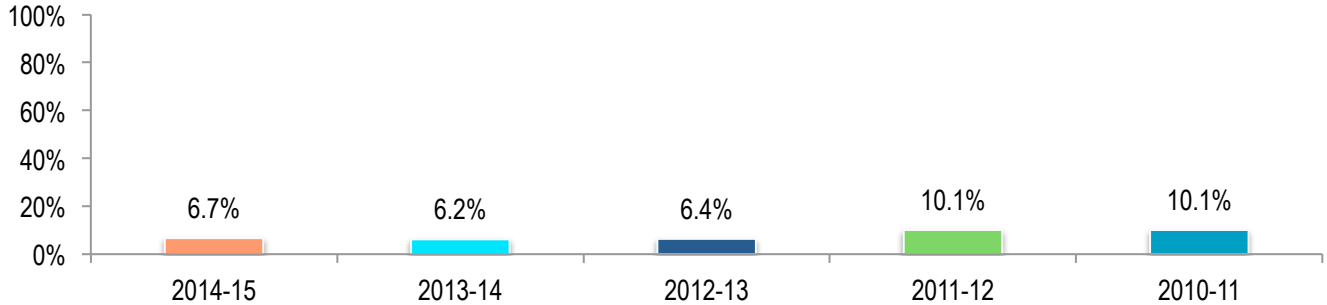
<sup>1</sup>Income levels of the groups were estimated using the percentage of students receiving free or reduced price meals in each group: In Higher Income groups, less than 33% of their students received this benefit; Middle Income groups had between 1/3 and 2/3 of their students receiving this benefit, and Lower Income groups had more than 2/3 of their students receiving this benefit.

<sup>1</sup> Only groups that had data regarding the percentage of students receiving free or reduced price lunches were included in this analysis.

### Repeat Students

In 2014-15, 7% of students had previously participated in the OSO program. The percentage of students repeating the program has stayed relatively stable this year from the previous year.

**Figure 9: Percentage of Students Repeating the Program**

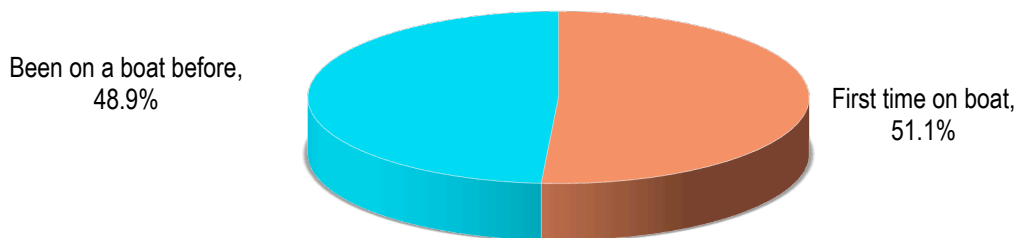


Source: O'Neill Sea Odyssey (2014-15 N=5,039; 2013-14 N=4,849 students 2012-13 N=5,442 students; 2011-12 N=2,533 students; 2010-11 N= 4,852 students).

### Past Experience on a Boat

For the first time, OSO asked students if their current experience was the first time they had been on a boat in the ocean. During 2014-15, 51% of students indicated it was their first time on a boat in the ocean.

**Figure 10: Students Reporting Experience on a Boat in the Ocean**



Source: O'Neill Sea Odyssey (2014-15 N=5,481).

### Website and Teaching Materials

In 2002, OSO launched an extensive website to inform potential visitors about the program, cultivate volunteers, and encourage sponsorships. Once a trip is planned, teachers can log-in to the website to get pre-trip information and documents such as a program overview, discussion of learning goals, and a teacher packet. The 52-page teacher packet includes information and activities to help prepare students for the trip, including topics on marine biology, ecology, and navigation. The “View Data from Past Trips” function on the website allows teachers and students to see and learn what other classes have done for their community service project.

In their program material, OSO states that:

“...students who have been given an overview of their subjects before participating in the program benefit from a more in-depth educational experience.”

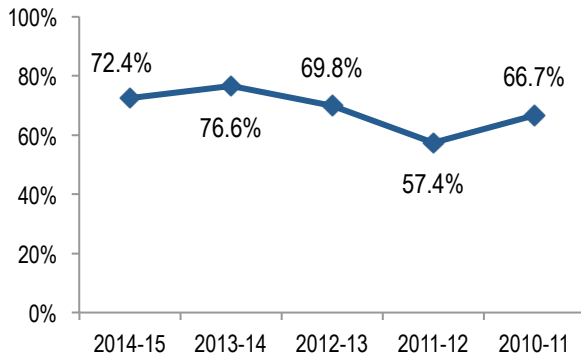
OSO, therefore, encourages teachers and group leaders to use the materials provided through the website with their students before participating in the program.

Teachers/group leaders were asked additional questions about the teaching materials available on the website.

- In 2014-15, 72% of all teachers/group leaders reported that they had used the online teaching materials provided on the website before their trip, an increase from the previous year.
- The online resources used most often by teachers were the pre-tip educational materials such as teacher packets (90%), safety and important information (78%), and parent and teacher FAQ (66%).
- A majority (95%) reported that they intended to use the online teaching materials in the classroom after the trip. This result has stayed relatively stable over the past five years.

**Figure 11: Use of Website Teaching Materials**

**Did you use the teaching materials provided on the website before the trip? (Teachers/Group Leaders Who Answered “Yes ”)**

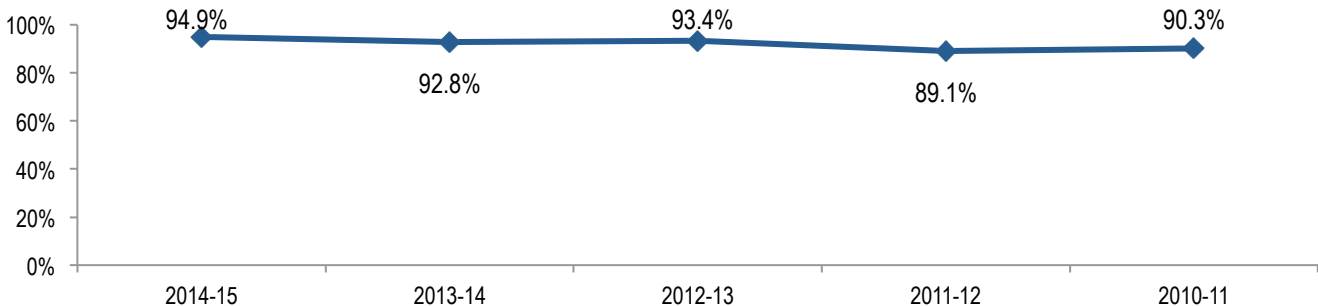


Source: Teacher/Group Leader Surveys (2014-15 N= 181; 2013-14 N=167; 2012-13 N=189; 2011-12 N=176; 2010-11 N= 159)

If teaching materials on the website were used...		
	Online resources used before the trip	Most helpful in classroom
Pre-trip educational materials (teacher packet)	89.8%	83.6%
Expand your knowledge online learning center	34.7%	27.3%
OSO curriculum booklet - English	51.7%	46.4%
OSO curriculum booklet - Spanish	10.2%	8.2%
Community service project help	32.2%	16.4%
Parent and teacher FAQ	66.1%	51.8%
Safety and important information	78.0%	60.9%

Source: Teacher/Group Leader Surveys (2014-15 N=110,118)  
 Note: Teachers/group leaders were asked to select the top materials that were most helpful in the classroom.

**Do you intend to use the Online Learning Center or Teacher Packet Materials in the classroom after the trip? (Teachers/Group Leaders Who Answered “Yes ”)**



Source: Teacher/Group Leader Surveys (2014-15 N=176; 2013-14 N=167; 2012-13 N=167; 2011-12 N=174; 2010-11 N= 145; 2009-10 N=162; 2008-09 N=157).

## Program Ratings

Teachers/group leaders were asked to give their feedback on the quality and effectiveness of several topics that were covered in the program. Teachers/group leaders were asked, “thinking about the children in the group and what was presented to them today, how much do you think the children learned from the following?” Respondents could answer learned a lot, learned somewhat, or did not learn at all.

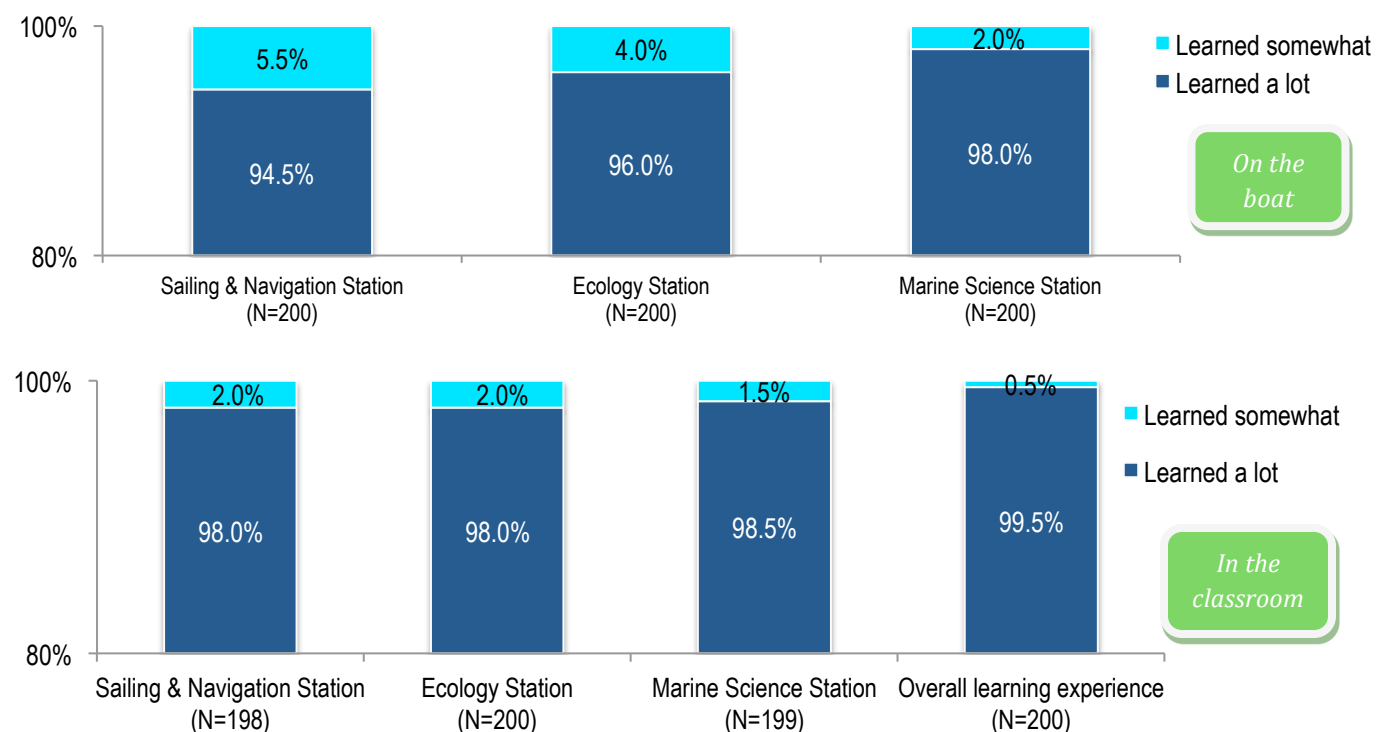
In every topic area, the vast majority of teachers/group leaders indicated that the students had “learned a lot.” The percentage of teachers/group leaders who responded this way ranged from 95% to 99% across all topics.

- Of the three topics learned on the boat, between 95% and 98% of teachers/group leaders thought students had “learned a lot” in the Marine Science station, the Sailing & Navigation station, and the Ecology station.
- Of the three topics learned in the classroom, most teachers/group leaders again said that students had “learned a lot” in the Marine Science station (99%), followed by the Ecology station (98%), and the Sailing and Navigation station (98%).

Virtually all of the teachers/group leaders (100%) reported that their students had “learned a lot” from the overall learning experience.

During the past five years (2010-11 to 2014-15), the percentage of teachers/group leaders who reported that the students had “learned a lot” has been consistently high. It is important to note that due to the already high ratings of these topic areas every year, it was extremely difficult to demonstrate any further improvement across years.

**Figure 12: How much do you think the children learned from the following [Topic Areas]? (Percentage of Teachers/Group Leaders Who Gave These Responses), 2013-14**



Source: Teacher/Group Leader Surveys, 2013-14.

**Figure 13: Comparison of Topic Areas (Teachers/Group Leaders Who Said the Children “Learned A Lot”)**

	2014-15	2013-14	2012-13	2011-12	2010-11
<b>On the boat</b>					
Sailing and Navigation station	94.5%	95.4%	93.9%	97.3%	96.9%
Ecology station	96.0%	98.3%	97.5%	97.3%	95.7%
Marine science station	98.0%	97.7%	96.0%	96.8%	97.5%
<b>In the classroom</b>					
Sailing and Navigation station	98.0%	94.8%	90.8%	94.1%	93.8%
Ecology station	98.0%	96.5%	94.4%	96.8%	96.9%
Marine science station	98.5%	96.0%	97.0%	97.3%	98.1%
<b>Overall</b>					
Overall learning experience	99.5%	99.4%	98.5%	100.0%	98.1%

Source: Teacher/Group Leader Surveys, 2008-15.

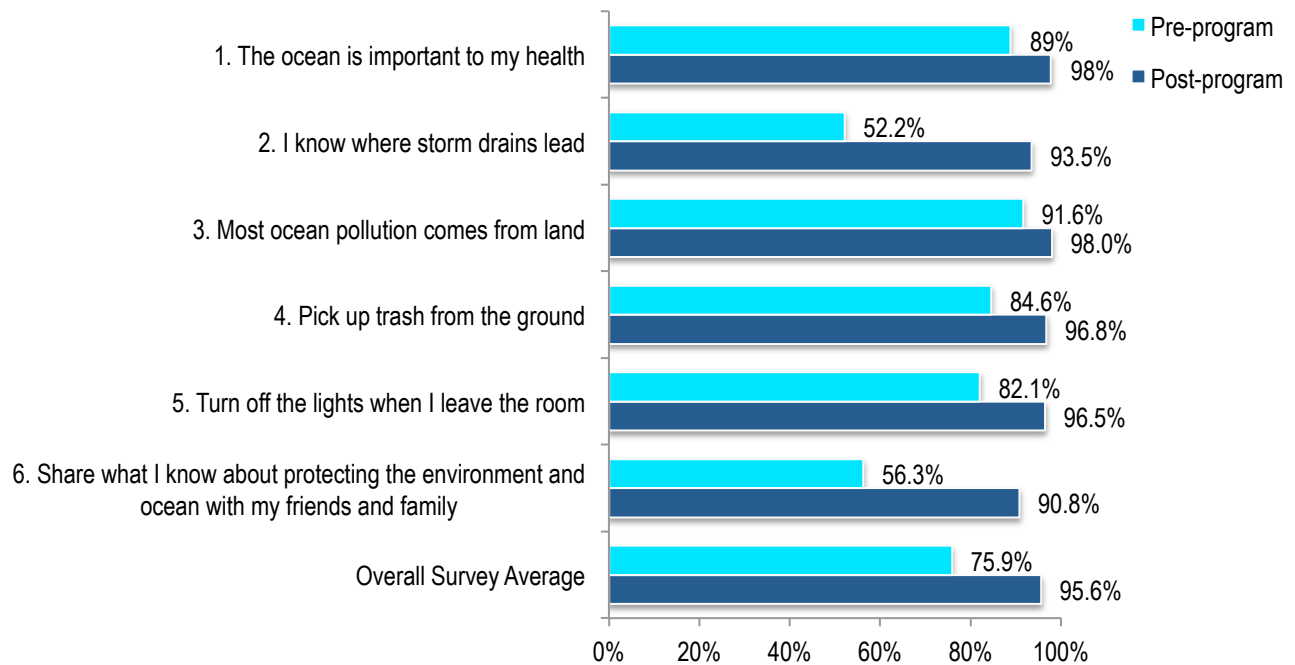
## *Student Environmental Awareness*

The Student Survey was read aloud to the students and was administered both before and after the program. The Student Survey included six questions regarding their general knowledge about the ocean and their future behavior regarding protection of the environment, energy conservation, and intention to share their knowledge about how to protect the environment with others. Students were asked to raise their hands if they agreed with the questions and the number of raised hands for each question was tallied.

The results showed that there were considerable changes in students' attitudes toward the environment after participating in the OSO program. Before participating in the OSO program, an average of 76% of students agreed with the survey questions overall. After attending the program, this percentage increased to 96%.

For each of the six individual survey questions, there were increases in the percentage of students who agreed with them after participating in the program. The largest increases occurred with Question 6, “I will share what I know about protecting the environment and ocean with my friends and family,” a net increase of 35% and Question 2, “I know where storm drains lead”, a net increase of 41%.

**Figure 14: Percentage of All Students Who Agreed with Survey Questions, Pre- and Post-Program, 2014-15**



Source: Student Surveys, 2014-15 (N= 5,461 students).

### *Effects of Economic Background*

The Student Survey results were also analyzed to determine whether the economic background of students had any effect on their environmental awareness, both before and after participating in the program.

The first step was to determine how to identify students' economic backgrounds. As only limited information was collected about the groups attending the program, it was decided to use the percentage of students receiving free or reduced price meals as an estimate of the group's economic level. This percentage was then used to divide the groups into three income categories. Groups with less than 1/3 of their students receiving free or reduced price meals were considered higher income groups and groups with more than 2/3 of their students receiving this benefit were considered lower income groups. Groups that fell between these extremes were considered middle income groups.

The following figures present the survey results for the students in lower, middle, and higher income groups. When these income categories were analyzed separately, all groups showed increases in the percentages of students who agreed with the survey questions after participating in the program. However, there were interesting differences between the groups.

The most interesting findings were the amount of change and effectiveness of the OSO program in teaching and encouraging environmentally-conscious behavior, relative to the groups' economic background. Before the program began, a smaller percentage of students from lower (76%) and middle income (75%) groups agreed with the survey questions overall, compared to students from higher income groups (80%). After participating in the program, the students from lower and middle income

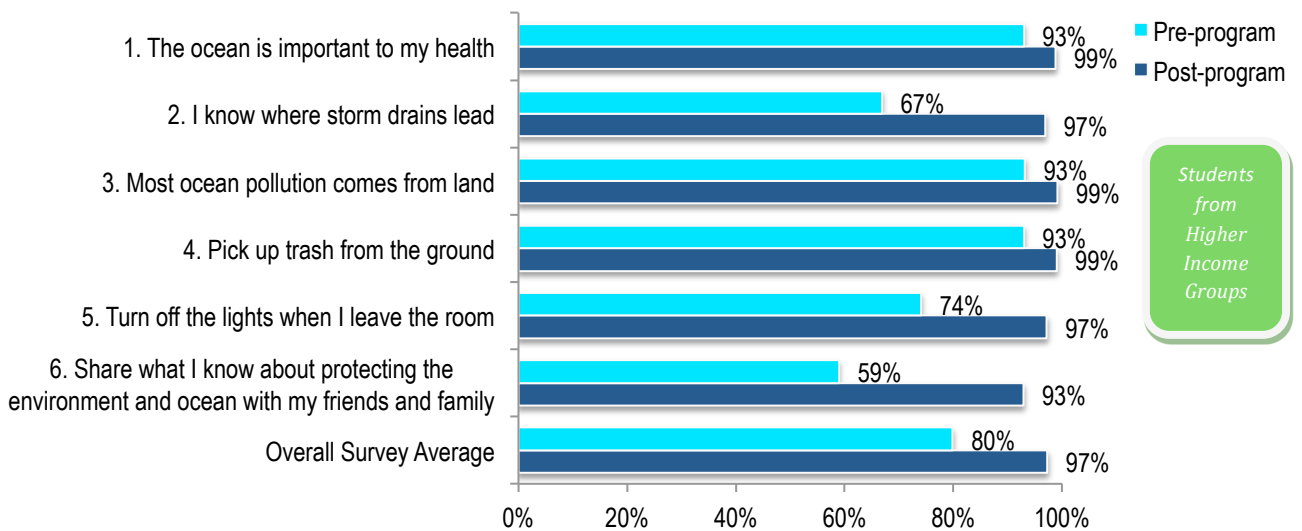
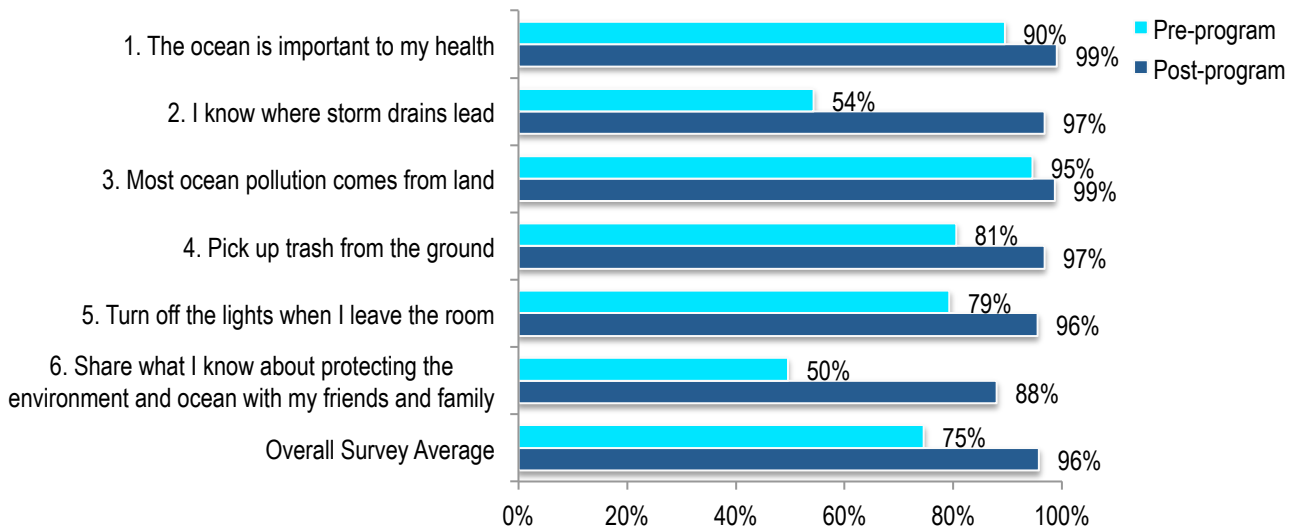
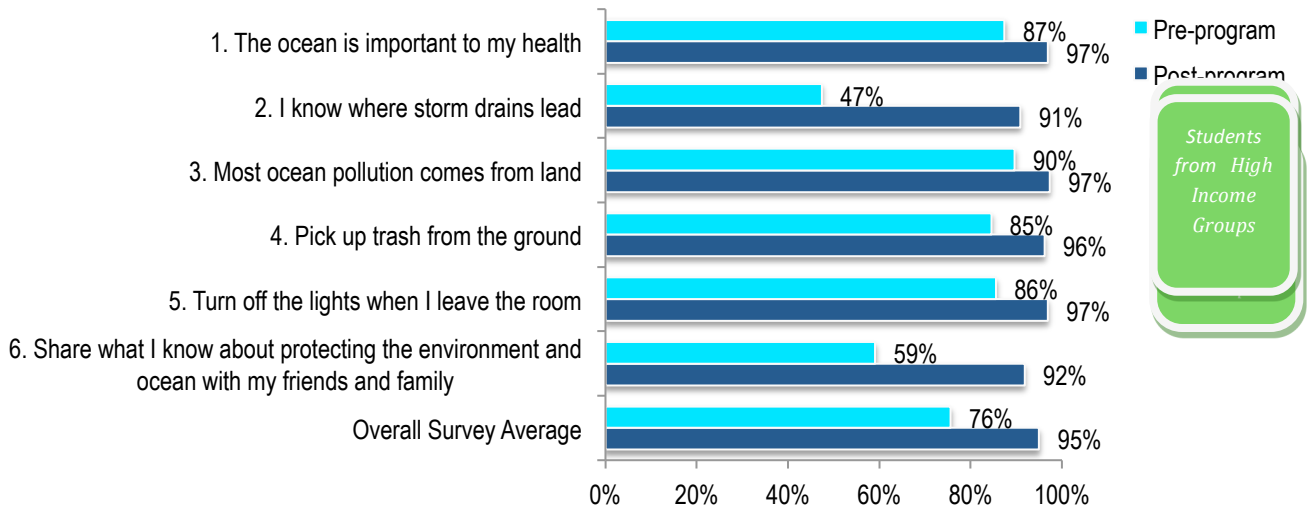


groups increased agreement to the same levels as their high income peers. After participating in the program, 95% of students from lower income groups agreed with the survey questions, while 96% of students from middle income groups and 97% of students from higher income groups agreed.

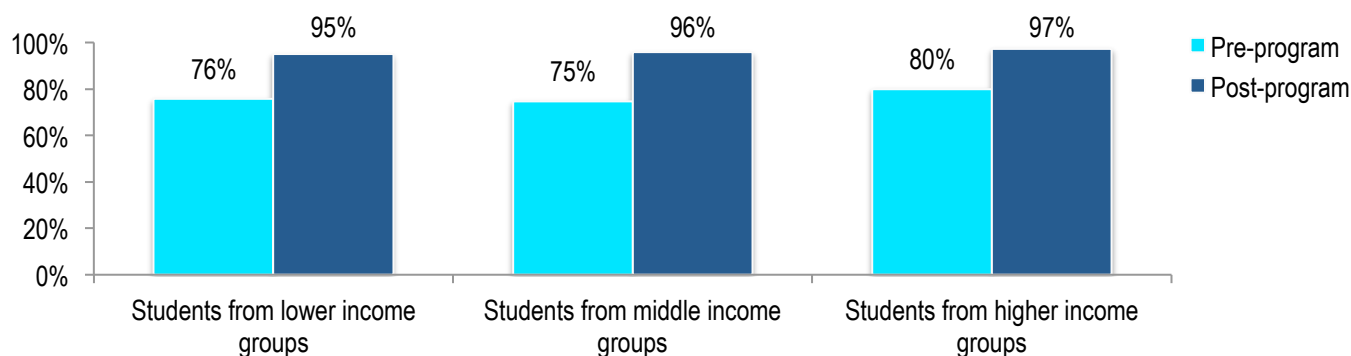
When specific survey questions were examined, the question that showed the largest difference related to economic background was Question 2, "I know where storm drains lead." For this question, students from lower and middle income groups demonstrated a greater amount of change between pre- and post-program surveys (net change of 43% and 43%, respectively) compared to students from higher income groups (net change of 30%). However, Question 2 had a low agreement rate prior to participating in the program regardless of students' economic background and therefore left a lot of territory to gain.

Overall, most students, regardless of economic status, were more confident in their knowledge of the where storm drains led, reported that they would behave in ways to protect the environment, and that they would share this knowledge with their friends and family members after participating in OSO.

**Figure 15: Percentage of Students Who Agreed with Survey Questions, Pre- and Post-Program, by Income Level, 2014-15**



Source: Student Surveys, 2014-15. Lower income students: N=3,117 students. Middle income students: N= 1,588, Higher income students: N=776 students. Note: Only groups that had data regarding the percentage of students receiving free or reduced price meals were included in this analysis.

**Figure 16: Students' Overall Survey Averages, Pre- and Post-Program, by Income Level**

Source: Student Surveys (2014-15: Lower income students: N=3,117. Middle income students: N= 1,588, Higher income students: N=776.)  
 Note: Only groups that had data regarding the percentage of students receiving free or reduced price meals were included in this analysis.

## Conclusions

### Student Participation and Demographics

During the 2014-2015 program cycle 207 groups participated in the O'Neill Sea Odyssey (OSO) program, representing 5,519 students. The average group size was 27.

The demographics of the groups and students who participated in the OSO program were similar to previous years. The majority of groups came from Santa Cruz, Santa Clara, and Monterey Counties (96%), and the majority of groups (89%) were comprised of students in the 4<sup>th</sup> through 6<sup>th</sup> grades. Some students were repeat visitors, with 7% of the students having been on the trip at least once before. About half (51%) of students indicated it was their first time on a boat in the ocean.

It was estimated that more than half (63%) of the students were Hispanic or Latino, 19% were White, and 18% were of other races/ethnicities. The percentage of English Learners (EL) was 44%, and 12% of students were Fluent-English-Proficient (FEP). When these two groups were combined, the results show that 56% of the participating students did not have English as their primary language.



More than half of the students (64%) were receiving free or reduced price meals. By using the percentage of students receiving free or reduced price meals in each group as an estimate of the group's economic level, it was determined that approximately 56% of participating groups came from lower income communities. Please refer to page 10 for more information.

### Website and Teaching Materials

Slightly less than three-quarters (72%) of teachers and group leaders indicated that they used the website materials with their students *before* participating in the program. The vast majority of teachers (95%) reported that they intended to use the online teaching materials in the classroom after the trip.

Open-ended response questions in the survey asked teachers/group leaders to suggest any topic areas that would be helpful to include in the Sea Odyssey experience and if they had any additional comments. The responses to these questions are available in Appendix I.

### *Program Ratings*

Based on the Teacher/Group Leader Survey results, the OSO program was evaluated extremely positively. In every topic area, the majority of teachers/group leaders (95% to 98%) indicated that the students had “learned a lot.” Almost all of the teachers/group leaders (100%) reported that their students had “learned a lot” from the overall learning experience.

### *Student Environmental Awareness*

The Student Survey showed that there were substantial changes in students’ environmental knowledge and behavior after participating in the program. Before participating in the OSO program, an average of 76% of students agreed with the survey questions (indicating that they knew a lot about the ocean and storm drains and behaved in environmentally responsible ways), which increased to 96% after attending the program.



The Student Survey results were also analyzed to see whether economic background had any effect on students’ survey responses. Student groups were divided into three income levels (lower, middle, and higher) and all three income groups’ survey responses were analyzed.

There was a difference between the low/middle income groups and higher income groups in the amount of change that occurred between pre- and post-program surveys. Before the program began, a smaller percentage of students from lower and middle income groups agreed with the survey questions overall (76% and 75%, respectively), compared to students from higher income groups (80%). However, after participating in the program, students from low and middle income groups demonstrated a slightly greater amount of change between pre- and post-program surveys (net change of roughly 20%) than students from higher income groups (net change of 18%).

### *Summary*

Overall, the program was very well attended by the target population of students; the program materials were frequently used; and the program was very highly regarded by teachers/group leaders. In addition, Student Survey results suggest that the OSO program succeeded in bringing all students to a higher level of environmentally-conscious behavior and knowledge despite some factors (such as economic background) that may have limited how much environmental awareness a student had before attending the program.

# Appendix I: Open-Ended Survey Responses

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## 12. What additional topic areas do you think would be helpful to include in the Sea Odyssey experience?

- I can't think of any. Program is already comprehensive. (21 responses)
- All great/wonderful! You do a great job. (14 responses)
- Anything related to the next gen science standards.
- Bioconcentration of pollutants
- California history (4th grade standards) ties in well to topics (navigation, otter hunting, etc.)
- Check 5th grade common core standards that connect to OSO curriculum, including some math (decimal numbers, parallel lines)
- Compass use guidance
- Conservation clean-up idea for kids
- Different boat types and their uses.
- Effect of weather on biodiversity, a little more info on what organisms exist at what depths
- Food chains/webs, weather, tides/currents
- How to reduce plastic use
- How to use the sails- how the energy is captured and transferred to propel the boat forward.
- I appreciated the combination of familiar plankton types/food chains with the plankton.
- I like the emphasis on ecology. Students need to understand how small gestures can become a big impact.
- I suppose tsunami info and its effects on the local areas wouldn't be appropriate but I would have liked to have learned if it had any ecological effects.
- I think an action (picking up trash) on the beach would teach the students we can start now.
- Impact of globalization/global warming on the ocean.
- In the plankton section, please add the effects of pollution.
- Info about waves (how they work/form) since students had some questions.
- It would be nice to talk about the Monterey Bay canyon since its such a mysterious place and so close.
- Keeping rivers (all water) ponds- clean
- Kelp forest videos, more plankton photos/videos :)
- Knowledge of sustainable fishing
- Local environmental clubs?
- Love the topic of climate change
- Maybe acidification and warming and broader effects.
- Maybe give examples of positive steps mankind is taking to protect oceans (personal behavior

was covered well)

- Maybe have students build ocean ecosystem food chains/food webs
- Maybe refer to the water cycle?
- More about sailing- tacking, jibing, etc.
- More detailed sea life? What can kids do to help and protect suggestions for them.
- More information of weather patterns and effects on the ocean.
- More marine science
- More on weather
- Navigation and more analyzing the samples
- Opportunities students might have to experience other ocean/MB recreation and education.
- Perhaps another book about the sea life in the sanctuary. Do you need a class to write it?
- Personal habits connected to pollution.
- Possibly more clarification around the impact of conventional farming on the ocean.
- Purpose of dredging the harbor channel (quick mention)
- Seeing the whale and baby was awesome
- Some additional information concerning encouraged and discouraged fish consumption, including shellfish, would be helpful.
- Some kind of worksheets
- Technologies being developed to help our oceans/environment. Kids are sometimes overwhelmed by all the problems without anything to make them feel hopeful.
- The topics covered in the program are perfect; if I had to choose additional topics... nautical (ship mechanisms)
- Their map skills are limited so navigation was the most difficult for them.
- There was a variety of information significant to marine biology.
- Types of marine life that exists locally. More info on pollution how/where trash and recyclable things go.
- You are such a well-oiled "machine", it is difficult to add to it with time frame. Maybe an art project as one of the hands on opportunity stations.

**17. Do you have any additional comments? (All responses included as they were worded)**

- Absolutely amazing. Loved the program! Thank you so much for the fabulous learning experience for my students! AWESOME PROGRAM!
- Awesome! Strong message for conservation! Fabulous! Thank you!
- After the three presenters are done, have a quiet time-10 minutes- Give students paper and a pen ask them to THINK and to make a commitment and to care for the ocean and marine life based on the new knowledge. Thank you and once again Laura-- thank you for your patience! ... and it was fun!
- Always a great experience for my underserved students :)
- Always fabulous! Thank you!
- AMAZING staff!! Wow!! :) This was the MOST memorable and educational trip we have ever taken. We are thankful for this valuable experience and know our students will cherish this memory... and will be empowered to become stewards of our environment in the Monterey County. A million thanks!
- Amazing trip! Thank you!!!
- Amazing!
- Amazing! So rewarding-best field trip ever!
- Amazing, the best. So much learning happening. Real world experiences... Amazing trip, love it, and I highly recommend it! :)
- An incredibly valuable and effective field trip for EVERYONE.
- Appreciate the consistent amazing enthusiasm of the teaching team- every year.
- As always this was a wonderful learning experience for the students.
- As always, what a wonderful experience for my students. Thanks for accommodating us in the rain!! It was still a rich experience for us all, even 1/2 my class that came with me last year as 4th graders! So cool to see all the plankton in the drop of water! I've been thinking lately that kids aren't learning map skills anymore, so this was great!
- Awesome day! Only 3 students have previously been on a boat before. Thank you for creating a rich adventure!
- Awesome experience! All students were excited!
- Awesome field trip- highly recommend it to others and hope to return in the future.
- Awesome!
- Awesome!
- Best field trip ever!
- Buckets and gloves to do a beach clean up for 1/2 the day with the beach group.
- Depth of knowledge was terrific! Again, familiar taken to new level!
- Everything was fantastic, thank you!
- Excellent experience and presentations:) Excellent fun field trip. Thank you! :)
- Excellent experience today! Thank you.
- Excellent program- Easily the best field trip I have seen. Thanks!
- Fabulous experience! Dolphin pods were a once in a lifetime experience, the kids loved it!
- Fantastic experience! I think they loved all the hands on activities.

- Fantastic experience! Wonderful and patient staff :)
- Fantastic program! Thanks!
- Fantastic trip! Many students experienced a boat and ocean for the first time.
- Fantastic trip-as always!
- For students, vocabulary is challenging (90% English learners) many are quiet and don't let you know when they don't understand (I think it happened with kelp). Incredible experience for the students.
- Given the circumstances (our bus being late and the wet weather), the energy of our instructors was great! Great job! Thanks for having us.
- Great crew! I'm always impressed at how knowledgeable the leaders are and how well they interact with the students.
- Great environmental message. All teachers were very enthusiastic
- Great experience for the students!
- Great experience- our instructors were fantastic. The weather even held out.
- Great experience- Thank you so much.
- Great experience! Thank you!
- GREAT field trip!
- Great field trip! Thank you!
- Great job! Love it!
- Great job. Thanks for having us!
- Great positive and patient staff., really adjusted to the changing learning environment.
- Great program! Great crew!
- Great staff great attitude
- Great staff great attitude
- Great time. It rained lightly but you had ponchos- thanks!
- Great trip, as always!
- Great, thank you!
- I am so happy you provided rich learning outside our classroom and support us with the grant.
- I don't think I received any classroom materials to share with my students. Excellent and memorable program. Please keep it going.
- I love everything you do. Showing the collected data is SO cool!
- I think that the students are given a great deal of relevant information on this trip.
- I think the connection between habitats and ecology is very valuable to students curriculum.
- I would like to let you know that the students are saying this is the best field trip ever. Thank you for providing such valuable wealth of knowledge for the students and parents!
- I'm fascinated by your program and the educational experience it provides to all students.
- Incredible experience for the children that should be a lifelong memory for most of them.
- Instructors are phenomenal! Patient and very knowledgeable. Great control of kids :) Thank you
- Instructors did a nice job maintaining attention and interest of group



- It was a great experience full of learning.
- It was a great trip! Thank you so much my students had a wonderful time!
- It was an extraordinary experience. The students were interested in the lessons.
- It was another great experience, even if we didn't get to experience the bay on the boat. Thanks!
- It was great and fun learning experience-as always.
- It was wonderful!
- Language issue makes it difficult for some of them.
- Love! Love! Love!
- Loved history of otters- we're reading Island of the Blue Dolphins so they made connections w/ the Aleuts who came hunting the otters and what happened to the otters around the island. Thank you!
- No
- Once again, another great trip! Thank you very much!
- Only my sincere gratitude. Thank you for this essential and incredible experience you provide for students.
- Photos and vocab cards would be great. It would be helpful to have more language defined or given synonyms for our high percentage of language learners. Thank you for being flexible with the timing! :)
- Really appreciate all your hard work to keep this program going!
- Sea Odyssey rocks!
- Since our students rotate in classes, the structure of the program complimented what students were used to. Pacing/information covered were very appropriate!
- So glad you had an opening you called to see if we would like to bring our classes. I know our fifth graders always hope we get a spot. Fabulous trip, wonderful opportunity for our children (and any other group) to learn about the ocean. High interest. Everyone was excellent in presentations and class group control. Y'all rock! I was extremely impressed.
- Staff was energetic and awesome. Thank you.
- Such a special experience for our kids, many of whom do not have the opportunity to experience the ocean.
- Suggestions: 1) Teach quiet cues and use them for attention 2) A sound system for your teachers 3) For English learners: more visuals and give students a chance to share with each other before sharing out as a whole group. Without this, there were only a few frequent responders.
- Thank you again. Excellent field trip. Again, the emphasis on conservation is critical for this generation.
- Thank you for a fabulous day; the kids LOVED it!
- Thank you for a wonderful and educational experience!
- Thank you for an amazing learning experience!
- Thank you for everything!
- Thank you for everything!
- Thank you for the videos for Anthony. (Also, thanks to the captain for his offer to take out Anthony and his family. That is so awesome!)
- Thank you for the wonderful experience.
- Thank you for the wonderful experience. What a great opportunity!
- Thank you for your patience with the students.

- Thank you is an understatement.
- Thank you once again for the opportunity to introduce students to an experience they wouldn't otherwise have had without OSO! Well organized and kid friendly presentations.
- Thank you so much again for this incredible experience.
- Thank you so much for a great program!
- Thank you SO much for allowing us to go out today! My class was so excited to get out on the boat/water! :)
- Thank you so much for inspiring so many CA children who will go home and expand knowledge about sharing our planet.
- Thank you so much for making this such a special experience for ALL my students.
- Thank you so much for the bus scholarship. We couldn't have come without it!
- Thank you so much for this opportunity. The students learned so much and truly enjoyed themselves.
- Thank you so much!
- Thank you so much!
- Thank you so much! Once again, we had a blast and learned a lot!
- Thank you so much!!!
- Thank you so much.
- Thank you so much. Very easy to work with and kids loved it.
- Thank you!
- Thank you!
- Thank you!
- Thank you!
- Thank you! It was wonderful!
- Thank you! Marina, Joey, and Adam were mindful thorough in their teaching points. We saw gray whales, sea otters, sea lions, and harbor seals.
- Thank you! The kids will never forget it. Hopefully they'll be inspired to protect and learn more about the MB sanctuary.
- Thank you! We had a great time!
- Thank you, this trip is launching a huge project on explorers and boats! We will incorporate recycling and "green" habits to support what we've learned here.
- Thank you, this was a great experience for my students parents.
- Thanks again for a wonderful experience
- Thanks again for another great field trip
- Thanks again!
- Thanks for a great learning experience- the class and I really enjoyed all your work and extra efforts.
- Thanks for the trip!
- Thanks!
- Thanks! Always great!

- Thanks! Kids had a great time! We appreciate your staff's enthusiasm and patience. (Marine bio): the weather made it hard to focus.
- Thanks!!!
- The field trip was absolutely wonderful. My students come from 100% low income families, so this is an experience of a lifetime for the kids. Thank you for allowing us to come today to learn all this fascinating and important information in marine biology, navigational science, and ecology.
- The kids loved it! Everyone did an EXCELLENT job. Thanks.
- The program was awesome! Thank you so much- and special thanks to the captain for getting us in the middle of whales!!
- The staff's DEDICATION to this CRUCIAL INFORMATION and its presentation is OBVIOUS!
- The students are so engaged. Thank you so much for a wonderful program. This was my first time and I hope to come back again soon.
- The students had the time of their lives!
- The watershed activity was great. We are next to Elkhorn Slough. Thank you! Always awesome!
- This is a fantastic experience. The instructors are knowledgeable, engaging, and patient. What a great way to learn about our environment.
- This is a great educational resource. Thank you.
- This is an amazing opportunity that these students wouldn't have otherwise. I am so grateful to share this amazing learning with them. Thanks so much!
- This is an amazing program. Please keep up the wonderful work.
- This is quality learning experience! I LOVE this trip and the gift you provide our community. Thank you so much!

# Appendix II: Survey Instruments

## Teacher/Group Leader Survey

Teachers and group leaders were asked to fill out a short survey after attending the Sea Odyssey program. Earlier versions of the Teacher/Group Leader Survey were administered in previous years and were refined to reflect the significant topics of interest. The current version was introduced this school year.



School name: \_\_\_\_\_  
Date: \_\_\_\_\_

### TEACHER/GROUP LEADER SURVEY

We would appreciate your comments on your Sea Odyssey experience. Please take a few minutes to complete this very important survey.

Thinking about the children in the group, and what was presented to them today, how much do you think <u>the children learned</u> from the following?	Learned a lot	Learned a little	Did not learn at all
<b>On the boat:</b>			
1. <b>Sailing &amp; Navigation station:</b> electronic technology and other tools for navigation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. <b>Ecology station:</b> Sanctuary characteristics, marine life and habitats.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. <b>Marine science station:</b> life cycles, food station, balance that helps maintain life in the sea.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>In the classroom:</b>			
4. <b>Sailing &amp; Navigation station:</b> Latitude, longitude, and basic geometry as it relates to navigation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. <b>Ecology station:</b> water cycle and watershed, ocean pollutants, solutions to pollution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. <b>Marine science station:</b> plankton identification food web information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Overall learning experience	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please turn page over to complete the survey questions.



8. Did you use the teaching materials provided on the website before the trip?

- (1) Yes                       (2) No (Skip to Question 11)

9. If yes, please check the box to indicate which online resources you used before the trip.

- a. Pre-trip educational materials (teacher packet)
- b. Expand your knowledge online learning center
- c. OSO curriculum booklet- English
- d. OSO curriculum booklet - Spanish
- e. Community service project help
- f. Parent and teacher FAQ
- g. Safety and important information

10. If you used the online resources, which materials were the most helpful in the classroom?

(Please select your top 3).

- a. Pre-trip educational materials (teacher packet)
- b. Expand your knowledge online learning center
- c. OSO curriculum booklet- English
- d. OSO curriculum booklet - Spanish
- e. Community service project help
- f. Parent and teacher FAQ
- g. Safety and important information

11. Do you intend to use the online Learning Center or Teacher Packet materials in the classroom after the trip?

- (1) Yes                       (2) No

12. What additional topic areas do you think would be helpful to include in the Sea Odyssey experience?

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13. Do you have any additional comments?

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**Thank you for taking the time to complete this important survey.**

## Student Survey

The Student Survey used in the 2013-14 program cycle, and was modified from previous versions and refined to reflect topics of interest. This survey was designed to be read aloud to the students, and was administered to them before *and* after attending the program. Students were asked to raise their hands if they agreed with the questions (indicating a “yes” response), and the number of raised hands for each question were tallied.



School name: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Number of Students: \_\_\_\_\_

### STUDENT SURVEY

Please conduct the survey verbally and count a show of hands for positive responses.

1) Raise your hand if you agree with the following:

	Pre Trip	Post Trip
The ocean is important to my health		
I know where storm drains lead		
Most ocean pollution comes from land		

2) Raise your hand if: (Pre measures current behavior and Post measures planned future behavior)

	"I ..." Pre Trip	"I plan to..." Post Trip
Pick up trash from the ground		
Turn off the lights when I leave the room		
Share what I know about the protecting the environment and ocean with my friends and family		

3) POST ONLY – Raise your hand if you agree with the following:

	Post Trip
This was my first time on a boat on the ocean	

## About the Researcher

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Applied Survey Research is a nonprofit social research firm dedicated to conducting and using community-based research to help people build better communities. Since 1980, ASR has employed best practices for survey research, assessment, and evaluation in order to better serve public and private agencies, health and human service organizations, cities and county offices, school districts, institutions of higher learning, and charitable foundations.

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