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2016-2017 survey results
fall 2017



Central Coast Office:
P.O. Box 1927 | Watsonville, CA 95077
(831) 728-1356

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About O'Neill Sea Odyssey

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 2016 - June 2017 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 2016-17 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.

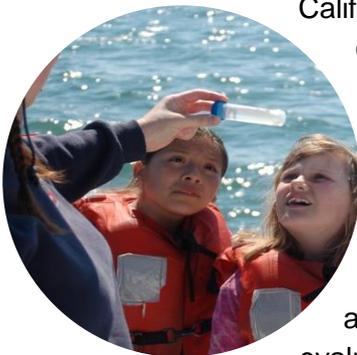
Demographic Data Collection

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

Demographics

- Between July 2016 and June 2017, 201 groups participated in the O'Neill Sea Odyssey (OSO) program, representing 5,276 students. Group sizes ranged from 6 to 36 students, with an average group size of 26.
- The majority of groups came from Santa Cruz County (46%) and Monterey County (26%).
- Approximately 98% of groups were of students between 4th and 6th grade, the program's target population.
- Nearly half (48%) of students indicated it was their first time on a boat in the ocean.
- Based on population estimates, 66% of the students were Hispanic or Latino, 18% were White, 9% were Asian, Filipino, or Pacific Islander, 1% were African American, less than 1% were American Indian or Alaska Native, and 6% were of another race/ethnicity.
- It was estimated that 45% of the students attending the OSO program did not have English as their primary language, a slight increase since 2010-11.
- More than half (66%) of students were receiving free or reduced price meals.
- Approximately 59% of participating groups were lower income groups, 24% were middle income groups, and 16% were higher income groups.

Website Use

- Fifty-seven percent of all teachers/group leaders reported that they had used the online teaching materials provided on the website before their trip, and the vast majority of the teachers (91%) intended to use the online teaching materials in the classroom after the trip.
- When asked which online resource the teachers/group leaders used, 88% 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 (88%)

Program Ratings

- In every topic area, the vast majority of teachers/group leaders (between 94% and 100%) indicated that their students had "learned a lot."
- Of the three topics learned on the boat, 97% of teachers/group leaders thought students had "learned a lot" in the Marine Science station and in the Sailing & Navigation station, while 96% of teachers/group leaders thought students had "learned a lot" in the Ecology 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 (98%), followed by the Ecology station (95%), and the Sailing and Navigation station (94%).
- One-hundred percent of the teachers/group leaders 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 70% of students agreed with the survey questions overall. After attending the program, this percentage increased to 94%.
- 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 (69%) and middle (69%) income groups generally had very slightly lower overall levels of agreement before the program started than the higher (80%) income groups but all income groups agreed at 94% or 95% by the end of the program.

Results

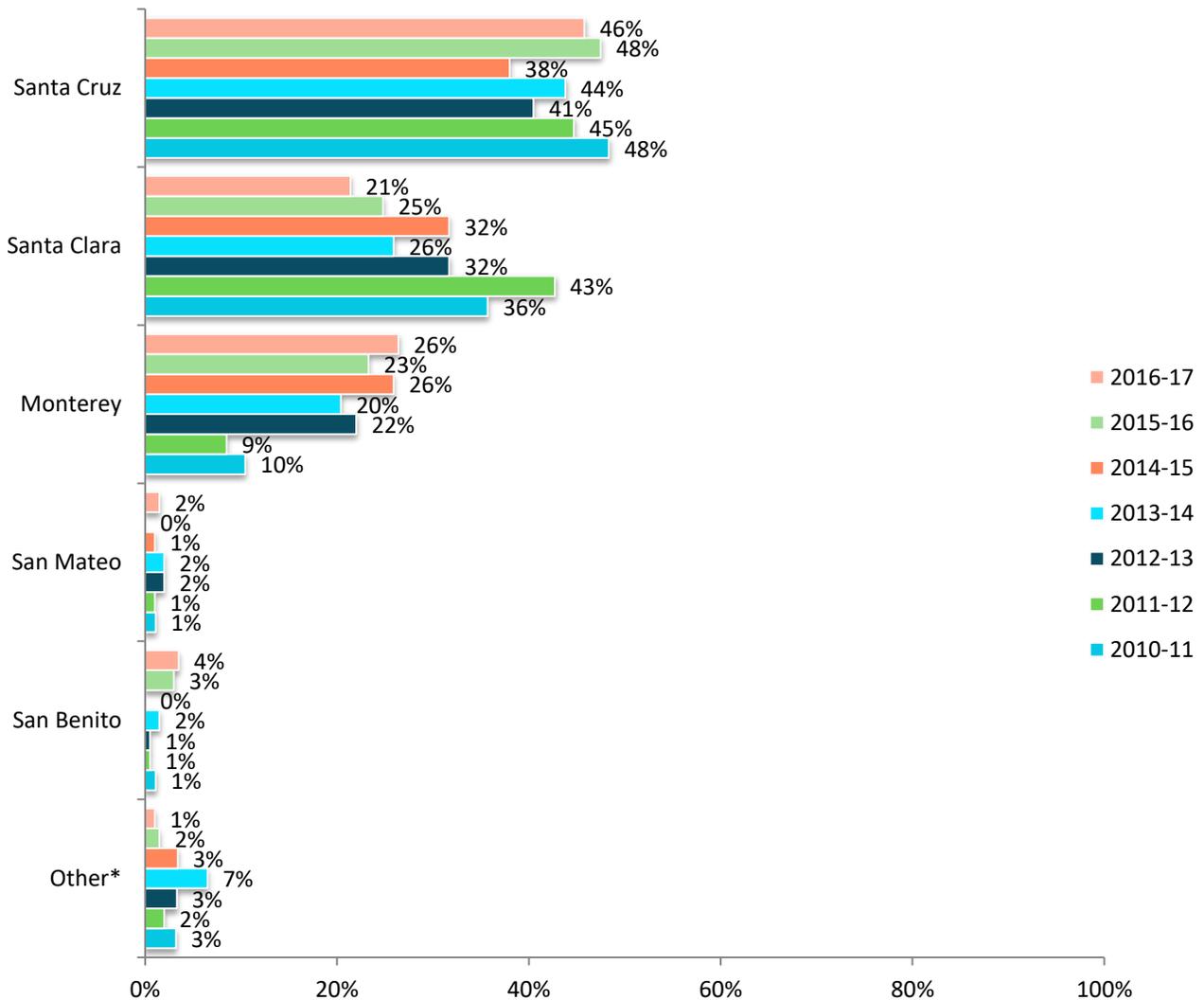
Student Participation and Demographics

Between July 2016 and June 2017, 201 groups participated in the O'Neill Sea Odyssey (OSO) program, representing 5,276 students. Group sizes ranged from 4 to 35 students, with an average group size of 26.

Counties of Origin

Most groups came from Santa Cruz County (46%), Monterey County (26%), and Santa Clara County (21%). Between 2010-11 and 2016-17, 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 (2016-2017 N=201 groups; 2015-16 N=202 groups; 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).

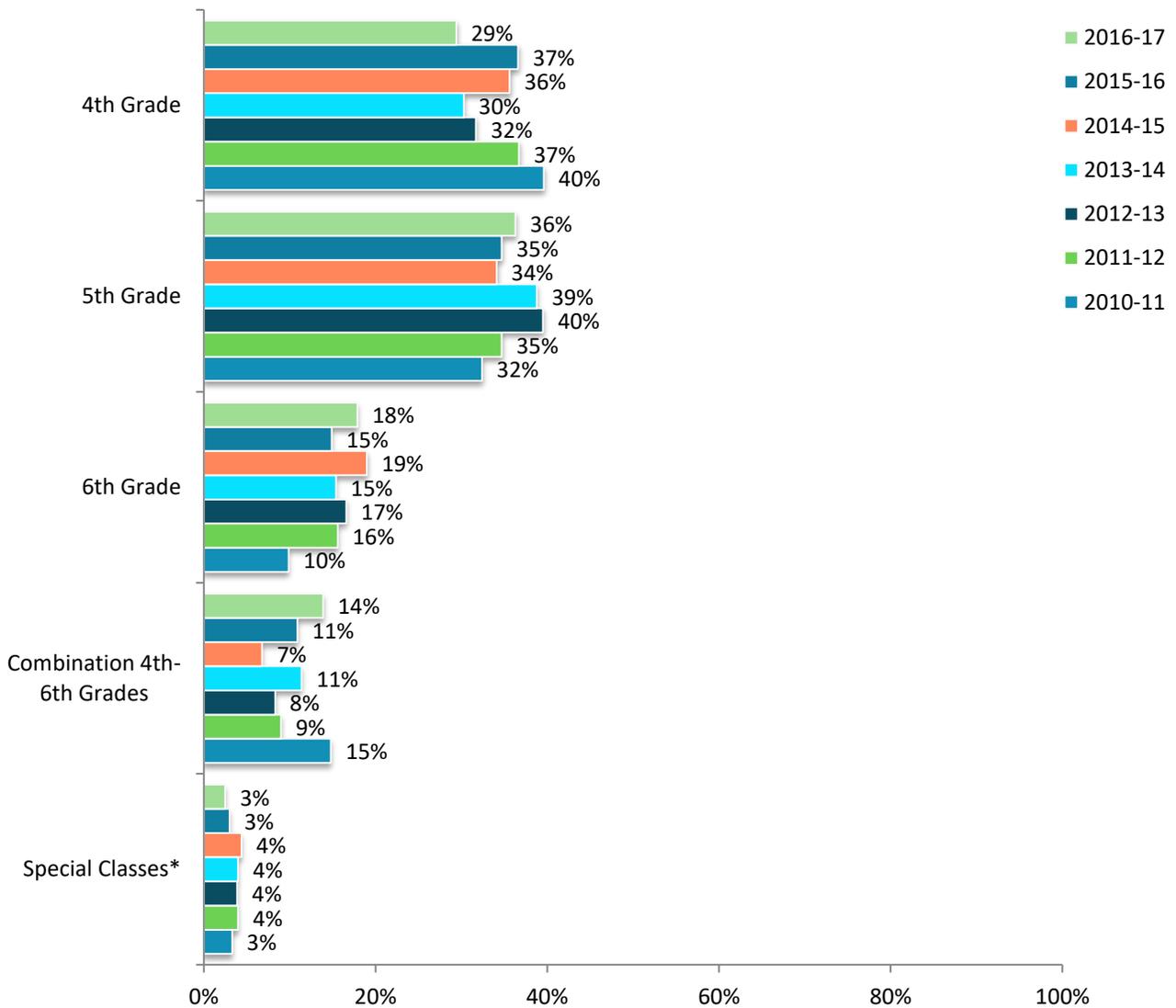
* "Other" counties differ by year but includes the counties of Alameda, Contra Costa, Nevada, Sacramento, San Francisco, San Joaquin, Sonoma, Stanislaus, Yolo and those where no information was available.

Grade Levels

OSO's target population is students in the 4th through 6th grades and, in 2016-17, the majority of groups were in this grade range (84%). In 2016-17, the highest percentage of groups were from the 5th grade groups (36%), followed by 4th grade (29%), 6th grade (18%), and combined 4-6th grade groups (14%).

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

Figure 2: Grade Levels of Groups



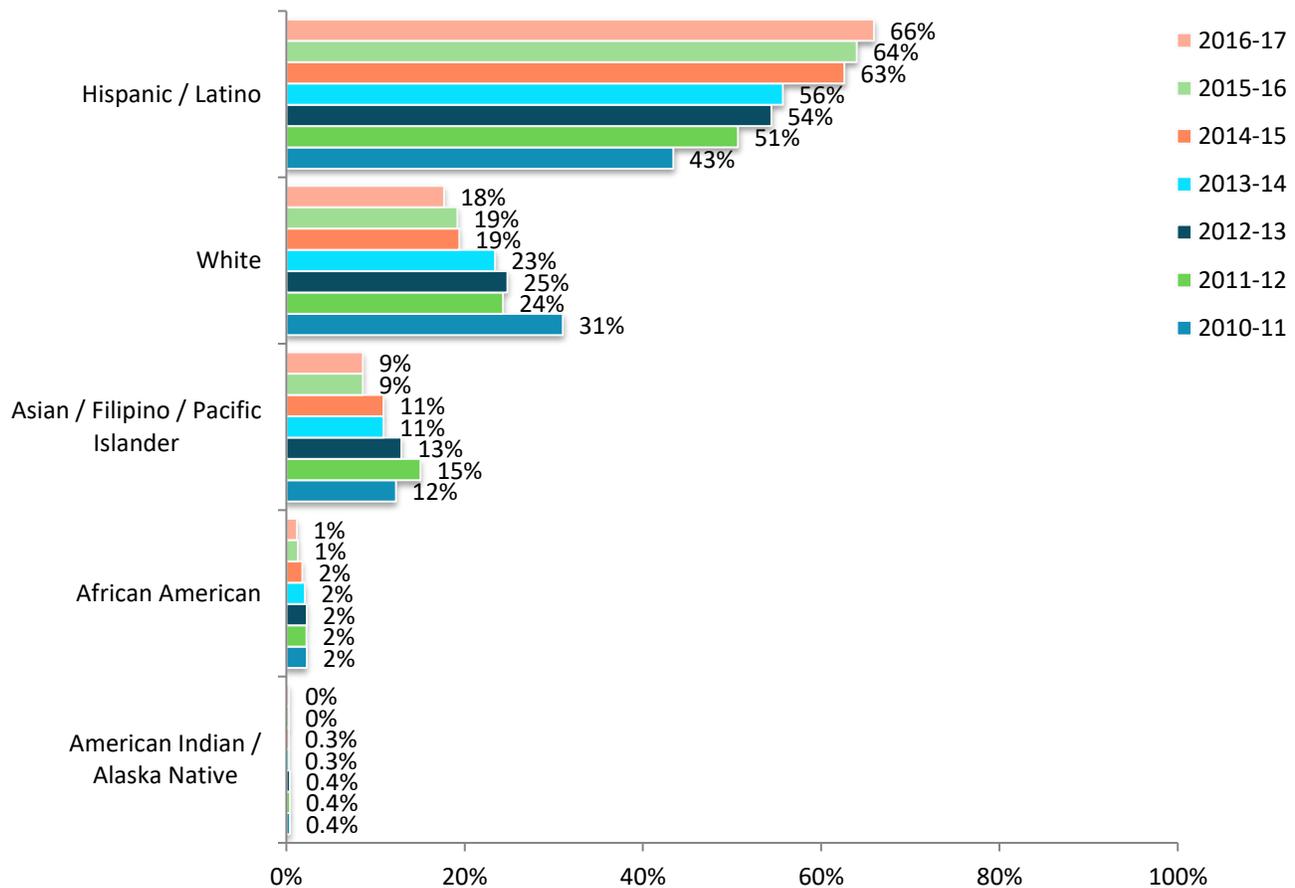
Source: O'Neill Sea Odyssey (2016-17: 201; 2015-2016 N=202; 2014-2015 N=205; 2013-14 N=201 groups; 2012-13 N=205 groups; 2011-12 N=197 groups; 2010-11 N=182 groups).

* "Special Classes" refers to groups comprised of students in grades other than 4th through 6th.

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 2016-17, it was estimated that 66% of the students were Hispanic or Latino, 18% were White, 9% were Asian, Filipino, or Pacific Islander, 1% were African American, less than 1% were American Indian or Alaska Native, and 6% were of another race/ethnicity. The percentage of Hispanic/Latino students has increased every year from 2010-11, rising from 43% to 66% in 2016-17.

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 (2016-17 N=5,276; 2015/16 N=5,281; 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.

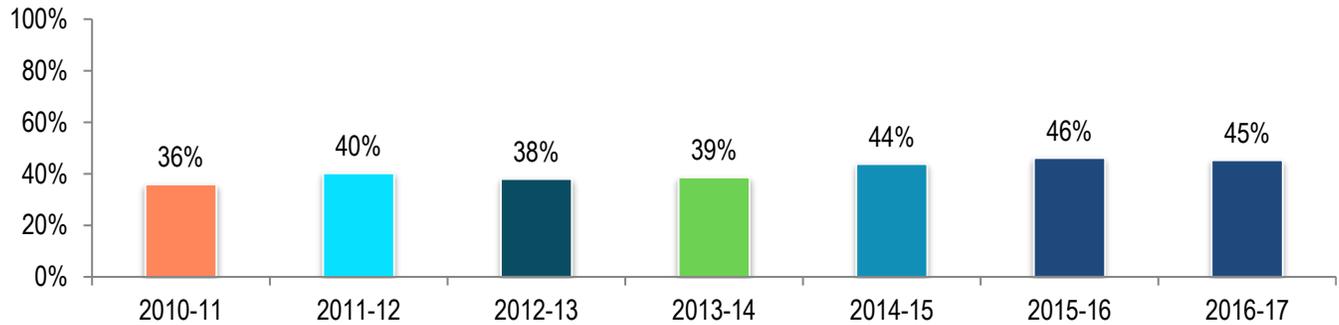
English as a Second Language

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 2016-17, it was estimated that 45% of students attending the OSO program were English Learners (EL), and 13% of student participants were Fluent-English-Proficient (FEP). Since 2010-11, the percentage of EL students has increased from 36% to 45%, though that increase seems to have stabilized in recent years. The percentage of FEP students has remained relatively stable, hovering just over 10%. When the two groups were combined (EL + FEP), the result showed that in 2016-17, 58% of the students attending the OSO program did not speak English as their primary language, an increase from 46% since 2010-11.

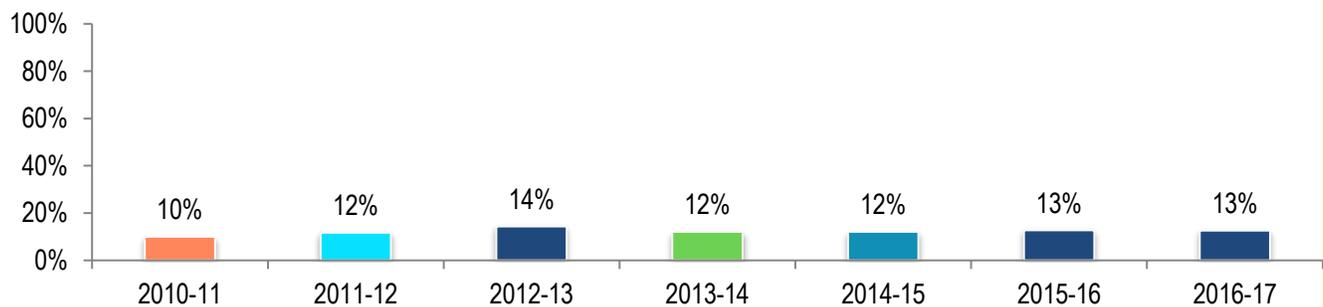
Figure 4: Percentage of English Learner (EL)¹ Students



Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2016-17 N=5,276; 2015-16 N=5,155; 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).

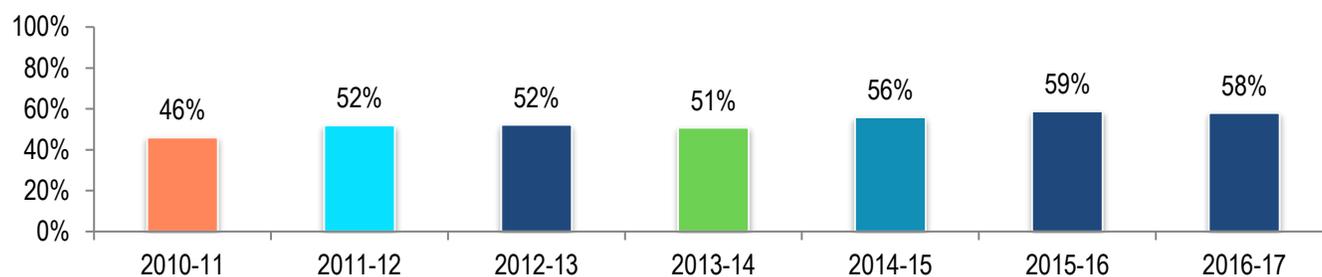
¹ "English Learner" includes students for whom there is a report of a primary language other than English on the state-approved Home Language Survey and who, on the basis of the state approved oral language (grades K-12) assessment procedures and including literacy (grades 3-12 only), have been determined 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)¹ Students



Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2016-17 N=5,276; 2015-16 N=5,155; 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).

¹ "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).

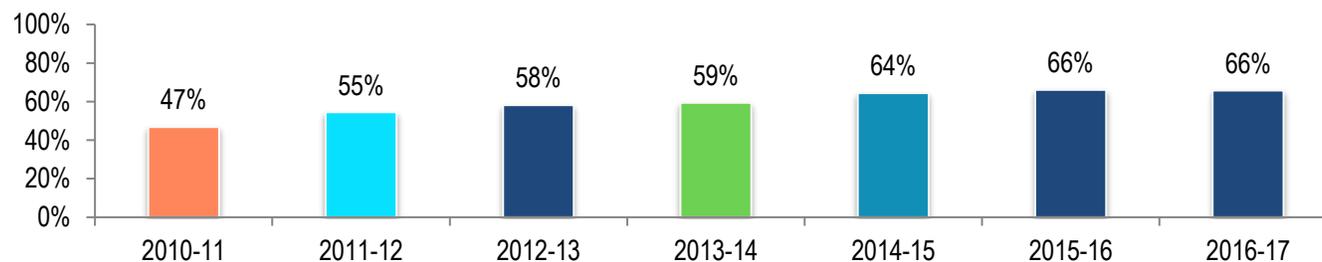
Figure 6: Percentage of Students Whose Primary Language is Not English

Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2016-2017 N=5,276; 2015-16 N=5,155; 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 Meals¹

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 2016-17, 66% 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

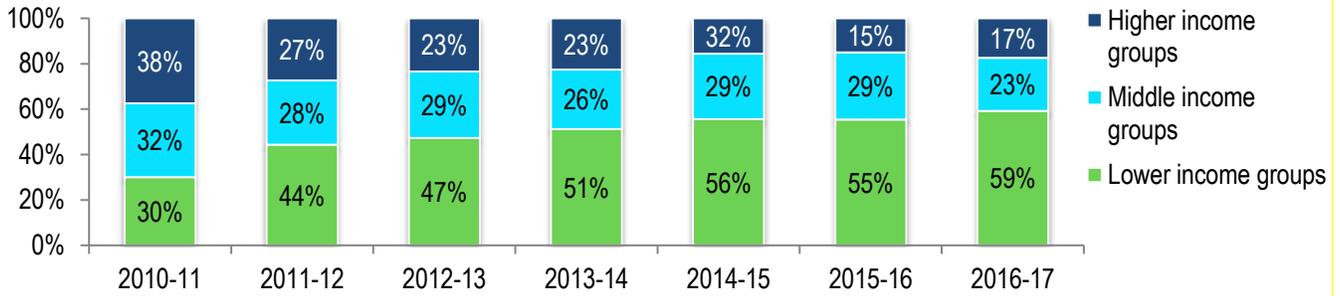
Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2016-17: N=5,276; 2015-16 N=5,155; 2014-15 N=5,427; 2013-14 N=5,201 students; 2012-13 N=5,276 students; 2011-12 N=4,863 students; 2010-11 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 59% of participating groups were classified as lower income groups, 23% as middle income groups, and 11% as higher income groups in 2016-17.

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

Figure 8: Percentage of Groups Participating, by Income Level¹



Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2016-17 N=201 groups; 2015-16 N=201 groups; 2013-14 N=195 groups; 2012-13 N=205 groups; 2011-12 N=194 groups; 2010-11 N= 176 groups).

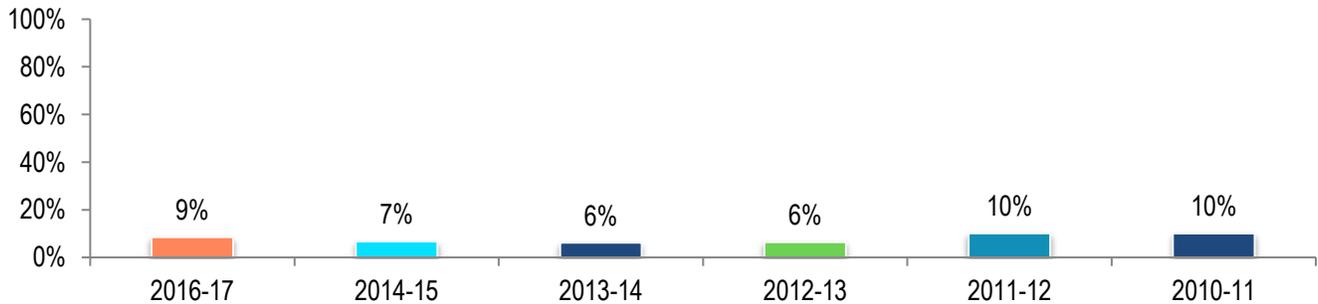
Note: Only groups that had data regarding the percentage of students receiving free or reduced price meals were included in this analysis.

¹Income 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.

Repeat Students

In 2016-17, 9% of students had previously participated in the OSO program. The percentage of students repeating the program has stayed relatively stable this year from previous years.

Figure 9: Percentage of Students Repeating the Program

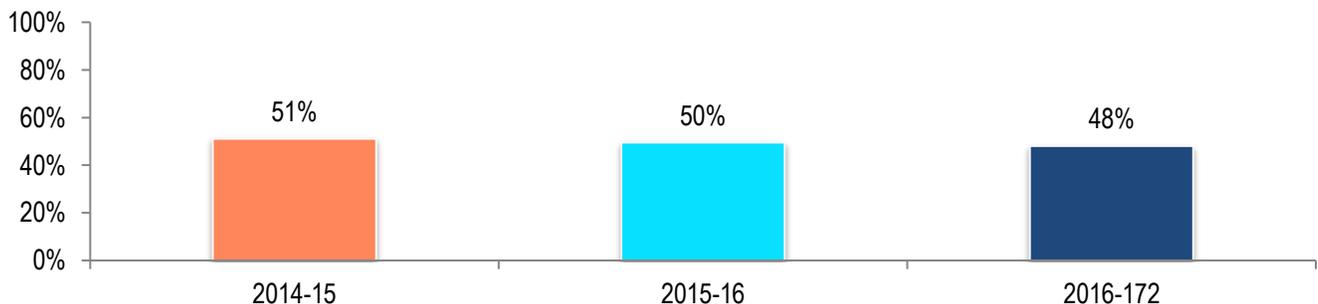


Source: O'Neill Sea Odyssey (2016-17 N=5,215; 2016-17 N= 5,215; 2014-15 N=5,039; 2013-14 N=4,849 students 2012-13 N=5,442 students; 2011-12 N=2,533 students; 2010-11 N= 4,852 students).

Past Experience on a Boat

OSO has recently started asking students if their current experience was the first time they had been on a boat in the ocean. During the 2016-17 year, nearly 50% of students indicated this was their first time on a boat, similar to past years.

Figure 10: Students Reporting this was their first time on a boat on the ocean



Source: O'Neill Sea Odyssey (2016-17 N=2,083; 2015-16 N=5,233; 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.”

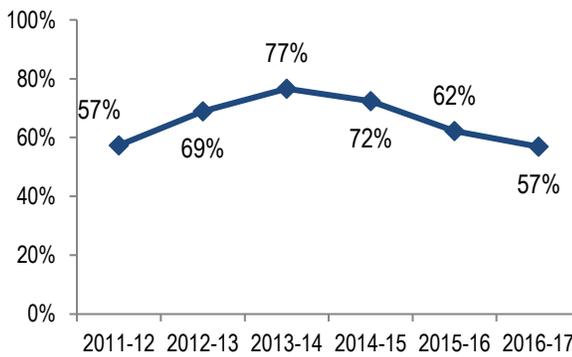
OSO, therefore, encourages teachers and group leaders to use the materials provided through the website with their students before participating in the program.

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

- In 2016-17, 57% of all teachers/group leaders reported that they had used the online teaching materials provided on the website before their trip, continuing a decreasing trend since a high of 77% in 2013-14.
- The online resources used most often by teachers were the pre-tip educational materials such as teacher packets (91%), safety and important information (80%), and parent and teacher FAQ (67%).
- The vast majority (90%) 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 (2016-17 N=167; 2015-16 N= 172; 2014-15 N= 181; 2013-14 N=167; 2012-13 N=189; 2011-12 N=176)

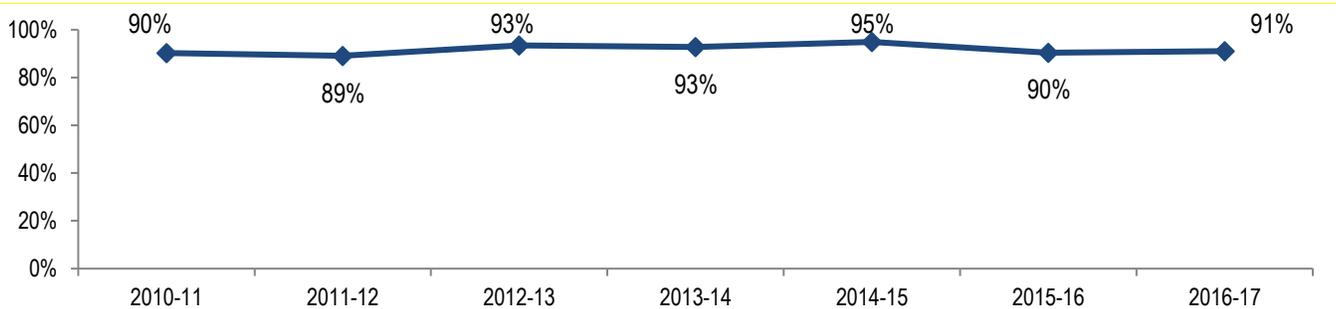
If teaching materials on the website were used...

	Online resources used before the trip	Most helpful in classroom
Pre-trip educational materials (teacher packet)	91%	88%
Expand your knowledge online learning center	21%	19 %
OSO curriculum booklet - English	50%	46%
OSO curriculum booklet - Spanish	3%	2%
Community service project help	32%	18%
Parent and teacher FAQ	65%	54%
Safety and important information	78%	46%

Source: Teacher/Group Leader Surveys (2016-17 N=98, 89)

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 (2015-16 N=166; 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.

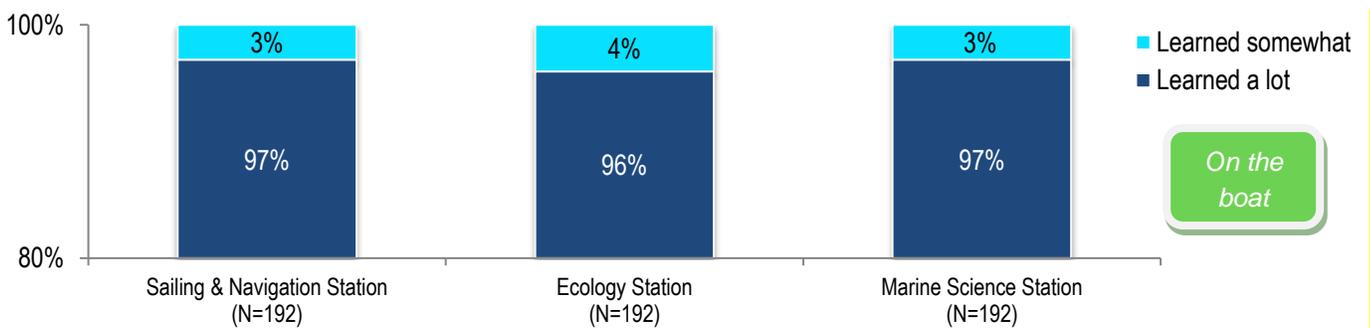
In every topic area, the vast majority of teachers/group leaders indicated that the students had "learned a lot." The percentage of teachers/group leaders who responded this way ranged from 95% to 99% across all topics.

- Of the three topics learned on the boat, between 96% and 97% 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 (98%), followed by the Ecology station (95%), and the Sailing and Navigation station (94%).

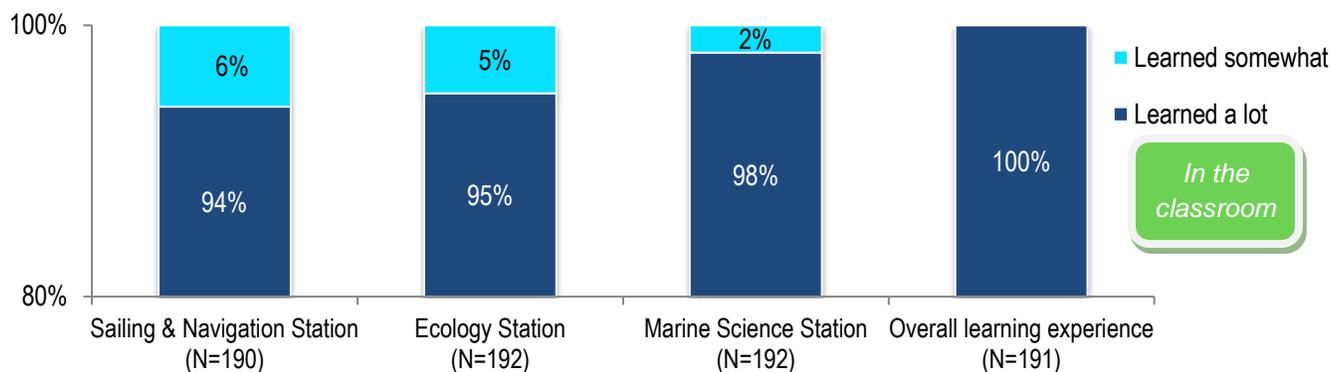
Virtually all of the teachers/group leaders (100%) reported that their students had "learned a lot" from the overall learning experience.

During the past five years (2010-11 to 2015-16), 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), 2015-16



Source: Teacher/Group Leader Surveys, 2016-17.



Source: Teacher/Group Leader Surveys, 2016-17.

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

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
On the boat							
Sailing and Navigation station	97%	97%	94%	95%	94%	96%	97%
Ecology station	96%	97%	98%	98%	96%	99%	96%
Marine science station	98%	97%	96%	98%	98%	98%	97%
In the classroom							
Sailing and Navigation station	94%	94%	91%	95%	98%	92%	94%
Ecology station	97%	97%	94%	97%	98%	100%	95%
Marine science station	98%	97%	97%	96%	99%	98%	98%
Overall							
Overall learning experience	98%	100.0%	99%	99%	100%	100.0%	100%

Source: Teacher/Group Leader Surveys, 2010-17.

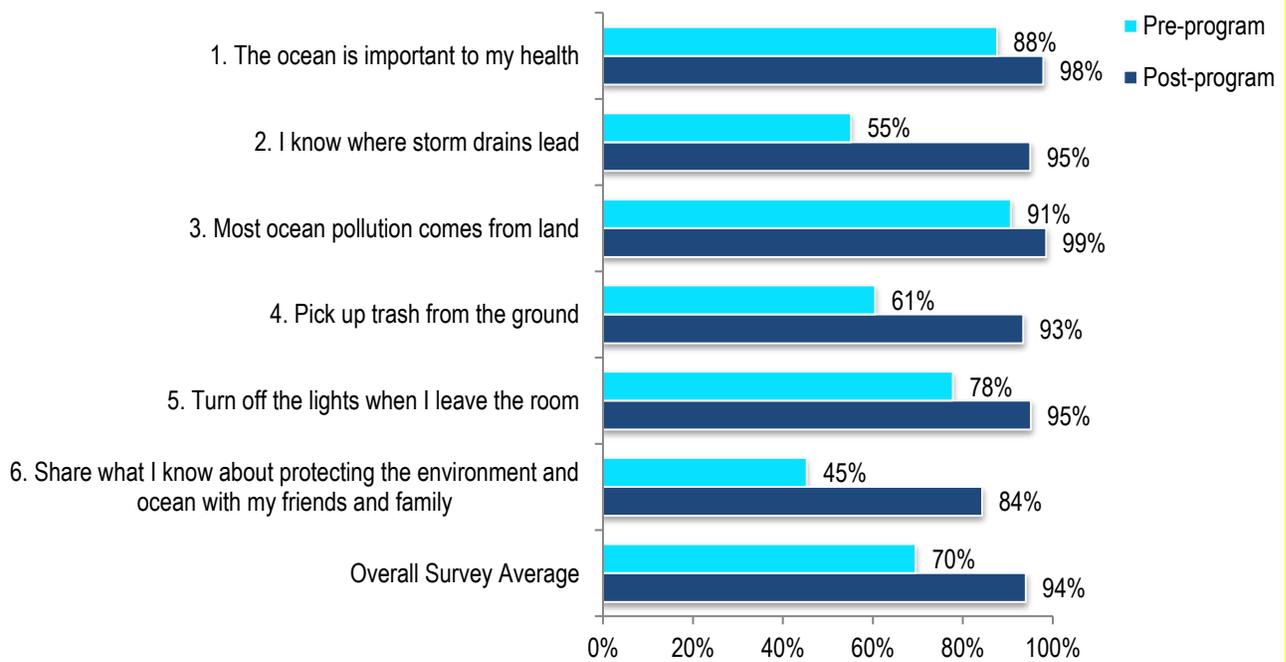
Student Environmental Awareness

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 73% of students agreed with the survey questions overall. After attending the program, this percentage increased to 95%.

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 2, "know where storm drains lead," a net increase of 40%.

Figure 14: Percentage of All Students Who Agreed with Survey Questions, Pre- and Post-Program, 2016-17



Source: Student Surveys, 2016-17 (N= 5,221 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.

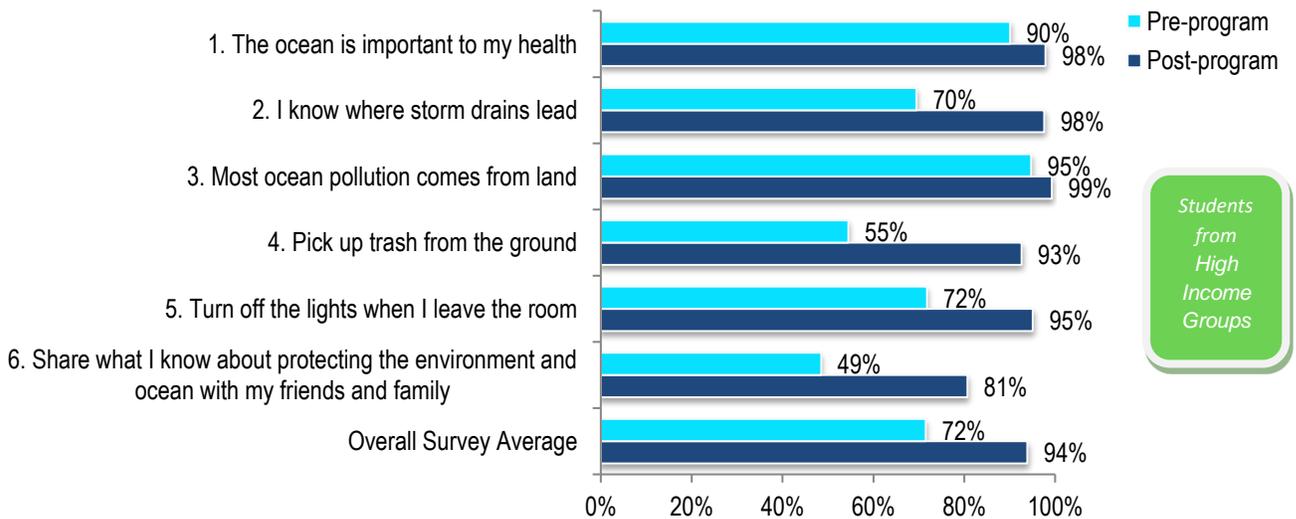
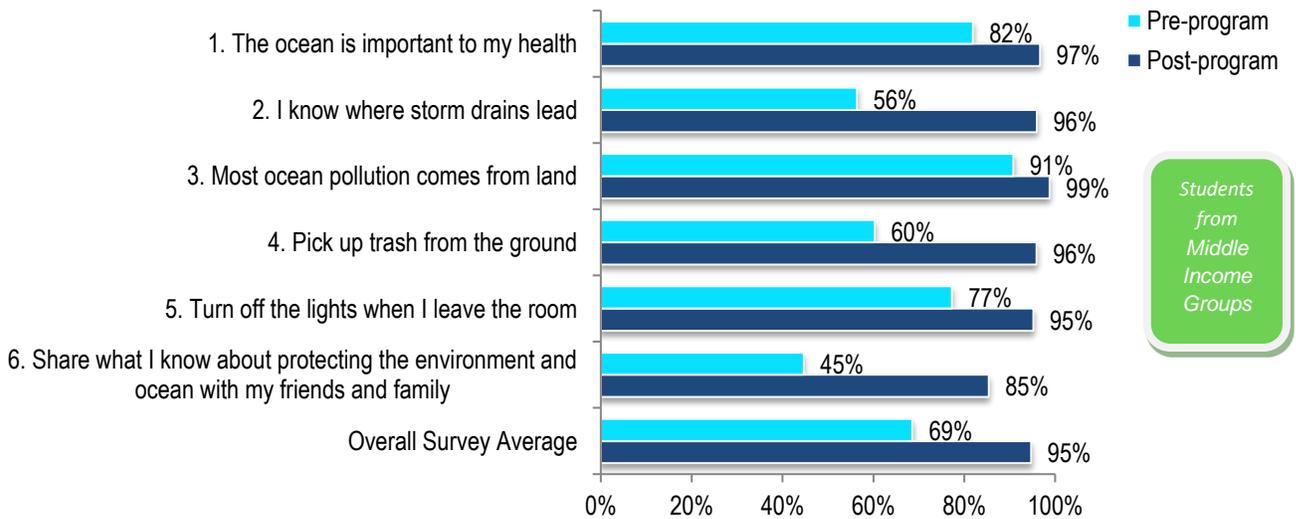
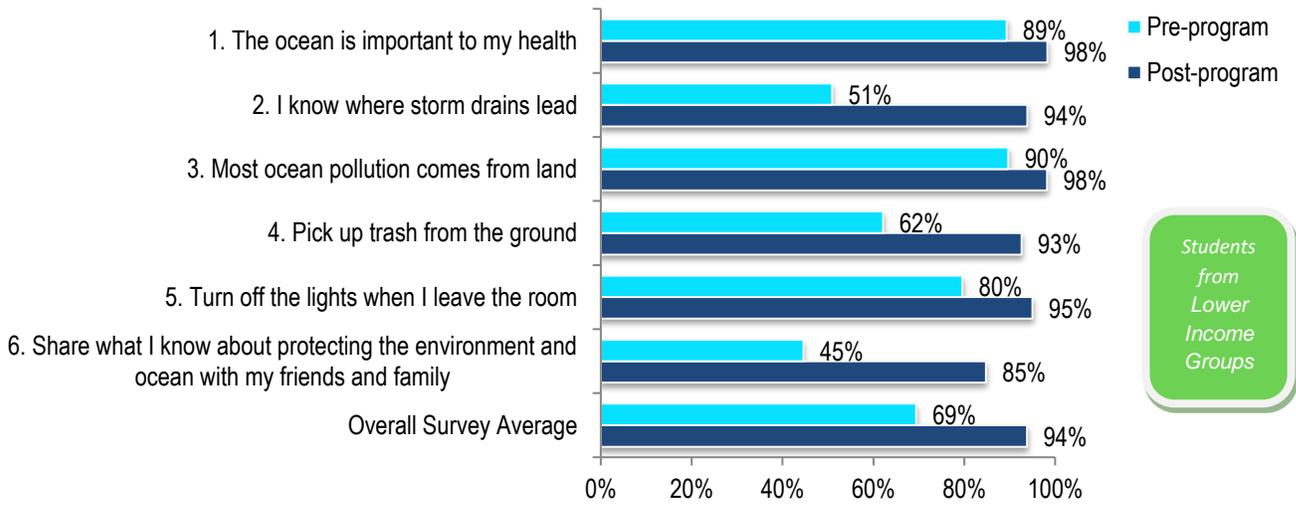
The most interesting findings were the amount of change and effectiveness of the OSO program in teaching and encouraging environmentally-conscious behavior, relative to the groups' economic background. Before the program began, a smaller percentage of students from lower (73%) and middle income (71%) 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% and 94%, respectively, of students from lower middle and higher income groups agreed with the survey questions.

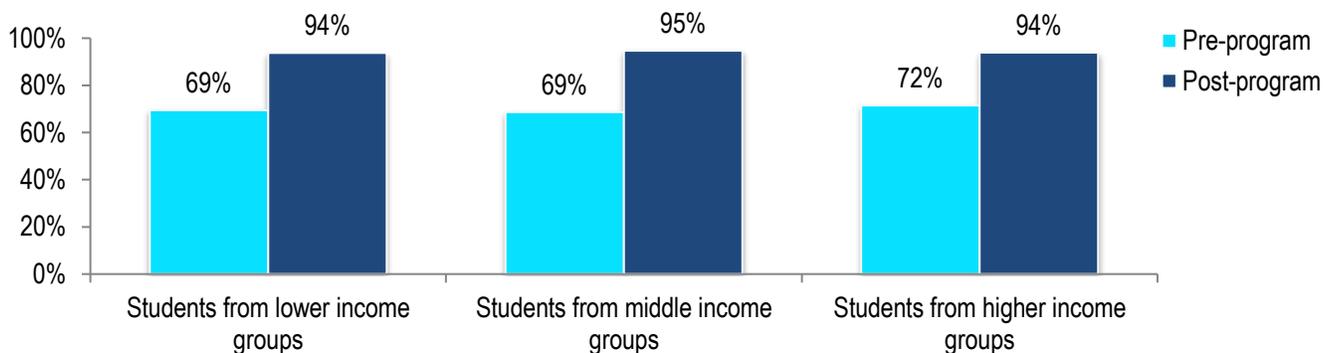
When specific survey questions were examined, the question that showed the largest difference related to economic background was Question 2, "I know where storm drains lead." For this question, students from lower and middle income groups demonstrated a greater amount of change between pre- and post-program surveys (net change of 43% and 40%, respectively) compared to students from higher income groups (net change of 28%).

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, 2016-17



Source: Student Surveys, 2016-17. Lower income students: N=3,154 students. Middle income students: N= 1,262, Higher income students: N=860 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 (2016-17: Lower income students: N=3,154. Middle income students: N= 1,262, Higher income students: N=860.)
 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 2016-2017 program cycle 201 groups participated in the O'Neill Sea Odyssey (OSO) program, representing 5,276 students. The average group size was 26.

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 (94%), and the majority of groups (98%) were comprised of students in the 4th through 6th grades. Nearly half (48%) of all students indicated it was their first time on a boat in the ocean.

It was estimated that a third (66%) of the students were Hispanic or Latino, 18% were White, and 16% were of other races/ethnicities. The percentage of English Learners (EL) was 45%, and 13% of students were Fluent-English-Proficient (FEP). When these two groups were combined, the results show that 58% of the participating students did not have English as their primary language.

More than half of the students (66%) 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 60% of participating groups came from lower income communities. Please refer to page 10 for more information.



Website and Teaching Materials

Slightly more than half (57%) of teachers and group leaders indicated that they used the website materials with their students *before* participating in the program, continuing a downward trend in recent years. The vast majority of teachers (91%) reported that they intended to use the online teaching materials in the classroom after the trip, similar to past years.

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 (93% to 99%) indicated that the students had “learned a lot.” 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 73% 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 95% 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.

In a change from last year, all income groups saw similar improvement in their agreement with the overall survey results. Before the program began, lower, middle, and high income groups agreed with the survey questions overall (all three groups were between 69% and 72%). After participating in the program, students from all income groups demonstrated similar levels of improvement, agreeing 94% of the time.

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

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

- "Seafood Watch"
- 80% of my students are second language learners. It would be great to have some curriculum that was more scaffolded - a little lighter on academic vocab, and more sentence frames.
- All areas covered.
- All good!
- Also, a moment for a quick snack between boat and lab would go a long way to support their attention spans. Thank you.
- Another fantastic program! The 4 gentlemen were excellent with the students.
- As I'm not a science teacher, not sure. Maybe "What can I do today to help with preservation"
- Can't think of anything. :)
- Competition among sea life and humans for limited resources
- Do they ever mention alternative energy?
- Even more of what they can do to protect the environment.
- Fantastic!
- Fishery management
- For the limited time, all areas are covered very well.
- Future jobs available for kids who enjoy studying the ocean.
- Great as is.
- Great experience, as usual!
- Great Pacific Garbage Patch info.
- I can't think of any at the moment.
- I can't think of anything new.
- I don't believe it would be possible - it is so extensive.
- I don't think adding topic areas would be helpful. Keep it simple.
- I really can't think of any.
- I think it was an excellent balance of learning and fun!
- I think it was perfect. More info may be too much.
- I think students would benefit from seeing the content as more relevant to their lives (education, being at home, going to the store, etc.)
- I think the "trifecta" of info is great as is.
- I think what is taught is plenty.
- I think you covered a great variety of topics, no additional topics needed
- I think you guys did a great job covering everything.
- I think you have it well covered!
- I was overall very satisfied!
- I would like to look at a bottle of drinking water under the microscope as well.
- Important topics were covered. :)
- It is good as is.
- It would be cool if kids could contribute to a shared web page - text of their service projects
- It's all amazing! Thank you!
- It's not broken don't fix it.
- Jobs, college education that deals with ocean
- Kids sound they'd love to learn more about sharks, whales and other underwater life.
- Let me think about that!
- Life cycles of grey whales and humpback whales - human impacts to whales and sea lions.

- Marine Biology career path lesson?
- Maybe a bit more of seeing if the kids know the answer before giving it to them.
- Maybe a little more on the water cycle
- Maybe animal facts like harbor seals or others we see, but I may just have not heard it because you all are knowledgeable and fantastic!!
- Maybe some history of the S.C. area before modern populations.
- Microplastic pollution
- More about seafood consumption - good and bad.
- More examples on how to prevent ocean pollution.
- More information on the kelp.
- no additional topics
- No ideas at this point, but I'll think more about it.
- None - all fantastic!
- None I can think of.
- None that I can think of at this time.
- None that I can think of.
- None, this is such a phenomenal experience
- None. Very informative.
- Not sure - I will think about this.
- Nothing - have been coming for years this is great!
- Nothing tso inclusive and perfectly tailored to all student's needs and academic levels!
- Nothing! Everything was great!
- Nothing.
- Ongoing reources to plug into as neighbors of the bay.
- Other suggestions so they can help keep the oceans clean.
- Our science teachers should join us!
- Our studens always notice the trash, maybe one topic before you start could be talking more about the trash, I know there is a station at the office, but maybe more on boat.
- Perfect!
- Recycling
- Results of plastics.
- Sailing (we were late though).
- Sailing knowledge from captain.
- Slideshow on website wasn't connecting - said it was unavailable.
- So comprehensive! Hard to think of anything .
- So far everything is great. The instructions are all knowledgeable and friendly. The captain was super! Thank you so much!
- Spending time to talk with students about why this project exists.
- Sustainability and its importance.
- The three topics are perfect.
- The topics are very thorough, no changes needed.
- This is a great program filled with plenty of information.
- Tides as they relate to moon phases.
- Whales?
- What is being done about plastics pollution locally.
- Would be fantastic to have opportunity to meet marine biologists.
- You already cover a lot!
- you already pack a lot of information in!
- You do a great job.
- Your program is interesting and seems complete for the amount of time.

Do you have any additional comments?

- A wonderful experience, thank you!
- Always a great trip! Kids are so excited to learn outside the classroom.
- Always a very informative trip. Extra kudos to all involved this time as this is a rougher class than years before.
- Amazing field trip! Thank you!
- Amazing job even though the ocean waters were too rough to leave the harbor.
- Another great field trip! Thank you!
- As always, your educational program always impresses and inspires.
- As this was my first time, I wasn't sure of what to expect - I will be better prepared (pre-load some info) before our next trip. Fabulous experience!
- Awesome experience - very educational! Thank you!
- Awesome field trip :)
- Awesome job by all the teachers/presenters. Very knowledgeable and enthusiastic. Appropriate grouping and length of time in each station.
- Awesome opportunity. Very smart crew. Thanks.
- Awesome program with amazing instructors year after year!
- Awesome team.
- Awesome, friendly, intelligent, patient and kind instructors. :)
- Best. Field trip. Ever.
- Could use direction/activities for students before or after boat ride/classroom. Three hours is a lot of time to fill productively (when two classes are involved).
- Everyone really enjoyed this field trip! Thank you for the wonderful experience.
- Excellent field trip!
- Excellent job again everyone! Sorry for your loss :(
- Excellent program! My students loved coming.
- Excellent! Thank you!
- Fantastic job (as always). Thank you for this amazing experience for my students.
- Fantastic program! The leaders were great with the kids and able to teach and keep the interests of the students.
- Great as always!
- Great as always! Thanks. This is the BEST field trip.
- Great job!
- Great job! Very organized and informative.
- Great time! Thank you!
- Great trip! Thank you so much!
- Great trip! Thanks so much!
- Great trip, as always.
- Great trip, awesome staff, we had a great time!
- Great! Thanks for all the scaffolding and just generally awesome teaching. :)
- Great! Thanks!!
- I always forget what a powerful trip this is for the kids - many have never been on a boat - or in the ocean. Thank you!
- I am grateful for all the new knowledge and science curriculum that I used.
- I appreciate the time and energy the O'Neill Sea Odyssey staff puts into making this trip such an amazing experience for our students.
- I hope you guys find out what kind of plankton we saw in the class room!

- I just want to thank you again for extending this opportunity to my students again.
- I like the balance of activities: navigation, ecology and biology!
- If the kids could take a sample of the charting that we can try again in the classroom. Or can you direct me to a website?
- It was a great experience - more than we expected.
- It was awesome, the kid's "ews and ahs" tell it all!
- It was great. Liked the navigation because they do not get that.
- It was such a great learning experience for room 28. Thank you!
- Just great!
- Love and respect the excellence of this program.
- Love the trip and connection to the Monterey Bay.
- More visuals for the students.
- My favorite part was the environmental impacts we have!
- My kids and I always love this field trip, and get more from the experience and exposure than the talking. We are so grateful to be here, thank you!
- Nametags for kids? Might help
- New crew compared to other 3 times I've attended – they're are great!
- No - thank you!
- No, thank you very much!
- Once again - great experience and woohoo we get the prize for number of kids seasick!
- Open-house or pre-field trip visit for teachers (mostly for new teachers)
- Our school enjoys the privilege of coming here and learning more about our environment and the value of protecting our world.
- Perfect!
- Really enjoyed the entire experience!
- See my previous survey.
- Thank you for such a wonderful experience.
- Thank you again for a most wonderful experience! The best day of their year!
- Thank you again for such an unforgettable learning experience.
- Thank you for 8 great years, I'm moving to first grade and will miss this trip.
- Thank you for a great day!
- Thank you for a wonderful experience. The information is crucial for these kiddos.
- Thank you for another wonderful experience! Staff is knowledgeable and friendly. Nice all around! What a phenomenal experience.
- Thank you for giving my class the chance to be part of this field trip.
- Thank you for including our 2 classes that were on the waiting list. The students have been very enthusiastic!
- Thank you for providing this learning environment for students.
- Thank you for such an amazing experience for my young scientists!
- Thank you for the opportunity. It's a wonderful program!
- Thank you for this program! It is amazing and your whole crew is fantastic!
- Thank you for your patience and teaching - we had a great time.
- Thank you for your patience!!!
- Thank you so much
- Thank you so much for all you do for our community and our children.
- Thank you so much!
- Thank you so much! Many students have never been on the ocean! :) So exciting!

- Thank you so much, kids had a great time learning.
- Thank you so very much. We were so stoked to go out! Everyone was super professional and the kids and parents really had a good time!
- Thank you very much this was a great experience. :)
- Thank you!
- Thank you! As always a stellar educational experience!
- Thank you! It was a fantastic learning opportunity for my students. :)
- Thank you! The kids and I really enjoy it and we learn a lot.
- Thank you! This experience is incredibly important for these kids!
- Thank you! We had a great time. Hope to see you all next year.
- Thank you!!
- Thank you!!!
- Thank you, wonderful as always.
- Thanks
- Thanks again!
- Thanks for another awesome trip!
- Thanks!
- Thanks! Again
- The only suggestion I have is to call on a variety of students. Also give them a chance to try out their thinking with a partner before sharing out.
- The students from our school NEVER get an experience like this so we greatly appreciate EVERYTHING you do for us!
- The teachers spoke really quickly. Almost all my students are language learners and would benefit from speaking slowly.
- The whales were amazing! Thank you! *Maybe add a quick snack between the boat and stations? I know it takes time, but the kids were starving. :)
- This experience was exceptional. The exposure is a lifetime memory. A lot of what was learned/experienced ties in with unit 4 in what we are learning "Ecology and Resources." :)
- This field trip is a perfect companion to all the env. study that we do throughout the year.
- This is a wonderful trip!
- This is always my favorite field trip. I feel so grateful my students have this experience. I prepared my students this morning that we may not leave the harbor due to the weather, so it was a happy surprise that it worked out. Even the one year my kids didn't leave the harbor, they still learned a lot. Thank you all so much!
- this is always such a great experience. Thank you for having us. My students are very grateful.
- This is an amazing learning opportunity for our students!! Thank you!!
- This is awesome. I can say this a thousand times but this trip make it real for them.
- This is so well done! Very informative. Thank you!
- This is such a fabulous experience for the students. Thank you so much!
- This is the best field trip that we take our students on! It's well organized, informational, educational, and fun.
- This program is priceless to my students and the parent chaperones that came with me! You are making an impact on their learning and their future. Thank you!

- This trip is a wonderful experience for kids who live in San Jose! For many of them, this is a first being at the ocean/boat.
- This trip is always amazing! What an experience for my students. What they learned will stay with them for a lifetime. Thank you!
- This was a fantastic trip! Thank you for all you do. We all had a great time!
- This was an awesome hands on learning activity - thank you! :)
- This was an incredible experience! Thank you
- This was my first visit and I absolutely LOVED it! Very knowledgeable, patient, friendly staff.
- This was my second visit. Last April it rained in the morning, but we did go out to sea with modified lessons. Today was great weather, but our bus came one hour late, so we didn't get to see the sail part (I haven't seen it still). This time the lessons were done on the boat which was great! Many of my students have never been on a boat or even seen the ocean. This field trip was tremendous fun! Never a boring moment. I believe my students learned a lot and will remember this field trip. This is one of my favorite field trips and I have been teaching for 29 years.
- This was one of the best field trips we have been on. Thank you very much!
- This was such a great experience! So many new experiences and many relevant to our 6th math and science curriculum! Thank you for providing so many reasons to take care of our environment!
- Today was great. Your staff is awesome with kids!
- Too bad we couldn't get out in the ocean but we still had a lot of fun and learned a lot.
- Try using call response to get students' attention: When I say sea you say odyssey etc.
- Very powerful. Important that kids realize that what they do in the valley affects the ocean.
- Very well done, enthusiastic and educational.
- We are so grateful to have this amazing experience. Thank you!!!
- We loved it! Students will never forget this wonderful experience! Thank you!
- We loved this trip, well rounded and excellently ran
- We would have loved to go out but it was understandable.
- What a fantastic experience! The kiddos were so engaged. Totally meets NGSS inquiry exploration experiential
- Wonderful experience for all.
- Wonderful experience! Learned a lot! Thank you!
- Wonderful field trip! This is such a great experience for the kids! They are very impacted by "being there."
- Wonderful learning experience - thank you!
- Wonderful program!
- Wonderful time! Thanks so much!
- Wonderful trip - I'm sorry we were late :(
- Wonderful, engaging field trip!!
- You all are doing a wonderful job!
- You all did a great job! It was an amazing experience for my students.
- You guys did a great job, so educational! Thank you
- You guys do an AMAZING job always. Thanks for letting us be part of it.
- You guys ROCK! Such a great experience for the kiddos! (and grown-ups) :)
- You guys rock! We are so blessed to do this trip every year. The kids learn a lot and have an awesome experience to go home with. Thank you!!
- You have a wonderful crew who engage the students and make them conscious of the environment. Thank you
- Your program is amazing! Very educational and the opportunity to have the transportation grant makes it possible.
- Your usual excellent job of keeping the kids engaged and focused!

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.



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 the children learned from the following?	Learned a lot	Learned a little	Did not learn at all
On the boat:			
1. Sailing & Navigation station: electronic technology and other tools for navigation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Ecology station: Sanctuary characteristics, marine life and habitats.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Marine science station: life cycles, food station, balance that helps maintain life in the sea.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In the classroom:			
4. Sailing & Navigation station: Latitude, longitude, and basic geometry as it relates to navigation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Ecology station: water cycle and watershed, ocean pollutants, solutions to pollution.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Marine science station: 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?

13. Do you have any additional comments?

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

Student Survey

The Student Survey used in this program cycle 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



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.

Watsonville Office:

P.O. Box 1927

Watsonville, CA 95077

Tel: (831) 728-1356 - Fax: (831) 728-3374

San Jose Office:

1871 The Alameda, Ste. 180

San Jose, CA 95126

Tel: (408) 247-8319 - Fax: (408) 260-7749

www.appliedsurveyresearch.org