

O'NEILL  
**SEA**  
odyssey



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**SEA**  
Odyssey

2018-2019 survey results  
**FALL 2019**



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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 100,000 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 2018 - June 2019 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 2018-19 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.

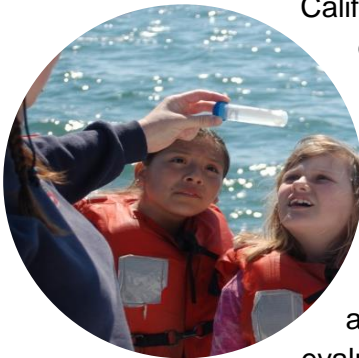
## *Demographic Data Collection*

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 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 2018 and June 2019, 209 groups participated in the O'Neill Sea Odyssey (OSO) program, representing 5,539 students. Group sizes ranged from 7 to 35 students, with an average group size of 26.
- The majority of groups came from Santa Cruz County (43%) and Santa Clara County (27%).
- Approximately 95% of groups were of students between 4<sup>th</sup> and 6<sup>th</sup> grade, the program's target population.
- Nearly half (46%) of students indicated it was their first time on a boat in the ocean.
- Based on population estimates, 68% of the students were Hispanic or Latino, 17% were White, 8% were Asian, Filipino, or Pacific Islander, 1% were African American, less than 1% were American Indian or Alaska Native, and 5% 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.
- The majority (67%) of students were receiving free or reduced price meals.
- Approximately 60% of participating groups were lower income groups, 28% were middle income groups, and 13% were higher income groups.

## Website Use

- Eighty-six 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 (93%) 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 68% 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 100%) indicated that their students had "learned a lot."
- Of the three topics learned on the boat, 99% of teachers/group leaders thought students had "learned a lot" in the Marine Science station, 97% of teachers/group leaders thought students had "learned a lot" in the Sailing & Navigation station, while 98% 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 (99%), followed by the Ecology station (98%), and the Sailing and Navigation station (95%).
- 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 59% of students agreed with the survey questions overall. After attending the program, this percentage increased to 83%.
- 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 (56%) and middle (62%) income groups generally had very slightly lower overall levels of agreement before the program

started than the higher (67%) income groups but all income groups agreed at between 79% and 89% by the end of the program.

# Results

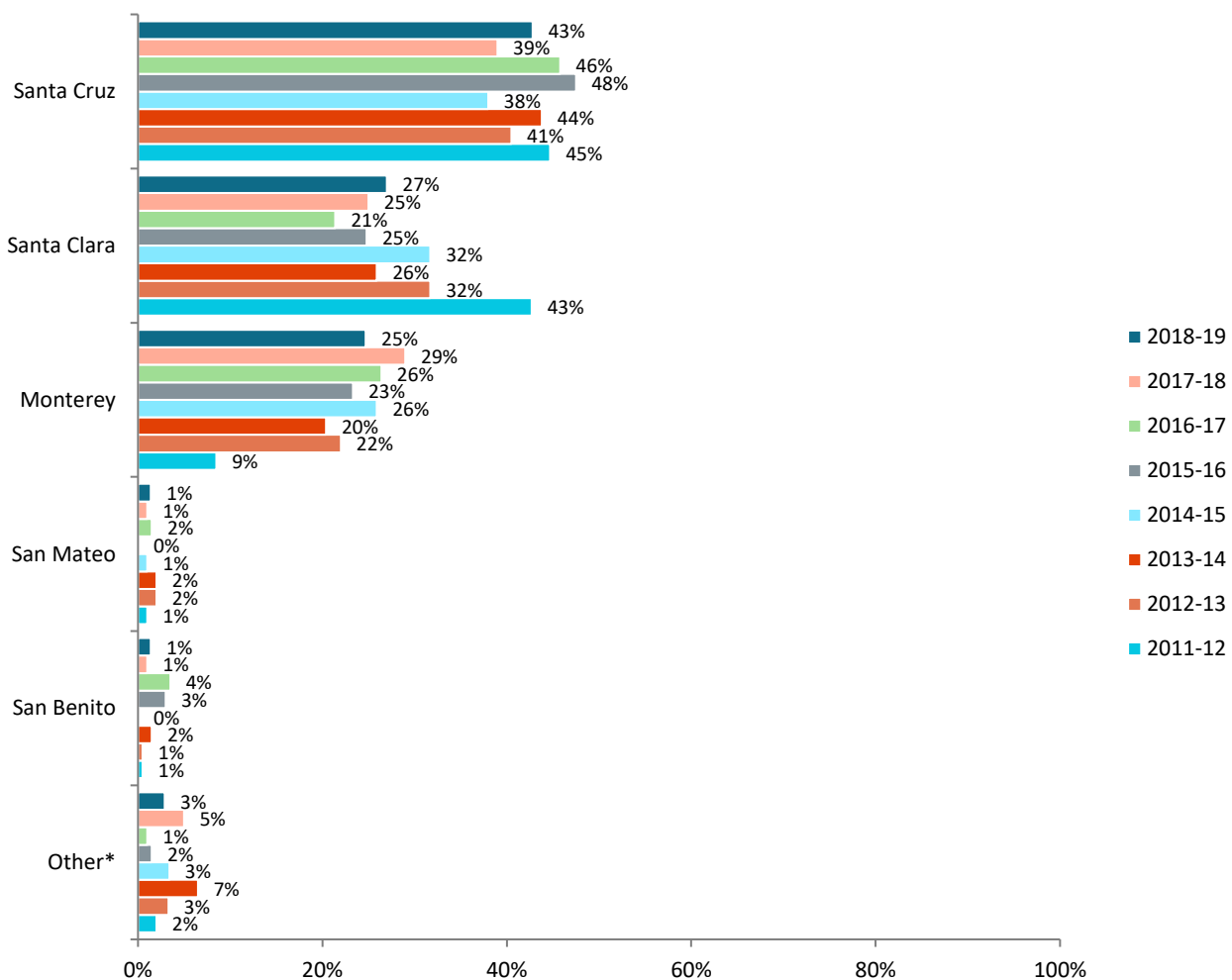
## Student Participation and Demographics

Between July 2018 and June 2019, 209 groups participated in the O'Neill Sea Odyssey (OSO) program, representing 5,539 students. Group sizes ranged from 7 to 35 students, with an average group size of 29.

### Counties of Origin

Most groups came from Santa Cruz County (43%), Santa Clara County (27%), and Monterey County (25%). Between 2010-11 and 2018-19, 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 (2018-19 N=209 groups; 2017-18 N=207 groups; 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).

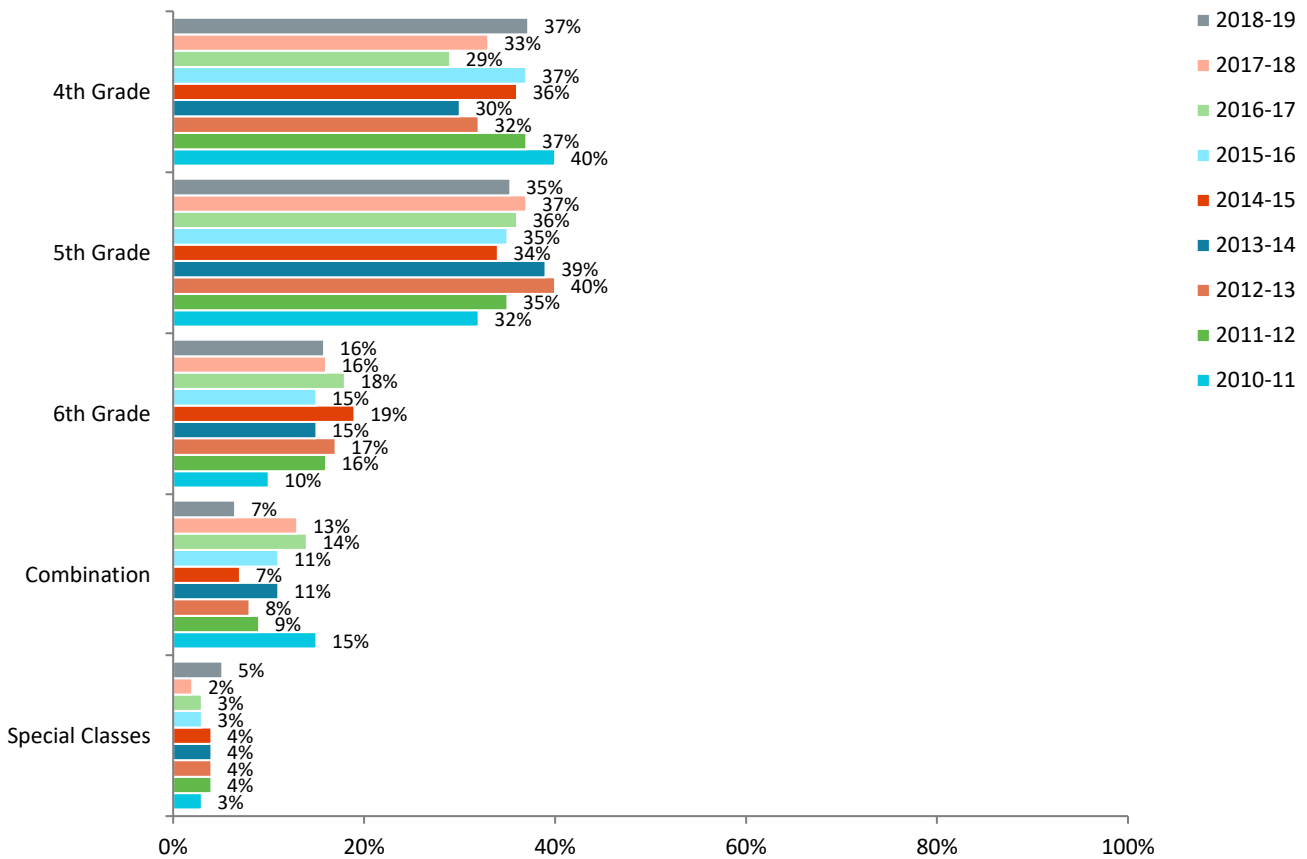
\* "Other" counties differ by year but includes the counties of Alameda, Contra Costa, Nevada, Sacramento, San Francisco, San Joaquin, Sonoma, Stanislaus, Yolo and those where no information was available.

## Grade Levels

OSO's target population is students in the 4th through 6th grades and, in 2018-19, the majority of groups were in this grade range (95%). In 2018-19, the highest percentage of groups were from the 4th grade groups (37%), followed by 5th grade (35%), 6th grade (16%), and combined 4-6th 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**



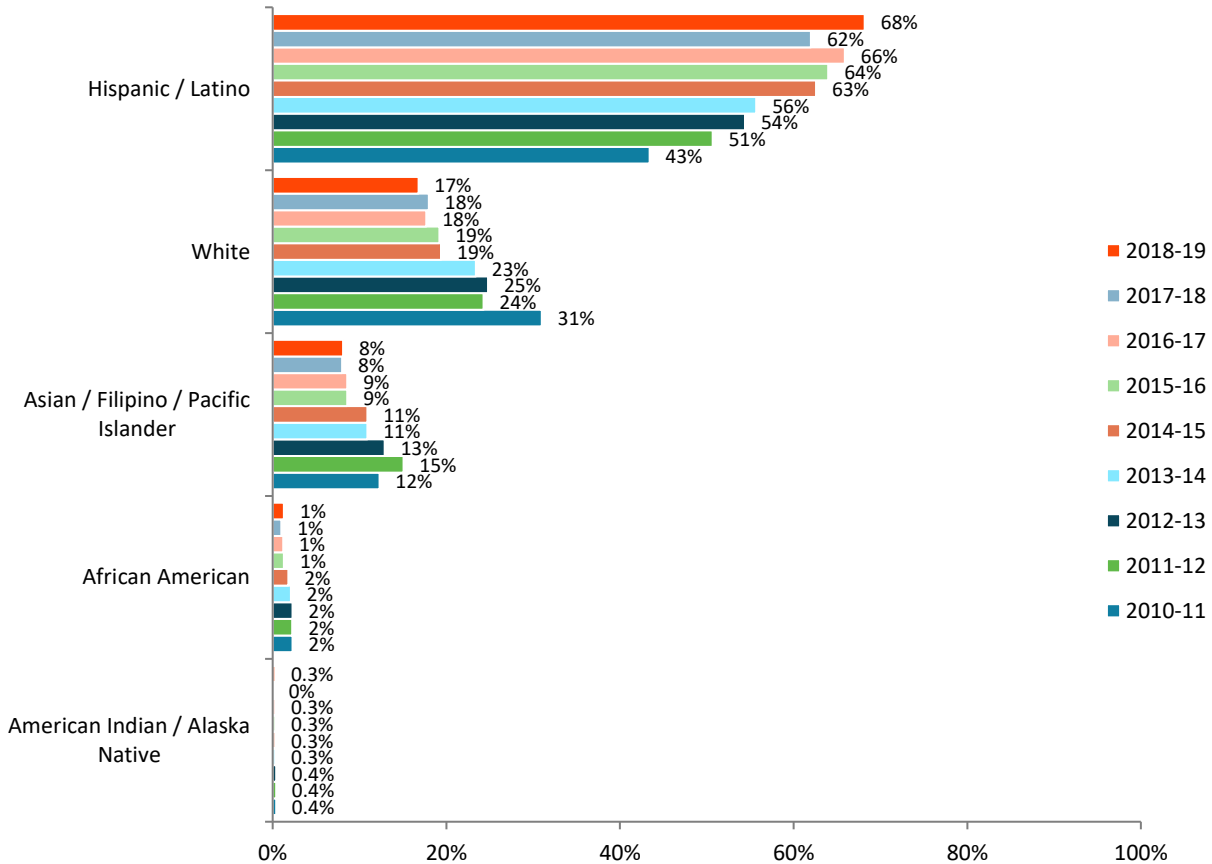
Source: O'Neill Sea Odyssey (2018-19 N=209 groups; 2017-18 N=207 groups; 2016-17 N=201 groups; 2015-2016 N=202 groups; 2014-15 N=205 groups; 2013-14 N=201 groups; 2012-13 N=205 groups; 2011-12 N=197 groups; 2010-11 N=182 groups).  
 \* "Special Classes" refers to groups comprised of students in grades 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 2018-19, it was estimated that 68% of the students were Hispanic or Latino, 17% were White, 8% were Asian, Filipino, or Pacific Islander, 1% were African American, less than 1% were American Indian or Alaska Native, and 5% were of another race/ethnicity.

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



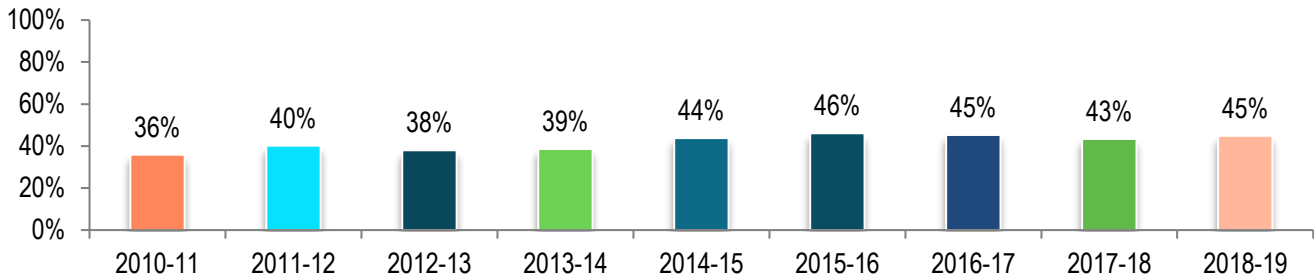
Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2018-219 N=5,539 students; 2017-18 N=5,222 students; 2016-17 N=5,276 students; 2015-16 N=5,281 students; 2014-15 N=5,519 students; 2013-14 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 2018-19, it was estimated that 45% of students attending the OSO program were English Learners (EL), and 14% of student participants were Fluent-English-Proficient (FEP). 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 2018-19, 59% of the students attending the OSO program did not speak English as their primary language, an increase from 46% since 2010-11.

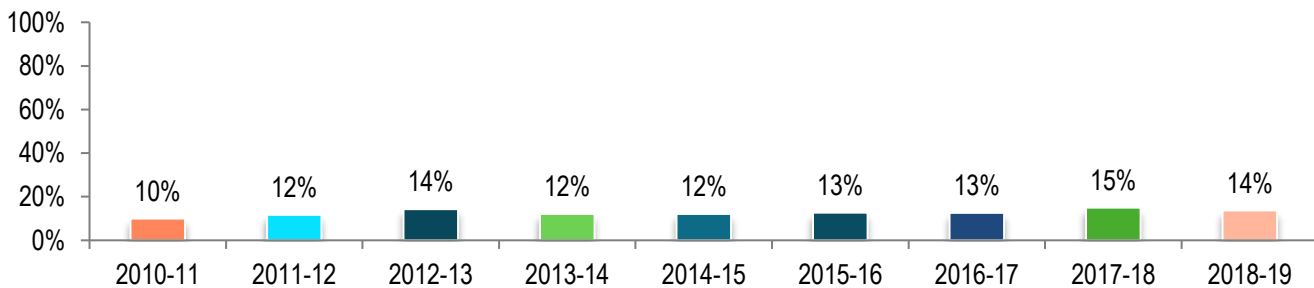
**Figure 4: Percentage of English Learner (EL)<sup>1</sup> Students**



Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2018-19 N=5,539 students; 2017-18 N=5,222 students; 2016-17 N=5,276 students; 2015-16 N=5,155 students; 2014-15 N=5,519 students; 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.

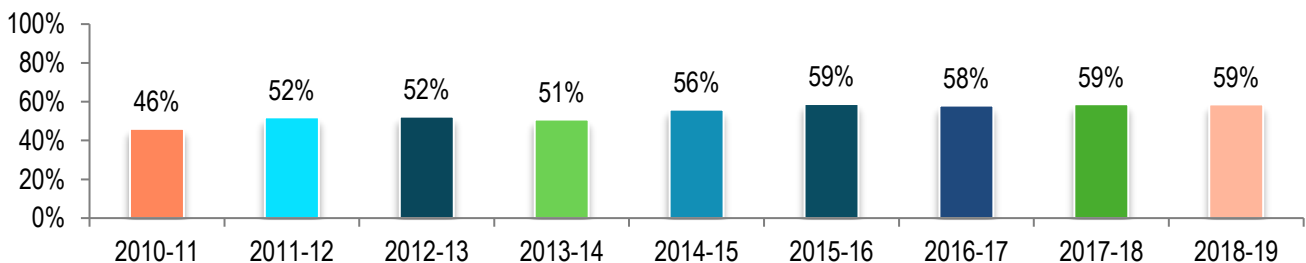
**Figure 5: Percentage of Fluent-English-Proficient (FEP)<sup>1</sup> Students**



Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2018-19 N=5,539 students; 2017-18 N=5,222 students; 2016-17 N=5,276 students; 2015-16 N=5,155 students; 2014-15 N=5,423 students; 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**



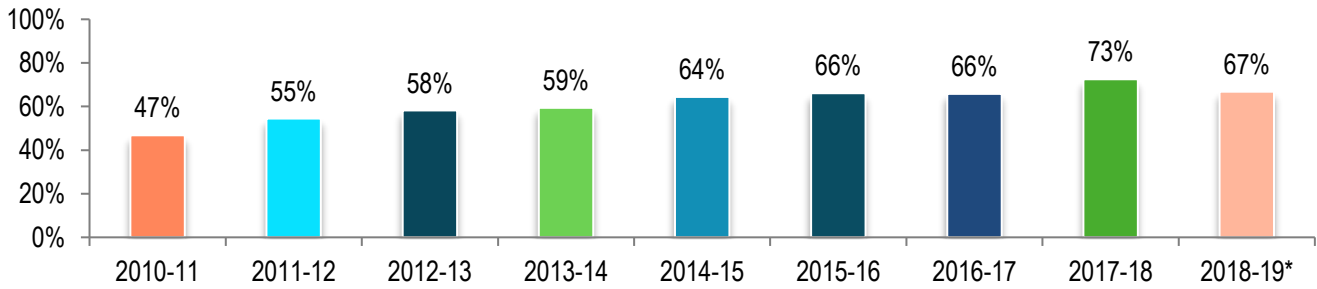
Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2018-19 N=5,539 students; 2017-18 N=5,222 students; 2016-17 N=5,276 students; 2015-16 N=5,155 students; 2014-15 N=5,427 students; 2013-14 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 2018-19, 67% of the students who attended the OSO program were receiving free or reduced price meals, a significant increase from previous years.

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



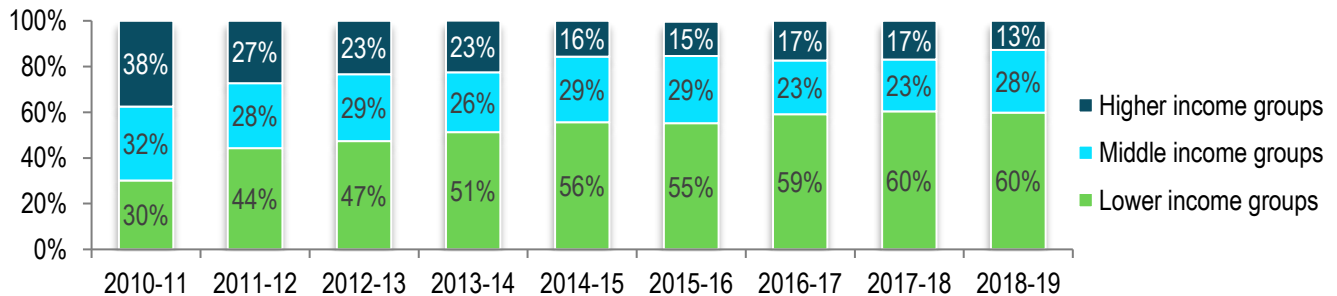
Source: Data provided by O'Neill Sea Odyssey, collected from State of California Department of Education, California Basic Education Data System, DataQuest database (2018-19 N=5,539 students; 2017-18 N=5,222 students; 2016-17 N=5,276 students; 2015-16 N=5,155 students; 2014-15 N=5,427 students; 2013-14 N=5,201 students; 2012-13 N=5,276 students; 2011-12 N=4,863 students; 2010-11 N=4,852 students).

\* Note: Recent changes in the way school districts calculate students receiving free and reduced priced meals may have had an impact on this result. For further detail, please see Appendix III.

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 60% of participating groups were classified as lower income groups, 28% as middle income groups, and 13% as higher income groups in 2018-19.

**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 (2018-19 N=209 groups; 2017-18 N=207 groups; 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.

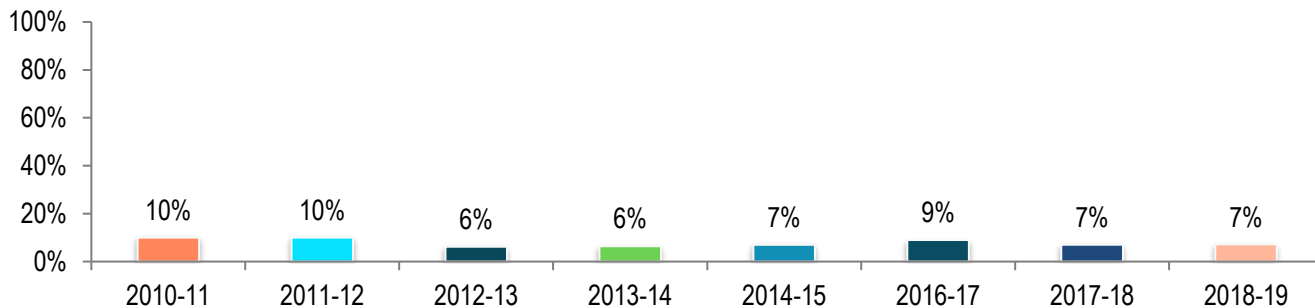
<sup>1</sup> Only groups that had data regarding the percentage of students receiving free or reduced price lunches were included in this analysis.

<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.

### Repeat Students

In 2018-19, 7% 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**

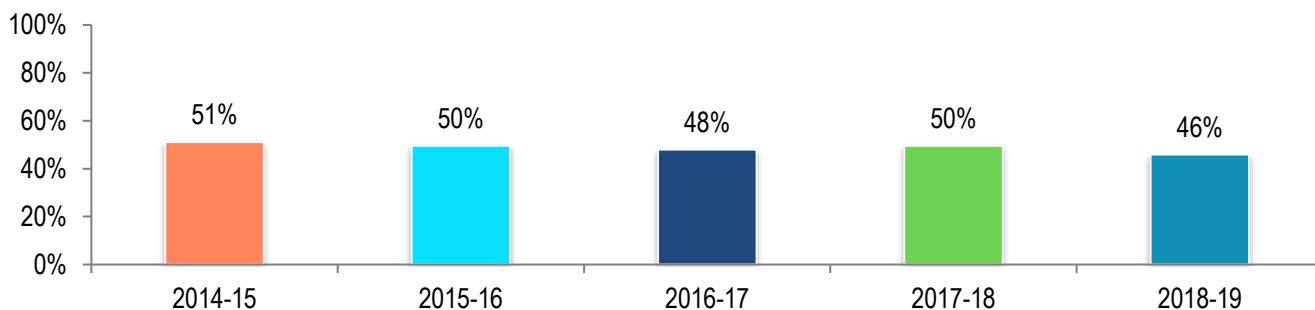


Source: O'Neill Sea Odyssey (2018-19 N=5,539; 2017-18 N=5,104 students; 2016-17 N=5,215 students; 2016-17 N= 5,215 students; 2014-15 N=5,039 students; 2013-14 N=4,849 students 2012-13 N=5,442 students; 2011-12 N=2,533 students; 2010-11 N= 4,852 students).

### 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 2018-19 year, 46% 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 (2018-19 N=5,539; 2017-18 N=5,104; 2016-17 N=5,215; 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.

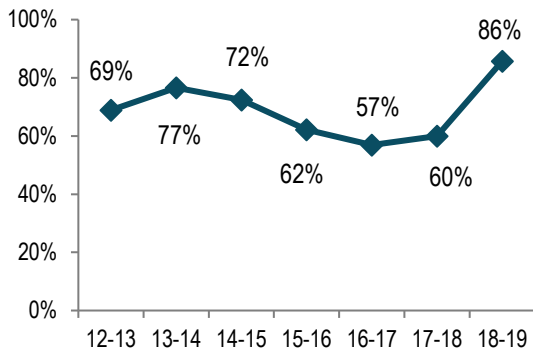
Teachers/group leaders were asked additional questions about the teaching materials available on the website.

- In 2018-19, a high of 86% of all teachers/group leaders reported that they had used the online teaching materials provided on the website before their trip.
- The online resources used most often by teachers were the pre-tip educational materials such as teacher packets (88%), safety and important information (68%), and parent and teacher FAQ (65%).
- The vast majority (93%) 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 (2018-19 N=209; 2017-18 N=185; 2016-17 N=167; 2015-16 N= 172; 2014-15 N= 181; 2013-14 N=167; 2012-13 N=189; 2011-12 N=176)

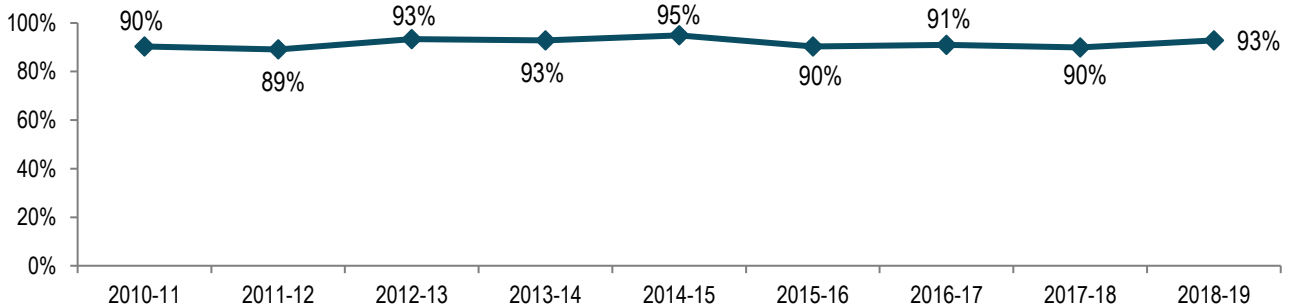
**If teaching materials on the website were used...**

	Online resources used before the trip	Most helpful in classroom
Pre-trip educational materials (teacher packet)	88%	84%
Expand your knowledge online learning center	25%	16 %
OSO curriculum booklet - English	52%	45%
OSO curriculum booklet - Spanish	10%	6%
Community service project help	26%	8%
Parent and teacher FAQ	65%	39%
Safety and important information	68%	40%

Source: Teacher/Group Leader Surveys (2018-19 N=112, 105)

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 (2018-19 N=184; 2017-18 N=173; 2016-17 N=167; 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.

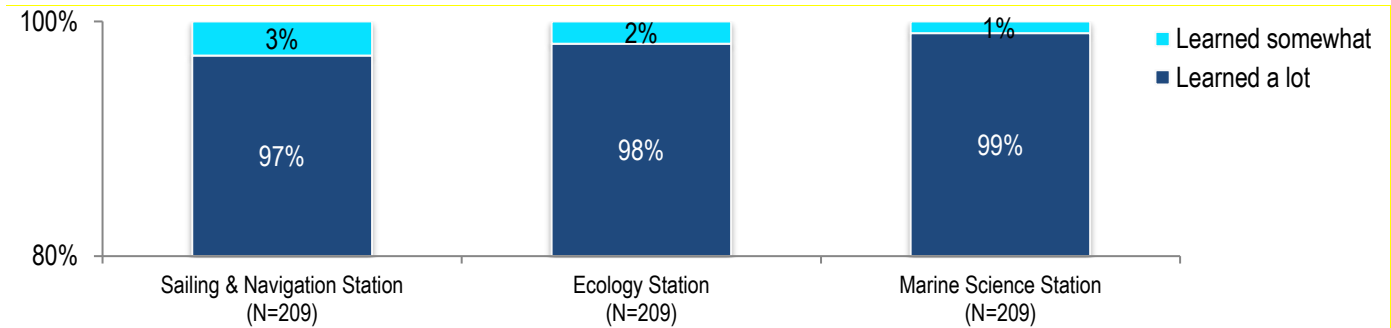
- Of the three topics learned on the boat, between 97% and 99% of teachers/group leaders thought students had "learned a lot" in the Marine Science station, the Sailing & Navigation station, and the Ecology station.

- 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 (95%).

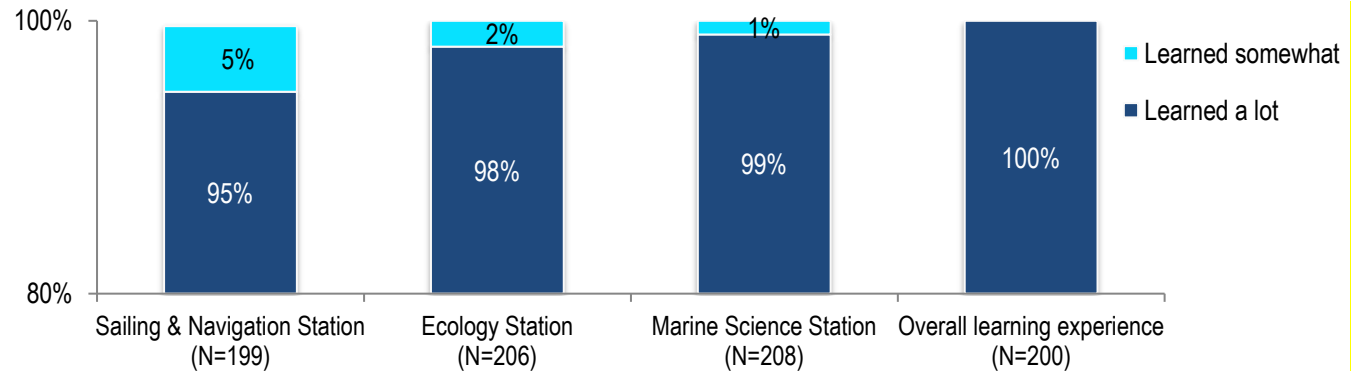
Virtually all of the teachers/group leaders (100%) reported that their students had “learned a lot” from the overall learning experience.

During the past eight years (2010-11 to 2018-19), 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), 2018-19**



Source: Teacher/Group Leader Surveys, 2018-19.



Source: Teacher/Group Leader Surveys, 2018-19.

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

*On the boat*

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
<b>On the boat</b>								
Sailing and Navigation station	97%	94%	95%	94%	96%	97%	96%	97%
Ecology station	97%	98%	98%	96%	99%	96%	98%	98%
Marine science station	97%	96%	98%	98%	98%	97%	99%	99%
<b>In the classroom</b>								

*In the classroom*

Sailing and Navigation station	94%	91%	95%	98%	92%	94%	92%	95%
Ecology station	97%	94%	97%	98%	100%	95%	97%	98%
Marine science station	97%	97%	96%	99%	98%	98%	98%	99%
<b>Overall</b>								
Overall learning experience	100.0%	99%	99%	100%	100.0%	100%	100%	100%

Source: Teacher/Group Leader Surveys, 2010-19.

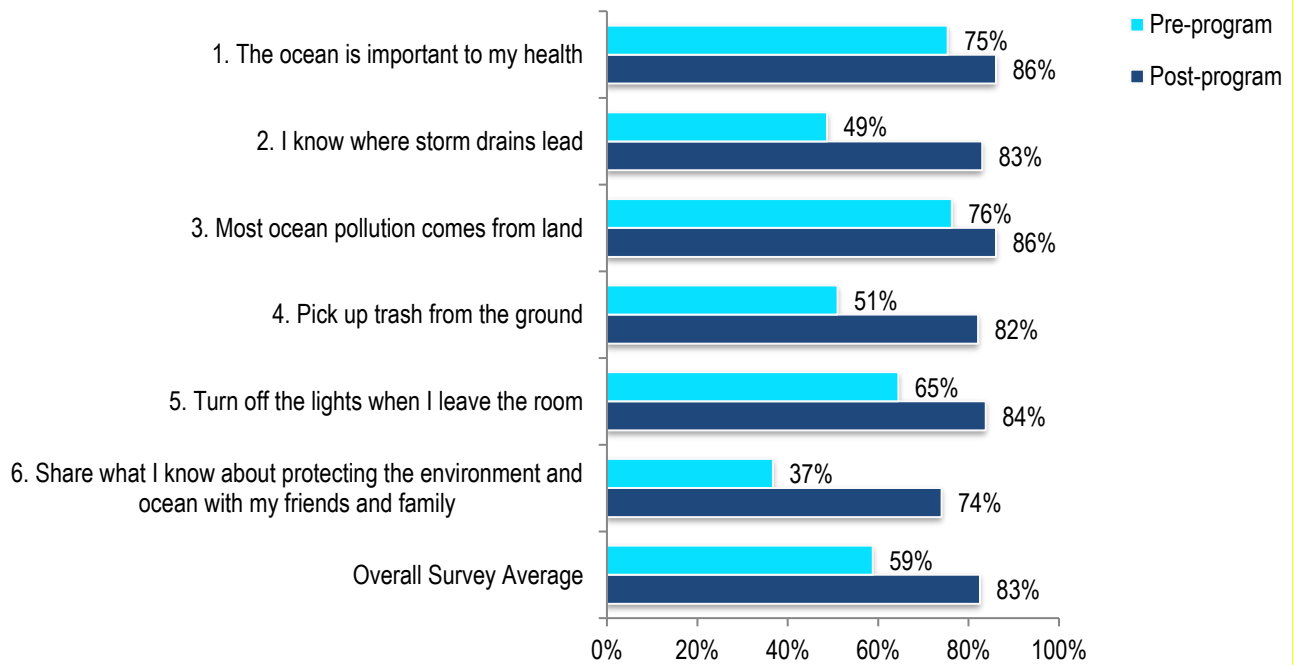
## *Student Environmental Awareness*

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 59% of students agreed with the survey questions overall. After attending the program, this percentage increased to 83%.

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, "share what I know about protecting the environment and ocean with my friends and family," a net increase of 37%.

**Figure 14: Percentage of All Students Who Agreed with Survey Questions, Pre- and Post-Program, 2018-19**



Source: Student Surveys, 2018-19 (N= 5,748 students).

In the 2018-19 school year, O'Neill Sea Odyssey posited the following outcomes: 1) 90% of students will have increased their awareness of and threats to watersheds and the ocean, 2) 90% of students are more likely to protect Monterey Bay and the ocean, and 3) 90% of students will advocate ocean and watershed stewardship to their friends and family. In the 2018-2019 school year, students moved from 67% to 85% in Outcome 1, 58% to 83% in Outcome 2, and 37% to 74% in Outcome 3.

### *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.

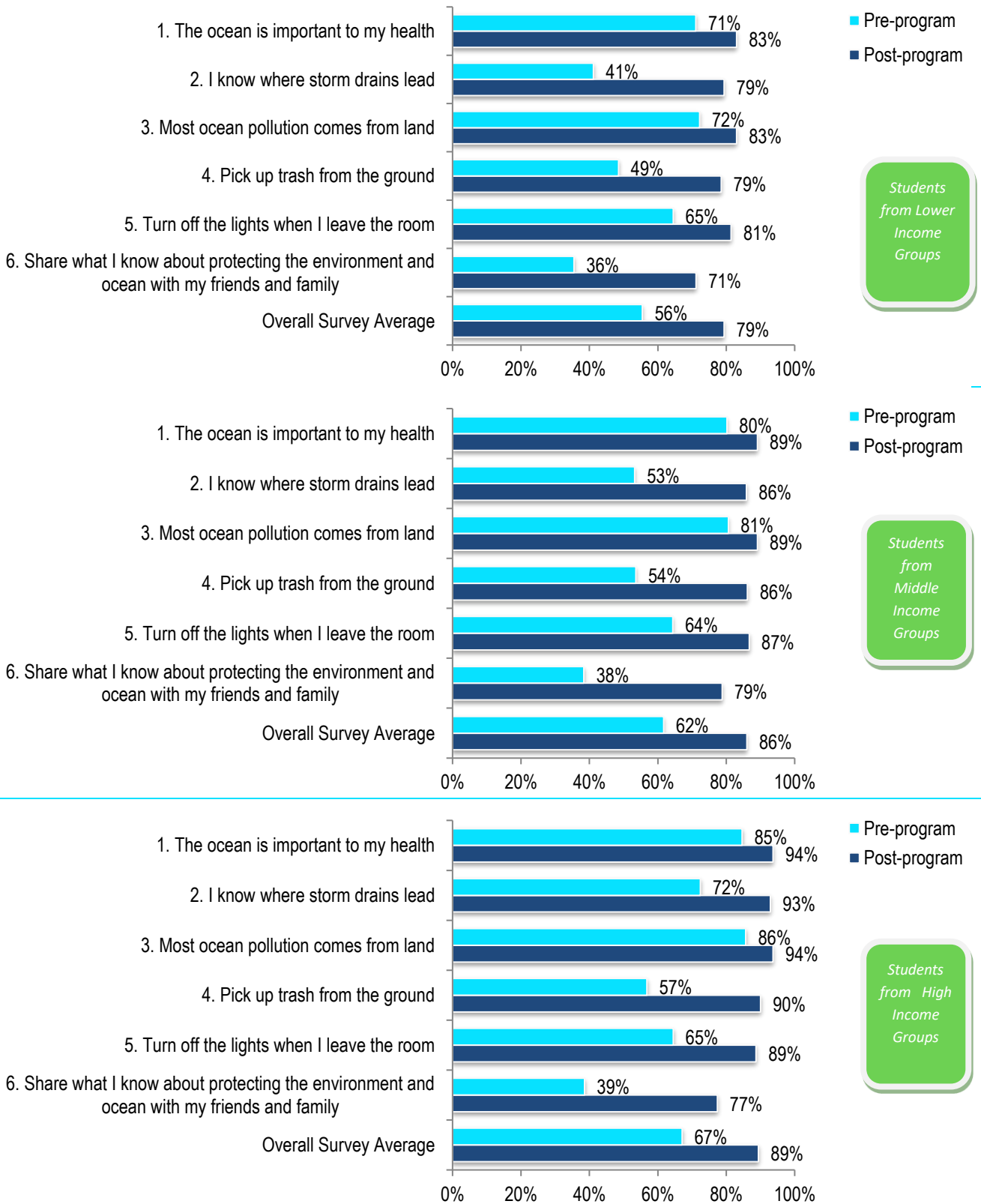
The most interesting findings were the amount of change and effectiveness of the OSO program in teaching and encouraging environmentally-conscious behavior, relative to the groups' economic background. Before the program began, a smaller percentage of students from lower (56%) and middle income (62%) groups agreed with the survey questions overall, compared to students from higher income groups (67%). After participating in the program, the students from lower and middle income groups increased agreement to similar levels as their high income peers. After participating in the program, 79%, 86% and 89%, 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 38% and 32%, respectively) compared to students from higher income groups (net change of 20%).

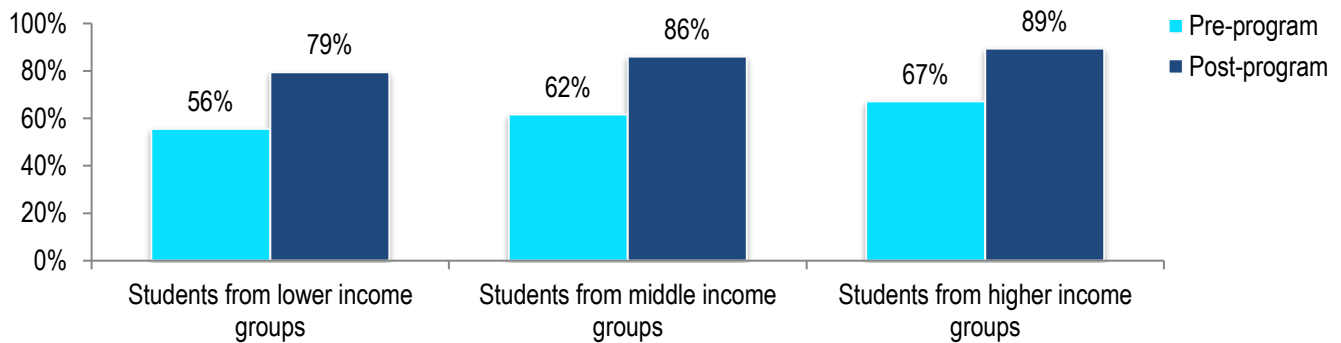
Overall, most students, regardless of economic status, reported that they would share their knowledge about protecting the environment with their friends and family, were more confident in their knowledge of where storm drains led, and reported that they would behave in ways to protect the environment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



**Figure 15: Percentage of Students Who Agreed with Survey Questions, Pre- and Post-Program, by Income Level, 2018-19**



Source: Student Surveys (2018-19. Lower income students: N=3,442, Middle income students: N= 1,493, Higher income students: N=813.)  
 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 (2018-19: Lower income students: N=3,442. Middle income students: N= 1,493, Higher income students: N=813.)  
 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 2018-2019 program cycle 209 groups participated in the O'Neill Sea Odyssey (OSO) program, representing 5,539 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 (95%), and the majority of groups (95%) were comprised of students in the 4<sup>th</sup> through 6<sup>th</sup> grades. Nearly half (46%) of all students indicated it was their first time on a boat in the ocean.

It was estimated that over two-thirds (68%) of the students were Hispanic or Latino, 17% were White, and 15% were of other races/ethnicities. The percentage of English Learners (EL) was 45%, and 14% of students were Fluent-English-Proficient (FEP). When these two groups were combined, the results show that 59% of the participating students did not have English as their primary language.

Two thirds of students (67%) 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 59% of participating groups came from lower income communities. Please refer to page 10 for more information.



### Website and Teaching Materials

The majority (86%) 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 (93%) 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 (95% 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 59% 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 83% 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 56% and 67%). After participating in the program, students from all income groups demonstrated similar levels of improvement, agreeing between 79% and 89% 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

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

- 3 topics were well chosen, instructors were able to connect all the kids' observations.
- A little longer board ride/ocean watch/animal watch
- Adaptors & structure.
- All covered!
- Always lots of information
- Anything specific to the Monterey Bay. How have animal/plant populations shifted over time?
- Cannot think of anything else
- Climate change
- Conservation actions to take and why it's important
- Current topics are already covering so much and align with projects we work on at school.
- Curriculum is great
- Educational videos good for kids
- Expanding idea around watershed and what students can do.
- Food chain
- For trips that can't go on the water, maybe brainstorm session of practical ideas to prevent human impact on marine ecosystem.
- Global warming and how it is impacting marine life.
- Great experience!
- Great instructors; very kind, yet firm
- How exactly kids can get involved in recycling/ecology programs.
- I can't think of any
- I can't think of any topics that are better than what you have!
- I can't think of anything
- I don't have any additional topic ideas
- I like the way it is!
- I like the way it is.
- I love the use of all ecological connections.
- I think all the topics were great and the instructors gave clear, concise instructions.
- I think everything was covered was very helpful!
- I think it was all covered!
- I think it's perfect! 😊
- I think the information and amount of information is perfect.
- I think the topics are great. I wonder if climate change might become a theme you start to weave in more to all the stations?
- I think the whole program is excellent, well-planned, and engaging!
- I think this is a great experience for the students.
- I wish I would think of something - but your program is already very comprehensive!
- I would love a video explaining the parts of the boat to share with the kids the day before. Also, any educational videos to link the teacher packet to the experience
- I would love to learn more about sea turtles.
- I'll have to think about that...
- Information on future marine science studies.

- It was a very comprehensive study.
- It's great. Maybe include: "you can make a positive difference by..." when mentioning watersheds and habitats.
- Marine animals (fish/sea lions/ whales)
- MAYBE A LITTLE HISTORY OF SC HARBOR
- Maybe a prep video for kids who haven't been exposed to the ocean.
- Maybe a short talk about how to pursue a marine biologist/scientist degree or job - best colleges, companies
- Maybe beach science as we wait for our turn.
- Maybe connecting with jobs so kids can sculpt goals toward an environmentally focused profession.
- Maybe more specifics about what can and can't be recycled.
- Maybe responsive tourism. How to behave and respect the culture of the community we visit.
- Maybe something more on respecting sea animals and their environment. Respect means trash containment - what we do in the valley affect the animals in the Monterey Bay.
- More discussion about plastic problem.
- More explicit student utilization of scientific observations with all senses.
- More NGSS linked classroom materials.
- More time in the classroom would allow for more questions, which would be great.
- no additional topics
- No. This is a wonderful learning experience that really makes the kids expand their wondering and growing their curiosity about the environment and the impact we all have on the ocean.
- None - well covered
- None every thing was very informative.
- None that I can think of at this time.
- None, it was a great trip
- Nothing - so extensive and awesome
- Nothing it was well done
- nothing, this was the best by far field trip!
- opportunities to help save ocean life/stewardship
- Our present was so great, I can't think if how to make it better
- Perhaps a brief talk on science/marine science careers. Have OSO teachers share how they come to work on the OSO - This inspires young students!
- Perhaps include the Trash Gyres into the Ecology tales - water temp & climate change.
- Perhaps some mention of Climate Change
- Plastic trash islands (gyres)
- Sea Odyssey is a perfect learning experience, with wonderful teachers.
- some visuals for safety rules (what life vest looks like properly fitted, hand on rail)
- Somehow I'd like to see more about whales and whale watching.
- Students want to know more about Plankton!
- sustainable fishing
- The curriculum is already very dense!
- The field trip is outstanding as it is.
- the topics are great!
- There isn't time - this is wonderful
- This was amazing! All important areas were covered!
- This was very thorough! we loved the experience.
- Watershed - trash from street into drains into ocean
- We are learning about producers and consumers in ecosystems, maybe include the terms in the lessons
- We saw on one of the videos that some classes get to raise the sail. That would be great to do.
- We spent time on ecosystems of the kelp forest and the web. If we could spend more time on that and vocal + give students a turn + talk time or repeat after me - I needed to explain plankton a bit more.
- weather?
- You already cover so much!
- you covered everything
- You guys are amazing!
- You guys have it down!



- You include so many materials and learning already.
- Your program is excellent

### Do you have any additional comments?

- A fantastic trip the students were excited and engaged. Thank you so much.
- A vocal chart with a definition of ecology for the boat could be helpful for all the ELLs. Thank you so much for including us in this amazing learning experience.
- All the students were engaged! Very informative sessions.
- Always a good time! Thanks!
- Always an amazing learning experience! We are so lucky to have been able to do this! That connection to plastic and our effect in using plastic was powerful.
- always great <3
- Always wonderful! Thank you!
- Amazing trip! the staff were so kind and understanding, very inclusive of all students, and engaging! Thank you!!
- Amazing. Thank you!
- An amazing experience for all children and adults.
- Another amazing experience. Thank you :)
- Awesome as always. Thank you!
- Big fan of experiential hands-on learning. I love what you do.
- ESC or kids with auditory issues struggle without visual to go with talk. A few visuals (like ecology) help a lot.
- Everything was great as usual. We love this field trip. Thanks a lot :)
- Excellent curriculum and passionate instructors.
- Excellent experience for the kids. You put on an amazing program. Thank you so much!
- Excellent!
- Fabulous trip! Thank you!
- Fantastic and friendly staff. So knowledgeable!
- Fantastic trip! Loved both the classroom and boat sections of this trip!
- Focus on pollution and why saving the habitat is so important.
- Great experience! My students had a great time and learned a lot!
- Great experience. Thank you!
- Great field trip!
- Great learning experience!
- Great trip. Thx
- I love this field trip. Even though this group has mostly been before, they still learned a lot. Thank you!
- I think it would be better if you had one class in the learning center and the on the boat. 3 hours on the beach is really long.
- It was a great experience for my students. Thank you!
- It was an awesome experience!
- Just a HUGE Thank You!
- Kids LOVED this experience. Thank you O'Neill Sea Odyssey Staff!
- Laura gave a fantastic "call to action" lecture that was inspiring to students.
- Love that you provide this experience for students.
- love the energy
- Love this field trip - so important!
- LOVE THIS!
- Loved the entire experience. Thanks!
- Loved this experience for the students and for myself. Than you Laura, Lauren, and Joey!
- My students have learned so much - I cant wait to hear how they process this incredible experience. Thank you!!!

- My students I know really enjoyed this trip. They learned a lot and what they knew already was reinforced. The staff was amazing and so helpful.
- no - it was a lovely time!
- Not sure I'm the quest teacher. I will give to the teacher
- OSO covers so much in three hours (navigation, ecology, marine bio) that there's probably not much time for additional topics. What you cover is excellent. We watched the YouTube videos of the three lessons - they really helped students to visualize our OSO trip.
- Perhaps have more visuals to show in classroom about what was learnt on boat.
- Some of the math was a bit advanced, but it was a terrific experience. Thanks for a great field trip!
- Thank you ! The students will carry this experience with them through their entire school lives. The whales were amazing today! Wow!
- Thank you again for consistently spearheading our community's compassion and awareness for how we can conserve our marine ecosystem. This was the first year I'd seen the online "learner" center. What a great way to frontload vocabulary and concepts for our students. +Thank you for supporting the unexpected squad of seasick sailors! ^Too bad they didn't have a chance to "heave" and "ho". ^I think 3 groups is more fluid.
- Thank you again for such an organized educational and engaging experience. As their teacher I really appreciate your hard work/preparation and am grateful for their enjoyment!
- Thank you all!
- Thank you always for everything!
- Thank you for a great experience!
- Thank you for an awesome experience. My students were in awe!
- Thank you for everything!
- Thank you for having us! As always, very relevant and able to make learning relevant to students. e.g. instead of only saying 50% of air from ocean, saying imagine 1 of 2 breaths to make the understanding more concrete
- Thank you for helping our environmental literacy.
- Thank you for providing such a spectacular, electrifying and fantastic experience for Ms. Woodhouses/s class. They are building their knowledge and ecological agency. (heart)Ms. W.
- Thank you for such a wonderful experience! One student said on the boat, "This is the best trip ever!"
- Thank you for this experience. This was great!
- Thank you for this program! My school is from San Jose and for several of my students were her in S.C. for the first time. :)
- Thank you for your awesome program
- Thank you for your patience today.
- Thank you so much for providing such an interactive learning opportunity.
- Thank you so much for the wonderful experience.
- Thank you so much!
- Thank you so much!
- THANK YOU SO MUCH. I WILL BE TALKING TO THOSE 2 BOYS PARENTS. I APPRECIATE YOUR PATIENCE. I AM SAD THAT IS HOW THEY ACTED BECAUSE THEY CAN BE GREAT KIDS!
- Thank you so so much! We learned a lot!
- Thank you to the O'Neill team for this amazing field trip!
- Thank You!
- Thank you!
- Thank you!
- Thank you!
- Thank you!
- thank you!
- thank you!
- thank you!

- Thank you! :)
- Thank you! Best field trip EVER!
- Thank you! It was an amazing morning!
- Thank you! It was wonderful!
- thank you! outstanding experience!
- Thank you! The overwhelming majority of our students had never been on the ocean. This experience was an invaluable learning experience :)
- Thank you! The students were engaged. I saw kids smiling (the ones that are usually stone faced) & talking & having fun
- Thank you! You rock :) Happy 20th Laura and Sarah :)
- thank you!!
- thank you, thank you, thank you and sorry for the unruly ones. I hesitated a second with this group but knew they would learn a lot and be engaged most of the time. I did have repeat kids and they still got a ton out of it. I look forward to this trip every year in conjunction with our ecology unit - fits perfect!
- Thank you, thank you, thank you!
- Thank you, we feel lucky to come on the field-trip on The O'Neill Sea Odyssey!
- Thank you/Mahalo! We appreciate all you did!
- Thanks again for an awesome experience!
- Thanks again! It was awesome!
- Thanks for a wonderful trip; it is always my students favorite trip of the year!
- Thanks for adapting to the weather conditions!
- Thanks for the opportunity to come here. You always make our year :)
- Thanks for this great experience!
- THANKS.
- The experience was wonderful! Thank you!
- The kids had a great time! Thanks
- The students gain lasting knowledge. Thank you!
- This has been a wonderful experience. Very impressive expertise and class management.
- This is a great experience for our students. It is a well-balanced program and there is a great connection between the boat and the classroom stations.
- This is a great experience led by fantastic teachers! Thank you for your time!
- This is a wonderful trip and the experiences provided are priceless.
- This is such a worthwhile experience for my students. I especially appreciate the emphasis on environmental community and interdependence. Thanks!
- This program changes lives. It changed mine.
- This trip is amazing - best field trip ever!
- This trip was amazing. The kids were excited and engaged the while time. All the information was at a level that the kids could understand. Thank you for the amazing trip.
- This was a very educational experience. Teachers were very organized and patient with students
- This was an interesting, engaging experience for all students. There are many aspects of marine biology navigation and ecology that I will continue teaching in the classroom.
- This was great, positive staff that expanded our knowledge
- This was my first time on this trip - was amazing! thank you! Already applied again next year :)
- This was our first trip to the OSO. We all enjoyed it. Very informative and well organized.
- This was such a wonderful experience for our kids. We are from East San Jose & these students don't get to experience things like this. Thank you so much! Kids seemed to have so much fun.
- This was the best "classroom" we've been in ever! What a great way to get kids into science.
- This was truly amazing experience that I feel my students will cherish for many years! The staff and topics were excellent! I can't wait to take all of this info back to the classroom!

- Very amazing teachers, very informing field trip
- Very impressed! Thank you so much!
- Very nicely designed program
- We had a fabulous time!
- We had an awesome time. Great experience for the kids.
- We LOVE Sea Odyssey! Thank you for such an amazing experience!
- We love this program! Thank you for sharing your love and knowledge of the ocean!
- We really appreciate you and all you do!
- When talking to kids about life jackets, only give examples of behavior you expect! Avoid the what NOT to do.
- When using vocabulary like keystone organism, remember to also explain the definition each time it is used. (It's new especially at the beginning of the school year.
- WONDERFUL DAY
- Wonderful experience as usual.
- Wonderful Staff! Wonderful Experience! Thank You!!
- wonderful, as always! Thank you so much for this singularly unique and outstanding educational opportunity!
- You are inspirational as always!!! Thank you so much!
- You do a fantastic job in all respects of this trip. Thank you for sharing the info and passion!
- You guys always do such a wonderful job with the kiddos! Thank you so very much! Mrs. Powers & Room 15
- You guys are amazing, thank you :)
- You guys rock! Thank you :)
- You have such a wonderful, well-rounded program. Thank you for this opportunity.



# 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
<b>On the boat:</b>			
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"/>
<b>In the classroom:</b>			
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?

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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 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	

## Appendix III: Data Clarification

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There is a possibility, beginning in 2018-19, that the statistic is artificially low due to the implementation of a new meals program at district level called the Community Eligibility Provision (CEP). The CEP is a federal program that provides free meals for students at schools, but it does not work the same way as the FRMP. The FRMP numbers are based on a form that is filled out by parents when the student is enrolled that asks about their income level. The CEP is implemented based on an audit of the community surrounding the school and a measure of how many people in the area use assistance programs like SNAP and welfare and other forms of assistance. Due to the implementation of the CEP, many low income schools are no longer keeping accurate FRMP data, since the program is being phased out slowly. The O'Neill Sea Odyssey has done over a year's worth of research into this issue and have spoken to statisticians at the California Department of Education for confirmation. Based on this research, there is the possibility that FRMP data is inaccurate and that the percentage of low income students in the program is actually higher than displayed.

## 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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