

## **Sailing to Save the Sea (SSS) Overview**

Based on the success of our one-day sailing and STEM program, Set Sail Learn, as demonstrated by very high demand for the program as well as through evaluations and testimonials, TISC has developed a more in-depth program, Sailing to Save the Sea (SSS). Through in-depth and hands-on exploration of San Francisco Bay watershed pollution issues, SSS aims to improve students' understanding of their local watershed and risks that affect it, while also encouraging stewardship actions and environmental awareness, and cultivating an interest in sailing.

SSS is a five-day program whereby days one, two and three are spent onsite at TISC's Treasure Island facility and days four and five are situated within students' school classrooms. Onsite visits will be facilitated by a TISC educator and will be split between time classroom and on the water which is supervised and handled by TISCs' sailing instructors.

### **LESSON ONE: WELCOME TO YOUR WATERSHED**

#### **Classroom Component**

Subject Areas: Watershed, Pollutants, Streamflow, Glacier melt, Water supply, Season changes, Teamwork

#### **SUMMARY:**

Students use maps to characterize what a watershed is and how it is connected from its headwaters to San Francisco Bay. Students kinesthetically represent water flow throughout the four seasons while identifying pollutants in their watershed.

Setting: TISC Classroom Facility

#### **On-the-water Component**

Subject Areas: Tides, currents, gravitation

#### **SUMMARY:**

In this lesson, students will begin their introduction to the on-the-water components of Sailing to Save the Sea. While learning sailing basics, students will also be introduced to forces playing upon their boats, namely tides and currents.

Setting: Clipper Cove

### **LESSON TWO: WATER QUALITY MONITORING**

#### **Classroom Component**

Subject Areas: Data collection, Water quality, Pollutants, Teamwork, Communication

#### **SUMMARY:**

Students act as scientists to hypothesize, collect and contribute data in discerning the quality of water in Clipper Cove. Students engage with their local watershed via the use of scientific instruments and personal exploration.

Setting: TISC Classroom Facility, TISC dock

#### **On-the-water Component**

Subject Areas: Ecology and wildlife identification

#### **SUMMARY:**

In this lesson, students will collect temperature data to contribute to larger class collection efforts. In addition, students will deepen their sailing familiarity while observing local waterways and the marine species that live within them.

Setting: Clipper Cove

### **LESSON THREE: *MARINE DEBRIS***

#### **Classroom Component**

Subject Areas: Gyre, Current(s), Marine Debris, Teamwork, Communication, Critical thinking

#### **SUMMARY:**

In this lesson, students observe and identify marine debris and the processes that perpetuate its accumulation. Students then compare the prevalence of plastics in their personal lives. Lesson concludes with an activity to encourage students to critically think about how to properly dispose of waste.

Setting: TISC Classroom Facility

#### **On-the-water Component**

Subject Areas: Marine debris, stewardship

#### **SUMMARY:**

In this lesson, students will learn about stewardship as a way to care for local environments and engage in a collective beach clean-up. Students will separate debris collected into like categories and contribute their findings to larger group data collection.

Setting: Clipper Cove

### **LESSON FOUR: *DATA ANALYSIS***

Subject Areas: Data analysis, Communication, Team work, Presentation, Citizen/community-based science, Community action

#### **SUMMARY:**

In this lesson, students are introduced to community-based science as a method of contributing to environmental issues and raising public awareness. Students will analyze previously gathered water quality data and draw conclusions about the overall health of their sampling site. In addition, students brainstorm solutions-based models to tackle the issue of marine debris.

Setting: SFUSD Classroom

### **LESSON FIVE: *COMMUNITY CALL TO ACTION***

Subject Areas: Stewardship, Communication, Teamwork, Responsibility, Engineering, Presentation

#### **SUMMARY:**

In this final lesson, students compile key takeaways from their Sailing to Save the Sea experience and identify how to become watershed stewards in their own communities. Lesson adjourns with student presentations of design concepts and community action plans.

Setting: SFUSD Classroom