

## Program Outline

- **Program Name:** *Ocean Science: Trash Free Seas*
- **Program Goal(s):** Gain a better understanding of marine debris sources and its impact on marine ecosystem health locally and throughout the Pacific. To compile and enter marine debris data into NOAA data base. To investigate local beach environments and collect sandy beach or tide pool data and entered into database.
- **Learner Outcomes:**
  - Define Marine Debris and its sources
  - Differentiate between natural items and Marine Debris
  - Collect, catalogue and remove Marine Debris from local beach
  - Complete a NOAA Marine Debris data collection datasheet
  - Identify the different zones of sandy beaches or tide pools
  - Complete a Surfrider Sandy Beach survey data book
  - Complete a presence/absence tide pool datasheet
- **Program Elements**
  - **# of facilitators:** 2
  - **Length of learning experience:** 4 hours
  - **Target Audience:** 5th Grade
  - **Program Capacity:** Up to 50 students per session with 1 chaperone per 5 students.
  - **Budget expense/revenue amounts:** See budget
  - Grant related considerations:
  - **Marketing needs** (i.e. recruitment strategies): Reaching out to 5th grade teachers along the north Pacific coast covering Cape Flattery, Quillayute Valley and Queets-Clearwater school districts
    - Marketing Blurb:
  - **PR Strategies:** Distribute a flier with each schools prior years field investigation and invite the next years class to participate.
- **Logistics Plan**
  - **Location:** Field investigation locations will vary but will be held at the beach nearest the school.
  - **Partners:** NOAA Olympic Coast National Marine Sanctuary, Nicole Harris 360.457.6622 Ext. 19
  - **Safety needs:** Standard First Aid kits for each facilitator as well as a roped rescue float
  - **Registration needs:** Book registration on ...Google calendar and complete classroom visit and field investigation forms in calendar binder.

- **Parking/Transportation needs:** Each teacher arranges their own bus transportation and sends and invoice to Feiro
- **Food provided:** None
- **Volunteers needs:** 1 adult chaperone per 5 students for beach field investigation
- **Facility needs:** None
- **Evaluation plan:** Student pre/post-tests and teacher satisfaction evaluation

#### **Program Agenda:**

- 1 hour classroom visit within one week prior to class' field investigation
- Field investigation-3 hour (preferably to be completed before noon)
  - Introduction (10 minutes)
  - Sandy beach or tide pool investigation (location dependent) \*
  - NOAA marine debris training and survey \*

\* investigation split into two sessions with time depending on distances needed to travel to reach location and time allotted per school

#### **Detailed Outline of Program**

- **Assessing prior knowledge:** A pretest will be given to each student to complete upon arrival to the classroom during the pre-trip visit. The three questions are: define marine debris and three potential sources; illustrate tidal zonation and name zones; and list three ways marine debris affect beaches and marine ecosystems.

**Classroom Visit:** A representative from FMLC or NOAA will visit each schools classroom prior to the class' field investigation. During the classroom visit the representative will assess the prior knowledge of the students as well as introduce key concepts of the program. The visit will cover topics like ocean currents, marine debris, tide pool zonation and sandy beach exploration. Classroom visit will be dependent on staffing availability.

#### **Field Investigation**

Prior to arrival have teachers split the students into groups of 5 students per chaperone. Upon arrival to the beach the facilitators will introduce themselves and the field investigation. Location and tide will determine the program order and activity. Each investigation will include marine debris and either sandy beach exploration or tide pool zonation components. Length of investigation will vary based on time allotted and distances needed to travel to reach location.

**Sandy Beach:** Surfrider *Beachology* is used to understand sandy beach composition and habitat zones. Split class within groups into three. Have each

begin their investigation in either the low/mid/high tide zone. Explore and collect data regarding the sand community within each zone. Split allotted time in three and rotate so each group covers each zone and completes the workbook.

**Tide Pool:** Another review of zonation and the characteristics of the organisms that live within will be provided. Presence/Absence data sheets will be distributed and gone over and completed. Students will be given an allotted time to investigate the tidal environment filling out the data sheet as a group. Have students switch roles so each has a chance to record data on data sheet. NOAA tide pool common critter guide will be distributed as an aid.

**Marine Debris:** After reintroducing the definition of marine debris and its sources, go over NOAA marine debris collection protocol and data sheets. Distribute garbage bags within each group. Have each group stay together and collect marine debris as they walk the beach back. One student records the data while the remainder collect debris. Have students switch roles so each has a chance to record data on data sheet.

**Extension Activities:** Encourage classrooms to adopt a local beach and collect marine debris and enter data into NOAA marine debris database. Encourage students and their families to participate in local beach and community clean-up events.