Field Trip

SEYMOUR MARINE DISCOVERY CENTER
AT LONG MARINE LABORATORY
INSTITUTE OF MARINE SCIENCES
UNIVERSITY OF CALIFORNIA, SANTA CRUZ

This week, you get to experience biology in a different setting, at the Seymour Marine Discovery Center at UC Santa Cruz! This center is the public face of the Long Marine Laboratory, an active marine research facility. It is not merely an aquarium, but a place where you can learn about how marine scientists think about and carryout their research. Visit www2.ucsc.edu/seymourcenter/ for more information.

There are two parts to your field trip: a 90-minute guided tour, and your self-guided visit of the displays and facilities. Tour times are fixed, but you may explore on your own before and after the tour. We will meet on the day of your lab at the times shown below. Here are the schedules for each lab session:

> **Morning Lab Section**: arrive at 10:15 am, **Tour time is 10:45 am**. Visit facilities until 12:30 pm
>
> **Afternoon Lab Section**: arrive at 1:00 pm, **Tour time is 1:30 pm**. Visit facilities until 3:30 pm

Directions:

> From Santa Cruz, take Highway One, (Mission Street), north. Turn left on Swift Street. Turn right on Delaware Avenue. Follow Delaware to the Long Marine Lab entrance at the end of the road. Drive until you see the whale skeleton and park in one of the lots (click on visitor info button on the website for a map).

What to bring:

1. A printout of your lab report questions.
2. Some paper to take notes on and to sketch on.
3. **$4.00** for the entry fee (the Biology Department will cover the tour cost)
4. Good walking shoes.
5. Part of the tour will be outdoors, so dress appropriately for that day. Keep in mind that it may be much windier on the coast than in town.

Field Lab Report – due the next lab meeting. There is no Pre-Lab this week.

Tour Questions:

1. Describe how and what blue whales eat.
2. Briefly describe the breeding cycle of elephant seals.
3. Why are marine mammals, such as dolphins and seals, kept at Long Marine Lab?
4. Describe an interesting fact about the ecology of the Monterey Bay.

Displays Questions:

5. What defense mechanism do the following organisms use?
    a. Sand Dabs
    b. Fat Innkeeper Worm
    c. Skates
    d. Decorator Crab
6. What is marine "snow" and why is it important to the ocean?
7. Describe the TOPP research program.
8. Describe the research on metal pollution and its impact of on ocean life.
9. Feel the starfish and sea cucumbers in the touch tanks. Describe how they feel. Why do they feel the way they do (i.e. how is their texture/structure adaptive?)?
10. Measure the speeds (in inches/minute) of starfish and abalone in the gridded tanks. Based on your results, which one is faster? If the animals are not moving, look up their speeds online.
11. (4 pts) Sketch one example of each of the following phyla. Label your sketches with at least 5 parts. For each organism, briefly explain how one part is adaptive.
    a. Echinoderm
    b. Cnidarian
    c. Mollusk
    d. Arthropod