



## Live Dive: Sixth Grade Lesson Plan

**Overview** Students explore the kelp forest with a park ranger-diver through an interactive distance learning program. As kelp forest inhabitants are encountered, students identify their roles as producers or consumers. Food chains are constructed and the transfer of energy is discussed. Affects of human activities on kelp forests are also explored.

**Grade level** Sixth grade

### Objectives addressed

- Give examples of the functions (producer, consumer, and decomposer) organisms serve in the kelp forest.
- Identify humans as consumers within the kelp forest.
- Describe the effects of human practices on the transfer of matter through natural systems, such as kelp forests.

### Essential questions

How does change in an ecosystem affect the entire ecosystem?  
What affect do humans have on ecosystems?

**Subjects** Biology: animals, biology: plants, conservation, ecology, environment, marine biology, oceanography

**Duration** 30 minutes for Live Dive; variable amount of time for using accompanying materials

**Group size** Suggest not more than two classes for ideal viewing and interactivity

**Setting** Classroom or other suitable broadcast location

### National/state standards

NS 5–8, C/Life Sciences: Structure and function in living systems; F/Science in Personal and Social Perspectives: Populations, resources, and environments  
California/science—Grade 6.5.c

**Vocabulary** Producer, primary consumer, secondary consumer, third-level consumer, decomposer, ecosystem, energy pyramid, food chain, food web, biodiversity

**Background** Story 4 in the *From Shore to Sea* curriculum unit available online:  
[www.nps.gov/chis/forteachers/classrooms/from-shore-to-sea-curriculum.htm](http://www.nps.gov/chis/forteachers/classrooms/from-shore-to-sea-curriculum.htm)

**Materials** For How to Participate and the PDFs listed below:  
[www.nps.gov/chis/forteachers/learning/dive6.htm](http://www.nps.gov/chis/forteachers/learning/dive6.htm)

Live Dive data sheet (PDF)  
Pencils  
Pre-program activity (PDF)  
    Park brochures  
    Copies of activity sheet (PDF)  
    Copies of species ID key (PDF)

**Procedure** Follow steps in How to Participate to reserve a Live Dive for your students.  
Archived programs are also available: [www.nps.gov/chis/planyourvisit/archived-programs.htm](http://www.nps.gov/chis/planyourvisit/archived-programs.htm)

### **Before the Live Dive**

*From Shore to Sea*, Story 4 provides background information and activities about the kelp forest ecosystem. A short video clip on Story 4 focus question What is Kelp? is also available online: [www.nps.gov/chis/forteachers/classrooms/from-shore-to-sea-curriculum.htm](http://www.nps.gov/chis/forteachers/classrooms/from-shore-to-sea-curriculum.htm)

After introducing or reviewing the terms *producer*, *primary consumer*, *secondary consumer*, *third-level consumer*, and *decomposer* have students complete the pre-program activity. Before watching the Live Dive provide each student with a data sheet.

### **During the Live Dive**

The Live Dive lasts 20 to 30 minutes. If you are participating in an interactive Live Dive event, your students will be able to ask the diver questions. Students must speak loudly and clearly. In order to hear them, the diver needs to hold her/his breath, so questions need to be asked quickly. If the ranger cannot hear a student's question, please be ready to repeat the name of the student and the question. The ranger will also ask questions of the students. Many times they can answer loudly in unison.

If you are watching an archived program, you can pause the broadcast when the diver asks a question, allowing your students to answer before hearing the response of the recorded audience.

Students can use Live Dive data sheet throughout the program to record the species they observe. During Live Dive programs for students, a park researcher will be shown recording observations on the same data sheet being used by the students.

### **After the Live Dive**

Exercise 6.2 (Marine Reserves—Where Do You Fit In?) in *From Shore to Sea*, Story 6 is an excellent follow-up to the Live Dive. This digital lab is accessible online: [www.nps.gov/chis/forteachers/classrooms/from-shore-to-sea-curriculum.htm](http://www.nps.gov/chis/forteachers/classrooms/from-shore-to-sea-curriculum.htm)

### **Additional resources**

6.5.c *Energy—Pass It On!*, California Education and the Environment Initiative (EEI): [www.californiaeei.org/Curriculum/](http://www.californiaeei.org/Curriculum/)

For California schools in Ventura and southern Santa Barbara counties, contact the park about ranger-led programs in your classroom: [www.nps.gov/chis/forteachers/classrooms/guestspeakers.htm](http://www.nps.gov/chis/forteachers/classrooms/guestspeakers.htm)

Programs for classes and other organized groups are also available at the park visitor center. Floating Classroom programs to the islands are available through Island Packers, a boat concessioner. [www.nps.gov/chis/forteachers/classrooms/fieldtrips.htm](http://www.nps.gov/chis/forteachers/classrooms/fieldtrips.htm)

The visitor center bookstore carries many excellent educational materials relating to the park. Educators receive a 20 percent discount upon request.