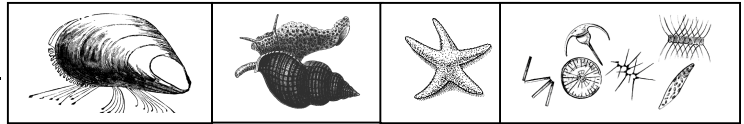


Ecology – Interactions, Energy, Nutrients, and Change in the Intertidal Community

Ecologist: _____

Date: _____ Period: _____

Activity 1 - Constructing a Food Web



Objectives:

1. Students will be able to define the terms: ecology, biodiversity, producer, consumers, decomposer, detritivore.
2. Students will be able to define and give examples of biotic and abiotic features of an ecosystem, and distinguish between the two.
3. Students will be able to identify producers, consumers, decomposers, and detritivores in the tide pool ecosystem and explain their importance.
4. Students will be able to organize the organisms found in the tide pools into a food web.

1. Define the following terms:

Ecology – _____

Biodiversity – _____

“**Biotic**” means _____. An example of a biotic feature on an ecosystem is _____.

“**Abiotic**” means _____. An example of an abiotic feature on an ecosystem is _____.

WORD BANK

mussels	sand	sea stars	whelks	rocks
water	anemones	octopuses	sunlight	sea urchins
phytoplankton	kelp	dissolved oxygen	temperature	barnacles
zooplankton	pH	crabs	turbidity(water clarity)	bacteria

2. Correctly categorize each of the terms above by writing them in one of the columns below.

Abiotic	Biotic

Use the following sentences to share with a partner how you decided to categorize terms in the word bank. Read the sentence and fill in the blanks with an appropriate term as you read.

Example:

“ **Mussels** are a biotic feature of the tide pool ecosystem.”

“ **pH** is an abiotic feature of the tide pool ecosystem.”

_____ is/are an **abiotic** feature of the tide pool ecosystem.

_____ is/are an **biotic** feature of the tide pool ecosystem.



3. Match the bolded terms below to the correct definition:

- | | |
|--------------------------|----------------------------------------------------------------------------------------------------------|
| _____ producer | a. organism that feeds on plant and animal remains and other dead matter. |
| _____ consumer | b. organism that uses the sun's energy to produce food from inorganic compounds; also called autotrophs. |
| _____ decomposer | c. organism that breaks down and obtains energy from dead organic matter. |
| _____ detritivore | d. organism that relies on other organisms for its energy and food supply; also called a heterotroph. |

4. In the word bank above, write a "P" next to a producer, a "C" next to a consumer, a "DCP" next to a decomposer, and "DE" next to a detritivore.

Constructing a food web

5. A food web is a network of complex interactions formed by the feeding relationships among the various organisms in an ecosystem. **With a partner, use the pictures of organisms found in tide pools to construct a food web.** Use the popsicle sticks to serve as the links in the food web. If you are unsure how an organism fits into the food web, look on the back of each picture to find out more about the organism.

After creating your food web, remove the phytoplankton. Examine the food web and determine what organisms will be affected and how as a result of this alteration of the ecosystem.

Now, each partner should remove an organism and explain how that alteration of the food web impacts the ecosystem using the space provided below.

6. Explain the importance of producers in an ecosystem.

7. Predict what would happen in your food web if an environmental toxin or contaminate caused a large number of the algae to die off in an ecosystem.

8. Suppose that Sea Stars have become a delicacy at many sea food restaurants and the emerging demand for the creature has not yet been regulated or limited by the U.S. Fish and Wildlife Service. Predict two possible outcomes in tide pool ecosystems that could result from people removing too many Sea Stars.

Outcome 1: _____

Outcome 2: _____

