

## Objectives

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- ▶ work in teams to create an ocean food chain
- ▶ create a food chain and food web display

## Vocabulary

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photosynthesis  
producer

herbivore  
carnivore

scavenger

## Background

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In the sea as on land, plants capture and store the energy of the sun through the process of photosynthesis. Seaweeds, turtle grass and tiny floating plants, called phytoplankton, are the food producers on the reef. Herbivores, like sea urchins and sea turtles, are animals that eat the plants. Sharks, dolphins and barracuda are carnivores, animals that eat the herbivores and other carnivores. Scavengers, like spiny lobsters, are garbage collectors. They eat the leftovers and clean up when other organisms die.

Scientists study the hunters and the hunted and develop food chains to show who eats whom. Connections between food chains make a food web.

## Materials

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drawing paper and crayons  
photographs of reef animals

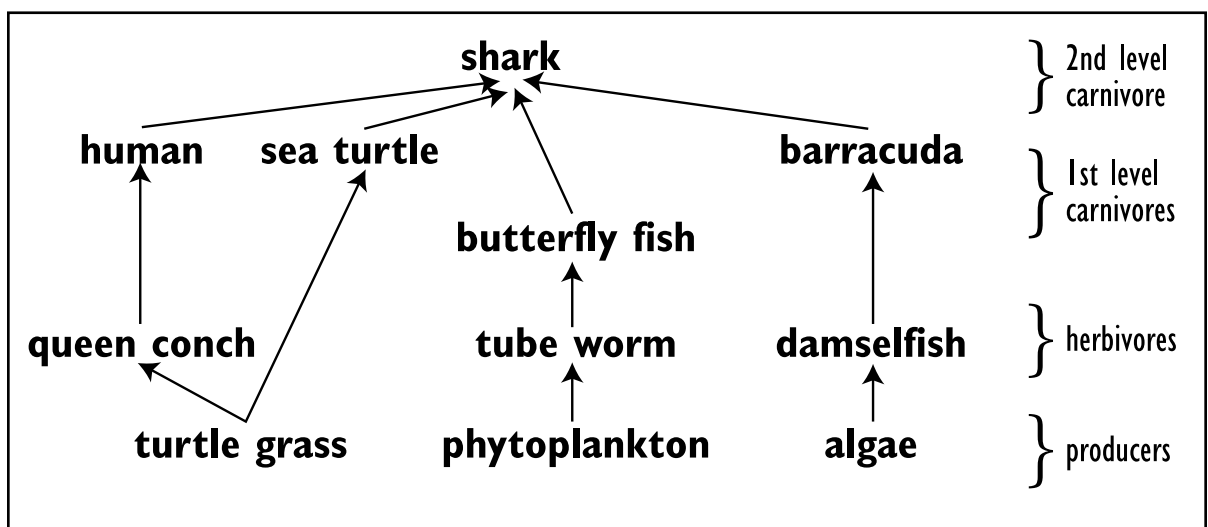
balls of colored yarn  
reference books

## Activity

Part I: As a class, discuss the various levels in a food chain from producer to top level predator. The food web below gives examples of several food chains that the SFS students at the South Caicos research site may observe on the reef. Now divide students into food chain research teams and complete the following steps:

1. Give each team the name of a producer and a second level carnivore. Have each team answer the following: What animals would eat this producer? What animals would this carnivore eat? Have each team research two food chains, one for the producer and one for the carnivore.
2. Ask each team to illustrate its food chains. For example:  
sea lettuce (producer) → sea urchin (herbivore) → angelfish (carnivore) → shark (carnivore)
3. Have students draw or find photographs to illustrate each link in the chains.
4. Create a bulletin board display as follows: (a) Put all of the producers along the bottom, the predators at the top, and the herbivores in the middle of the board. If the same animal or plant is used more than once, group the illustrations together at a single food "station." (b) Using different colors of yarn, have each team connect the plants and animals in its chains. (c) As students work, discuss any food webs that appear. Can students identify other possible connections?

Example of Reef Food Web



## Extend the Activity

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Have students stand in a circle or several small circles. Give each student an identification badge with the name and/or picture of a reef plant or animal. Have students identify the producers, herbivores and carnivores in each circle. To start the game, give one of the producers a ball of string and ask them to hold onto the loose end. Then ask an herbivore to walk across the circle, take the ball of string from the producer and slowly unwind it as he/she returns to his/her place in the circle. Next a carnivore should take the ball from the herbivore and so on. When the first food chain is complete, give a different colored ball of yarn to the next producer in the circle and repeat the steps to create a second food chain. Hint: Be sure to have an herbivore for every producer in the circle, and include both small and large carnivores

Research and display food webs for other ocean environments: the salt marsh, a tide pool, the polar seas (remember, polar bears don't eat penguins—one lives at the north pole, the other at the south).

Humans are at the top of the food chain. Keep a journal of what you eat for one day. Draw some food chains or food webs with you at the top.