

Ecology: Food Webs



Key Words

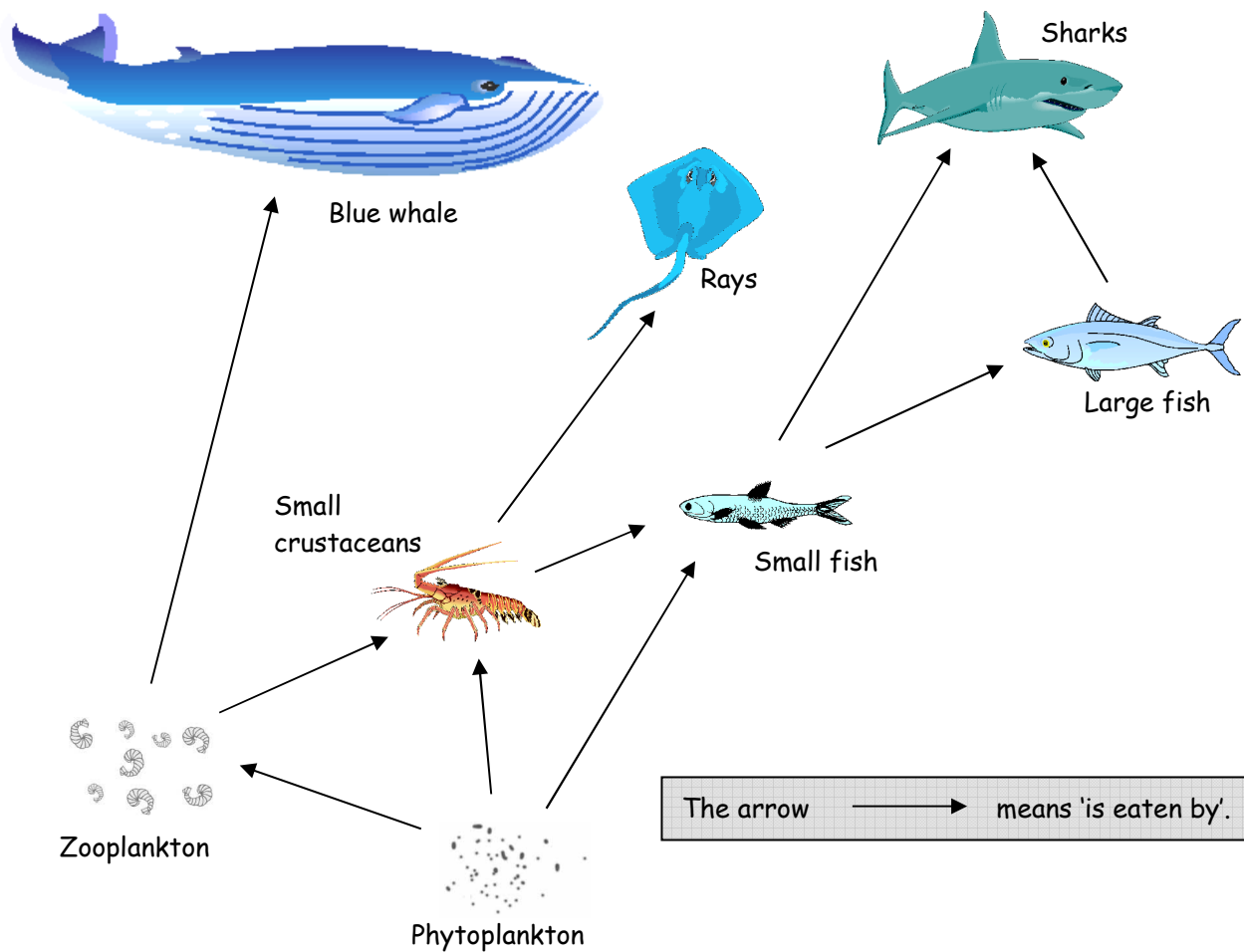
producer
biomass

predator
herbivore

prey
carnivore

consumer
omnivore

The picture below shows a marine food web.



1. How is a food web different from a food chain?

2. Name the producer in the food web.



3. Which animals can be classified as both a 1st order consumer and a 2nd order consumer?
Explain your answers.

4. Explain what would happen in the food web if over-fishing removed most of the small crustaceans.

5. Name one predator in the food web and state its prey.

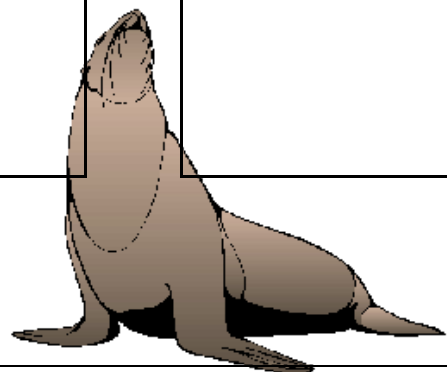
6. For this food web to exist, which organism must be present in the greatest amount?
Explain your answer.

7. Complete the table below using the organisms from the food web.

Herbivore

Carnivore

Omnivore



Ecology: Food Webs Answers



1. How is a food web different from a food chain?
A food chain is a single path showing a single organism that is eaten by each animal. A food web shows many eating relationships between all species of an ecosystem.
2. Name the producer in the food web.
Phytoplankton
3. Which animals can be classified as both a 1st order consumer and a 2nd order consumer? Explain your answers.
Small Crustaceans: 1st order consumer when they eat the phytoplankton and 2nd order consumer when they eat the zooplankton.
Small fish: 1st order consumer when they eat the phytoplankton and 2nd order consumer when they eat the zooplankton.
4. Explain what would happen in the food web if over fishing removed most of the small crustaceans.
Food webs are very sensitive to disturbances that often ripple throughout the rest of the feeding relationships. Rays would be drastically affected since small crustaceans are their sole source of food, hence their numbers would decline significantly (maybe to the point of near extinction). Numbers of zooplankton would increase due to less predation from crustaceans. Small fish would have more to eat resulting in an increase in their numbers. Similar effects would also occur with the blue whales (in terms of an increased food supply).
5. Name one predator in the food web and state its prey.
Many answers possible. One could be predator: shark and prey: small and large fish.
6. For this food web to exist, which organism must be present in the greatest amount? Explain your answer.
Phytoplankton, as a producer, is vital to this food web. Phytoplankton introduces energy into the web through the process of photosynthesis. The phytoplankton's mass (known as biomass) is the source of energy for all living processes taking place in other organisms. Without the energy obtained from the phytoplankton (directly or indirectly), the other organisms would not be able to obtain the energy needed to survive.
7. Complete the table below using the organisms from the food web.

Herbivore
<i>Small fish</i> <i>Zooplankton</i> <i>Small crustaceans</i>

Carnivore
<i>Blue whale</i> <i>Large fish</i> <i>Rays</i> <i>Sharks</i>

Omnivore
<i>Small crustaceans</i> <i>Small fish</i>