

Explore: Food Web

PROCESS AND PROCEDURES

1. Create a food web for otters, urchins, sea lions, salmon, orcas, and kelp.
2. Correct your food web based on your reading. (Add other animals as needed.)

ANALYSIS

1. What would have the biggest impact on your food web if it died out: otters, urchins, sea lions, orcas, or sea kelp? Explain your answer.
2. How many sea otters does it take to equal the weight of a sea lion?
3. If you were a killer whale, what would you rather eat: a sea lion or a sea otter? Explain why.
4. What limits the increase in the populations of killer whales?
5. a. What change would result in an increase in the population of sea lions?
b. Describe a different change that could also result in an increase in the population of sea lions.
6. Describe a change in the population of sea urchins that may increase or decrease the population of orcas. Explain **how** the change in sea urchin population impacts the population of orcas. (Hint: a change may be a change in the environment, predator, or prey).
7. Describe a change in the population of orcas that may increase or decrease the population of salmon. Explain **how** the change in the population of salmon may then impact the population of orcas.

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| <p>Northern Sea Otters Sea otters can grow to 5 feet in length and weigh up to 70 pounds. Otters will only nurse their babies and eat in water. They can also fall asleep on the water. Otters have thick fur, which repels water and helps to keep them warm. Otters can hold their breath for up to four minutes while diving for food. Sea otters eat clams (their favorite), crabs, sea urchin, fish and even octopus.</p> | | <p>Sea Lions: Sea lions have a layer of fur and another layer of fat that keeps them warm in cool waters. The average males sea lion weighs 1,995 lbs and grows up to 9.6 feet. The average female weighs 598 lbs and grows up to 6.72 feet in length. Sea Lions are carnivores. Their diet consists of mostly of fish, but they will eat squid and octopus too. The sea lion has whiskers which help them to navigate and feel the movement of fish.</p> |
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| <p>Orca Whales: The average male orca grows to 23 feet long and weighs 7 to 10 tons. Females average 21 feet long and weigh 4 to 6 tons. Orcas live 30 to 50 years in the wild. Orcas use echolocation - bouncing sound off of objects to determine their location - to hunt and use a series of high-pitched clicks to stun prey. Orcas near Alaska feed mainly on sea lions and but will also feed on other smaller animals such as birds, otters, fish and squid.</p> | | <p>Sea Urchins: Sea urchins are typically very small ball looking creatures. Most species are only around 4 inches in diameter. Sea urchins have porcupine-like spines, which protect them from predators. The spines are not known to be poisonous, but are still very sharp and can inflict pain. Sea urchins move very slowly using small tubed feet underneath their body. Sea urchins cannot swim, and can only move across solid surfaces.</p> |
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| | | <p>Sea urchins have a toothed mouth in the center of the underside of their main body. To eat, they crawl over a food item and tear away at it using this mouth. Urchins eat practically anything, from algae stuck to rocks, to kelp, and even the carcasses of fish or other marine organisms. Few animals will eat the little creatures given the chance. Sea otters tend to capture the urchins and break off their spines, then eat them, while other animals like moray or wolf eels will tear at the creatures' spines until the urchin is safe enough to eat.</p> |