

Section 12.5: Interactions between Individuals

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1. Coevolution occurs when species are interacting in close ecological fashion. Predators and prey exert continual selection pressure on each other. Coevolution leads to continued survival of both the predator and the prey. One example of coevolution is between fruit-bearing plants and the birds that eat the fruit of these plants. They have coevolved so that the plants and birds have certain characteristics induced by changes in the other. For example, many plants have evolved to have fruits that have large seeds with a thin layer of nutritious flesh on top. The bird is thus forced to swallow the fruit whole and this helps the seeds stay whole as it goes through the bird's digestive system. The bird, in response to this, has evolved to have a digestive system that can rapidly digest the nutritious flesh from the seed.

4. Black bears are omnivores. Most of a black bear's diet consists of plants. In the summer months, a bear eats grasses, herbs, sedges, fruits, berries, and nuts. It also eats insects. Black bears do not hunt for meat, but if they happen to come across carrion they will eat it. They have been known to kill and eat their cubs or other small animals when there is a food shortage, although this is unusual.

Grizzly bears are also omnivores. A grizzly bear eats berries, roots, fungi, grasses, fish, carrion, small mammals, and insects. Unlike the black bear, the grizzly bear is a hunter. It is very good at catching fish and it often uses its long claws to dig insects out of rotting logs and small mammals out of their burrows. Some grizzly bears in the Canadian Rockies hunt larger animals like moose, elk, and goats.

Polar bears are obligate carnivores. The primary food source for a polar bear is seals. It also eats fish, seabirds, and sometimes reindeer. In the summer, a polar bear may also eat berries and other plants but these are not large parts of its diet.

6. (a) Although all octopuses can change colour, and many can blend with the sea floor, the mimic octopus can mimic, or copy, the physical characteristics and behaviour of, other species.

(b) The mimic octopus copies the physical characteristics and movements of several different, species including sea snakes, lionfish, flatfish, brittle stars, giant crabs, sea shells, stingrays, flounders, jellyfish, sea anemones, and mantis shrimp. It does this by contorting its body and changing colour.