The Roles of Plants and Animals: Producers, Consumers, Predators, Prey

To understand how a plant or animal species survives in a biome and how it fits into the ecosystem, we have to understand some of the different roles played by plants and animals.

To begin with, plants are producers. These organisms live and grow by using non-living nutrients, along with water, carbon dioxide, and the sun, to produce food in a process known as photosynthesis.

The food produced by these plants is used by another group of living organisms that are called consumers. Consumers depend, in some way, on producers for their food source.

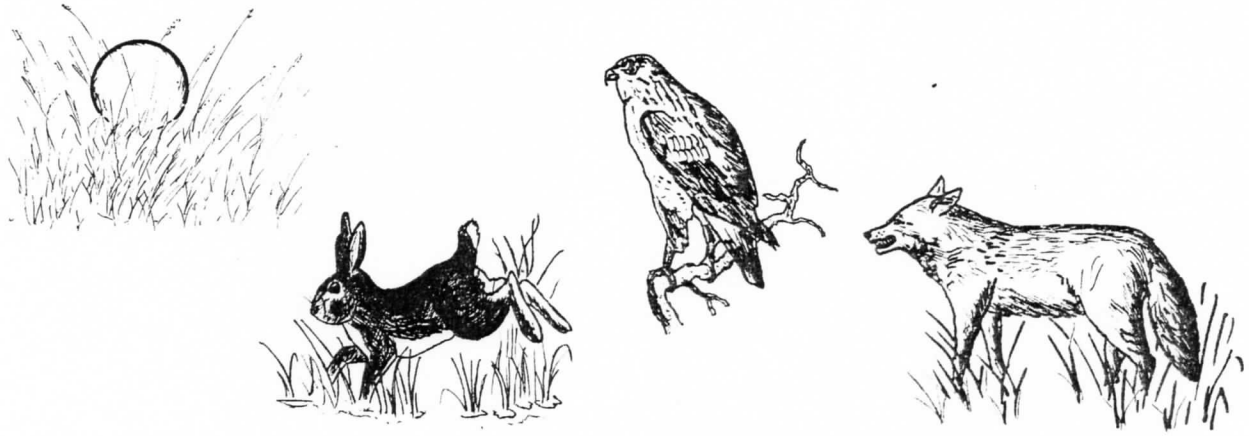
As the life of the consumer comes to an end, the consumer is reduced to nutrients by decomposition. The process is then able to begin again as plants once again use the nutrients, along with water, carbon dioxide, and the sun, to produce food by photosynthesis.

Let's look at the Cottontail Rabbit to illustrate this idea. This animal is a consumer, as it gets its food and energy from plant material such as grasses. Remember, the plants have produced their food by photosynthesis, using the sun as their source of energy. When the rabbit dies, microorganisms help in breaking down the rabbit's body. The ground becomes enriched with more nutrients from this decomposition, and it is able to grow better grass.

Let's suppose the Cottontail Rabbit is eaten by a hawk. This hawk is known as a predator because it uses other living organisms as its food. The rabbit becomes the hawk's prey because it is hunted for food. Remember, the hawk is also dependent on the producers—in this case the grasses—to provide food for the rabbit so that the rabbit may, in turn, become the hawk's food source.

If the hawk should die, it may be eaten by a coyote. The coyote would be known as a scavenger because it uses dead or rotting organisms as its food. Once again, the coyote is dependent on producers (still the grasses) to provide food for the rabbit, which then became food for the hawk, which died and became the coyote's food source.

The transfer of energy from one organism to another that we have just explored is known as a food chain. The transfer may occur several times as energy flows from the producer to the consumers in any food chain.



Energy is transferred through the food chain from the sun to the grass, from the grass to the rabbit, from the rabbit to the hawk, and from the hawk to the coyote.

Name _____ Date _____

For the student:

1. Write a definition for each of the following words:

producer _____

consumer _____

predator _____

prey _____

scavenger _____

2. Why is photosynthesis an important process for ALL living organisms?

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3. Why is decomposition an important process?

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4. Sometimes scavengers, such as Turkey Vultures, are known as "nature's cleanup squad." Explain this statement.

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5. Suppose you sit down to eat a hamburger for lunch. Explain the food chain responsible for bringing the meal to you.

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