

Name: \_\_\_\_\_

### What Do Predators Do In A Community?

A biologist noticed that there were many foxes in the woods behind the school. She knew that foxes were predators and she thought the foxes were eating too many rabbits. The biologist decided to catch some of the foxes and move them somewhere else. During the following summer, the biologist moved four foxes. She trapped and moved the same number of foxes each year for three more years. During that time, she noticed that the populations of owls and mice increased in size. She was surprised to find there were no more rabbits than before. What is happening to the balance in this community?

1. Which animals are predators?
2. Which animals are prey?
3. Which of the animals compete with each other for food?
4. How could removal of foxes be related to the increase of mice?
5. Why do you think the rabbit population did not increase, even though foxes were removed?
6. Do the results suggest that a predator can have more than one prey? Give an example.
7. Do the results suggest that a prey can be food for more than one predator?
8. Why do some people think predators are harmful and should be removed from an area?
9. Why do some people think predators have a helpful role in a community?

## ***How Can A Nonliving Factor Affect Animals In An Ecosystem***

As students walked past a meadow near the school, they heard crickets chirping. The crickets were noisier in the afternoon than in the morning and were chirping more quickly. What could be the cause?

In their biology class, the students learned that crickets are cold-blooded animals. They become more active as the temperature rises. Warm-blooded animals, such as humans, have the same body temperature all day long. Their cycles of activity are not so sensitive to temperature.

One student read that the temperature of the air can be estimated by measuring the activity of a cold-blooded animal and using a mathematical formula. The formula for crickets is: number of chirps per second divided by 2, plus 8, equals air temperature in degrees Celsius.

The students decided to test the formula by doing an experiment with cricket calls. Each student listened to a cricket and noted the air temperature with a thermometer at a certain time during the day. Students put their results into a table:

| <b>Calculated air temperature</b> |              |                 | <b>Measured air temperature °C</b> |
|-----------------------------------|--------------|-----------------|------------------------------------|
| Chirps per second                 | Divided by 2 | Plus 8 = result |                                    |
| 45                                | 22.5         | 30.5            | 30                                 |
| 30                                | 15           | 23              | 25                                 |
| 43                                | 21.5         | 29.5            | 31                                 |
| 38                                | 19           | 27              | 26                                 |

1. What is a cold-blooded animal?
2. What nonliving part of the ecosystem affected the chirping activity of the crickets?
3. Do the data show that air temperature can be estimated by cricket chirps?
4. Suppose you have a tape of crickets chirping at different times of day. How could you tell if the air temperature is increasing or decreasing?