Name _____ Class _____ Period _____

30–1 What Are Some Parts of a Food Chain and a Food Web?

Plants use light energy of the sun to make food. The food is stored in the cells of the plant. Plants are called producers because they make food. Some of the stored energy in the food that plants make is passed on to the animals that eat the plants. Plant-eating animals are called primary consumers. Some of the energy is passed on to the animals that eat primary consumers. Animals that eat other animals are called secondary consumers.

The pathway that food energy takes through an ecosystem is called a food chain. A food chain shows the movement of energy from plants to plant eaters and then to animal eaters. An example of a food chain can be written as follows:

(producer) seeds → (primary consumer) sparrow → (secondary consumer) hawk

Some of the food energy in the seeds moves to the sparrow that eats them. Some of the food energy then moves to the hawk that eats the sparrow

Because a hawk eats animals other than sparrows, you could make a food chain for each animal the hawk eats. If all the food chains were connected, the result is a food web. A food web is a group of connected food chains. A food web shows many energy relationships.

INTERPRETATION

OBJECTIVES

In this exercise, you will:

a. determine what different animals eat in several food chains.
b. build a food web that could exist in a forest ecosystem.

KEYWORDS

Define the following keywords:

consumer _____

food chain _____

food energy _____

food web _____

producer _____

MATERIALS

colored pencils metric ruler

Scanned by VueScan - get a free trial at www.hamrick.com

PROCEDURE

Part A. Examining Food Chains

1. Read the introduction and examine the food chains given below

(producer)	(primary consumer)	(secondary consumers)		
plant roots	rabbit	fox		
plant seeds	mouse	fox		
plant leaves	earthworm	robin	snake	
plant leaves	rabbit	snake		
plant leaves	cricket	robin	fox	
plant stems	earthworm	snake	hawk	fox
plant stems	rabbit	hawk		
plant stems	small insects	mouse	owl	
plant leaves	rabbit	owl	fox	
plant leaves	cricket	mouse	hawk	
plant fruits	mouse	snake	owl	
plant fruits	small insects	robin	snake	

2. Answer the questions that follow:

a. List the organisms that you think are producers._____

b. Why are they called producers?_____

c. List the organisms that you think are primary consumers._____

_____

d. Why are they called primary consumers?_____

e. List the organisms that you think are secondary consumers._____

_____

f. Why are they called secondary consumers?_____

g. Herbivores are organisms that eat plants. List the herbivores in the food chains._____

h. How does your list of herbivores compare with your list in question c?_____

_____

i. Carnivores are organisms that eat other animals. List the carnivores in the food chains._____

j. How does your list of carnivores compare with your list in question e?

_____

k. Make two food chains using animals not listed in the above food chains.

_____

_____

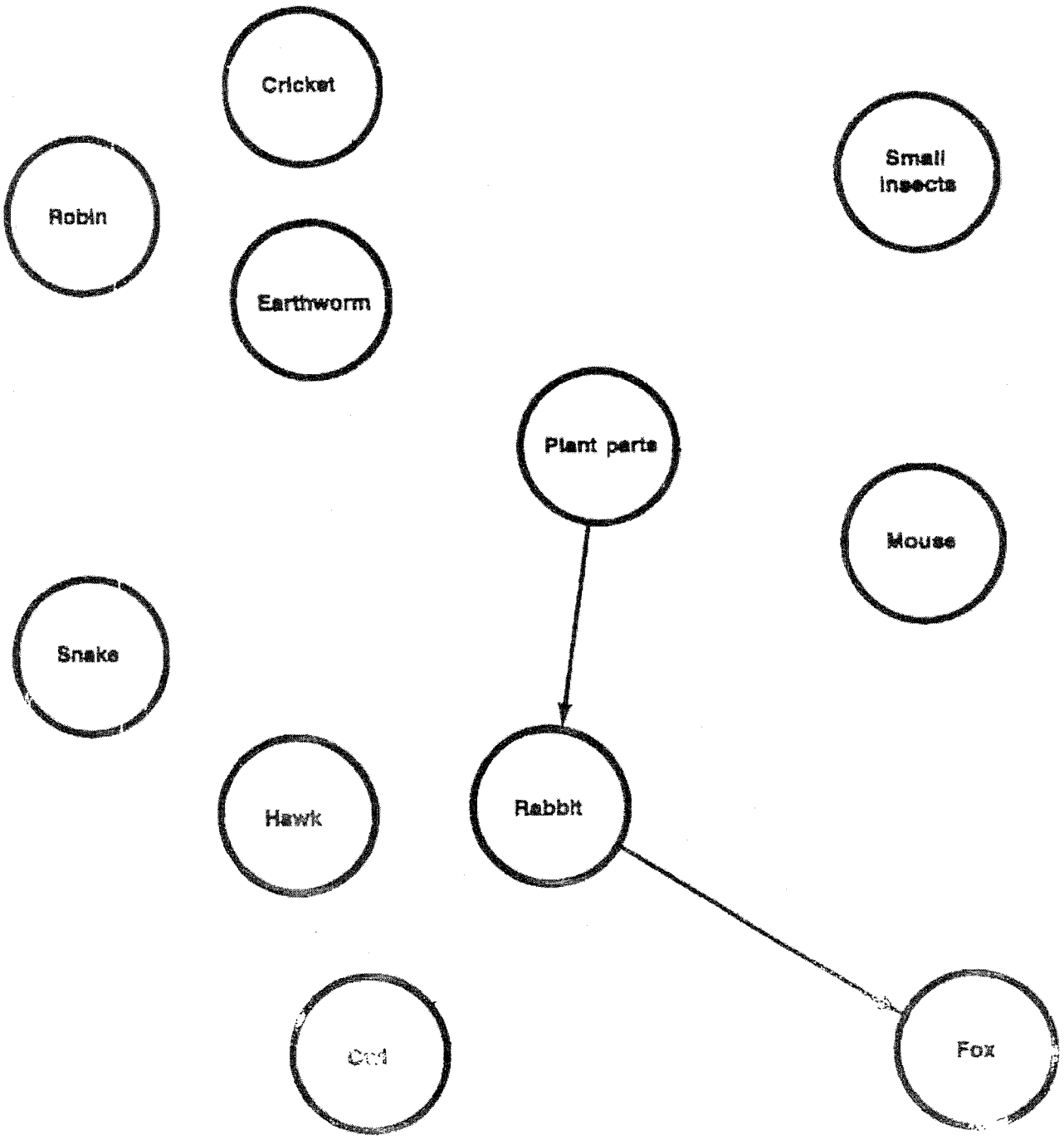
Scanned by VueScan - get a free trial at www.hamrick.com

Name _____ Class _____ Period _____

Part B. Making a Food Web

1. Use the information in Part A on the previous page to complete Figure 1.
2. Draw lines from each organism to other organisms that eat it.
3. Show which organism gets the energy by making an arrow pointing in the direction of energy flow from producers to primary consumers, to secondary consumers. One food chain has already been done for you.
4. Draw your lines with different colored pencils for different food chains. To make it easier to read when finished, do not draw through the circles.

FIGURE 1. A food web in a forest ecosystem



Scanned by VueScan - get a free trial at www.hamrick.com

QUESTIONS

1. How many of the food chains you made in Figure 1 include the following animals? hawk _____ earthworm _____ fox _____

   small insects _____ owl _____ snake _____

2. How many of the food chains include plant parts? _____

3. Give the names of the producers that are in the food web. _____

4. Give the names of the consumers that eat both plants and animals.

   _____

5. What would happen to the food web if all the plants were removed?

   _____

   Explain your answer. _____

   _____

6. What might happen to the owl population if there were less rabbits, mice, and snakes in a certain year? _____

7. What organisms will be affected if crickets, small insects, and earthworms are killed by pesticides? _____

   _____

   _____

8. Draw three food chains below that can be connected in a food web. Show producers and consumers that you might see in your backyard or on your way to school.

secondary consumers

primary consumers

producers

Scanned by VueScan - get a free trial at www.hamrick.com