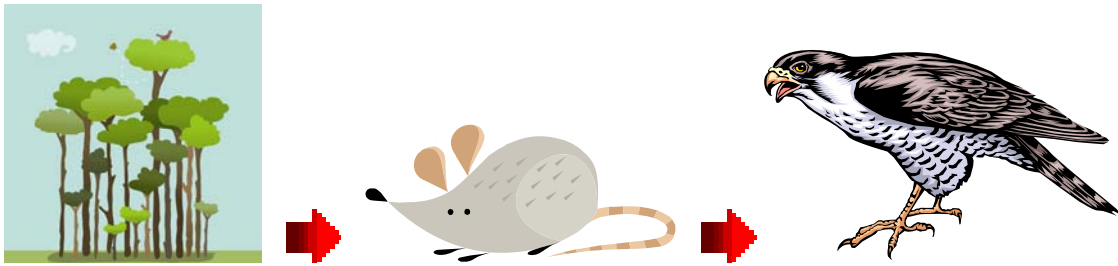


Food Webs

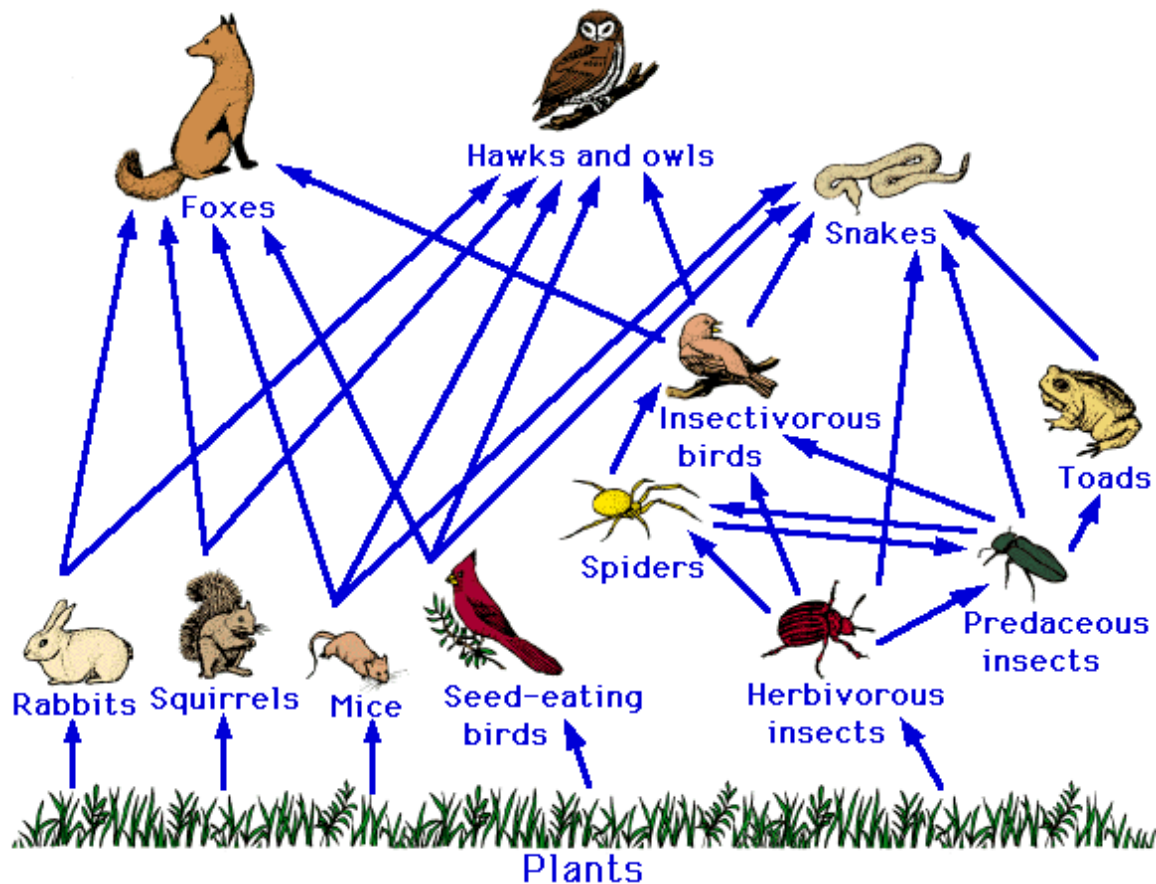
Read This:

Food chains are diagrams that reflect how energy flows within an ecosystem. They show where food originates (producers), and then how other organisms such as animals eat the producers. Here is an example of a food chain.



The plants produce food (producers). The mouse eats the plants (primary consumer). The hawk eats the mouse (secondary consumer / predator).

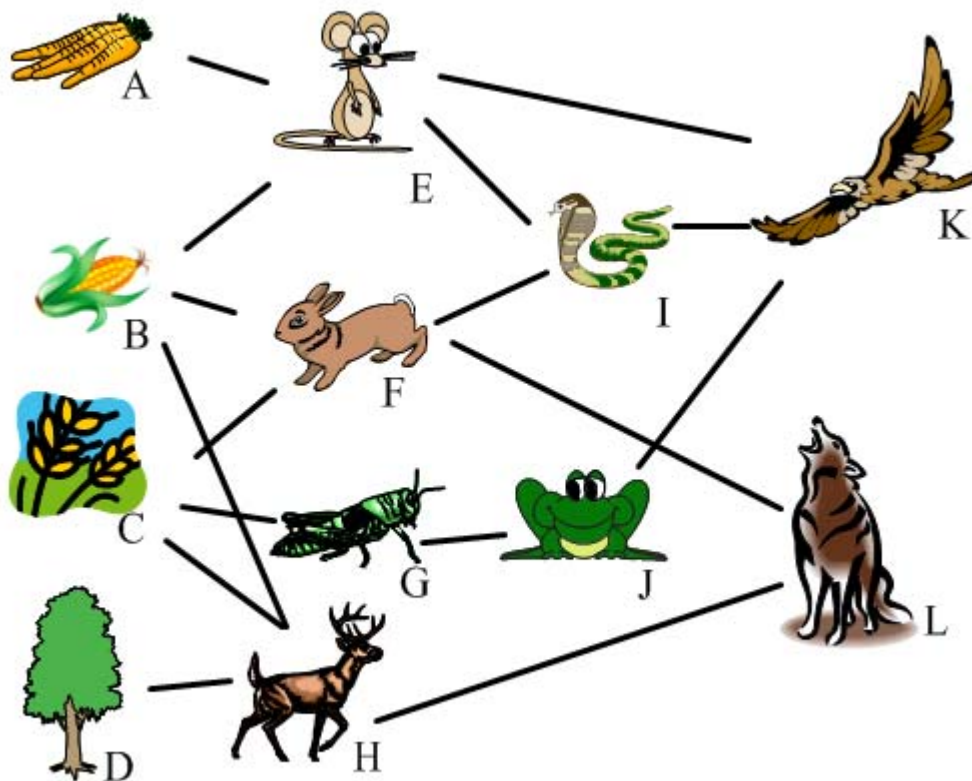
Food webs are similar to food chains, but they include many food chains that overlap each other.



The arrows in this food chain represent how energy (food) flows through an ecosystem. There are five primary consumers that eat the plants (rabbits, squirrels, mice, seed-eating birds, and herbivorous insects). Then, there are seven secondary consumers or predators that eat the primary consumers (foxes, hawks and owls, snakes, insectivorous birds, toads, spiders, and predaceous insects). Notice how many of these animals eat the same food source. For example, both foxes and hawks eat rabbits. When two organisms eat the same food they are *competitors*. If the fox eats the rabbit, the hawk will not eat and could die.

Whenever looking at food webs, it is important to infer what would happen to one organism when there is a population change in another organism. Population is the number of members there is of one organism. For example, there may be 1,000 rabbits, so their population is 1,000. But what would happen if many of the rabbits suddenly died. Well, both foxes and hawks would have less food, because they both eat rabbits. Therefore, with less food, both foxes and hawks populations would drop. Before, there may have been 250 fox, but with fewer rabbits the population may drop to 200 fox (same for the hawks). Plants, on the other hand, have less rabbits eating them, so their population may go up. That would mean more food for all the rabbits competitors as well (squirrels, mice, seed-eating birds, and herbivorous insects).

Answer These:



Use this food web to answer the next six questions.

1 Which of the organisms in the food web is not a consumer?

- A corn
- B frogs
- C mice
- D snakes

2 According to the diagram, how many different types of primary consumers are eaten by snakes?

- A one
- B two
- C three
- D four

3 How many primary consumers are present in this food web?

- A two
- B three
- C four
- D five

4 Which of the following is a valid food chain according to the food web?

- A carrots - mice - frogs
- B corn - rabbits - hawks
- C trees - deer - wolves
- D trees - grasshoppers - snakes

5 Which organism would most likely be adversely affected by a decrease in the carrot population?

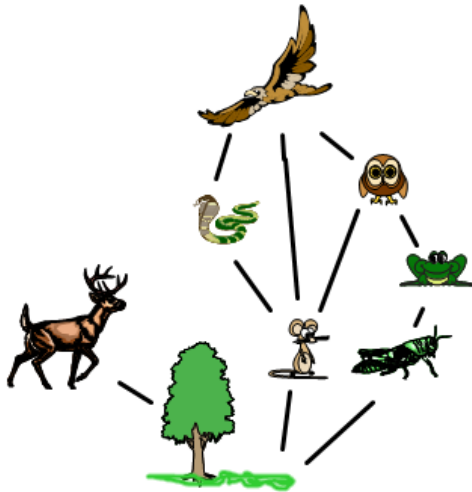
- A deer
- B grasshopper
- C hawk
- D wolf

6 Which are most likely competitors in this food web?

- A A & B
- B C & G
- C E & H
- D I & J

7 Where did the energy supplied by the producers in this food web originally come from?

- A animal waste
- B insects
- C other producers
- D the Sun



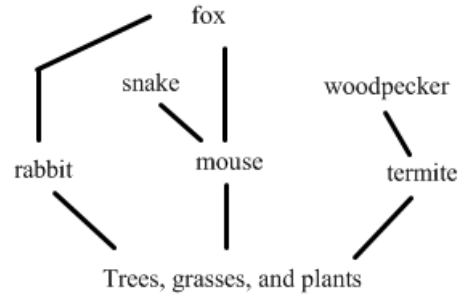
Use this graph to answer the next two questions.

8 Which organism would most likely be adversely affected by a continuous decrease in the population of mice?

- A crickets
- B deer
- C grass
- D hawks

9 What would be the most likely outcome if the grasshopper population were to increase?

- A The snake population would increase.
- B There would be less food available for the mice.
- C The deer population would increase.
- D There would be less available food for owls.



Use this graph to answer the next two questions.

10 A food web consists of many interconnected food chains. Which of the following represents one of the food chains in the food web shown in the diagram?

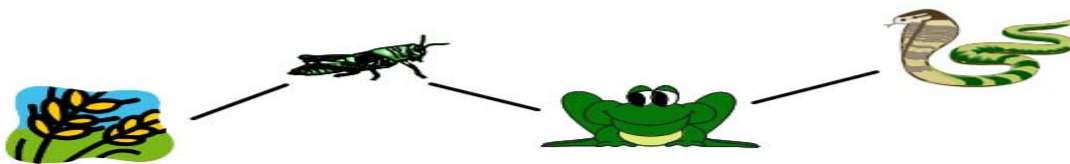
- A plants - mouse - fox
- B plants - snake - termite
- C rabbit - plants - termites
- D woodpecker - termite - mouse

11 According to this food web, what would be the most likely outcome if an insecticide was used to reduce the number of termites.

- A The fox population would decrease.
- B The rabbit population would decrease.
- C The woodpecker would find another source of food such as bark beetles.
- D The woodpecker population would decrease.

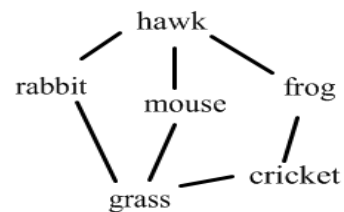
12 In the food chain shown, which organism represents a primary consumer?

- A frog
- B grass
- C grasshopper
- D snake



13 Based on the food web, which statement best describes a direct result of a decrease in the rabbit population due to disease?

- A The cricket population will decrease.
- B The frog population will be eliminated.
- C The grass population will increase.
- D The hawk population will increase.



14 Based on the food web, if an insecticide is used to destroy most of the leaf beetles, what will most likely be the effect on the food web?

- A Leaf beetles will multiply rapidly, providing more food for small birds.
- B Small birds will avoid poisoned insects by preying on frogs.
- C The population of large birds will die out.
- D The grasshopper population will have more available food.

