



PREY FOR ME

BENCHMARKS and TASK

SC.B.2.2.1 The student knows that some source of energy is needed for organisms to stay alive and grow.

SC.G.1.2.5 The student knows that animals eat plants or other animals to acquire the energy they need for survival.

SC.G.2.2.2 The student knows that the size of a population is dependent upon the available resources within its community.

- The student experiences, through participation in simulations, that each habitat supports a limited population with the limit being set by the food, water, shelter, and space available.

KEY QUESTION

How does the relationship between predator and prey affect wildlife populations?

BACKGROUND INFORMATION

Living things need food to give them **energy**. Energy passes from one living thing to another through **food chains**. A **food chain** is a simple way to look at how animals depend upon their **habitats** and other animals to survive. Every food chain begins with the **sun**. Green plants (**producers**) are responsible for making food that animals (**consumers**) eat. An animal that eats the plants is a primary consumer. (A grasshopper is a good example.) A secondary consumer (such as a lizard) eats the primary consumer. This relationship is often referred to as a **predator/prey** relationship, where the predator is the hunter and the prey is the victim.

Food is just one of the things that living creatures need in order to survive. There are other necessities, components of habitat, which animals require for survival. These other components include water, shelter, and space. Without a sufficient amount of each of the four components, an animal may not survive long enough to reproduce and maintain the **population**.

An animal's **environment** is often called its habitat. A habitat is the place where an animal finds its food, water, shelter, and space. Each habitat is capable of supporting a limited population of animals. The limit is set by the food, water, shelter, and space available. This limit is called the carrying capacity.

MATERIALS

Per class

flagging tape, ribbon strips, or construction paper strips (2 colors enough for the whole class)

4 hula hoops (or yarn circles) placed on the field to mark temporary shelters

3 chips per student for food tokens (or use paper squares) scattered on the field

blue chips for water tokens (see Extend and Apply)

TEACHING TIP

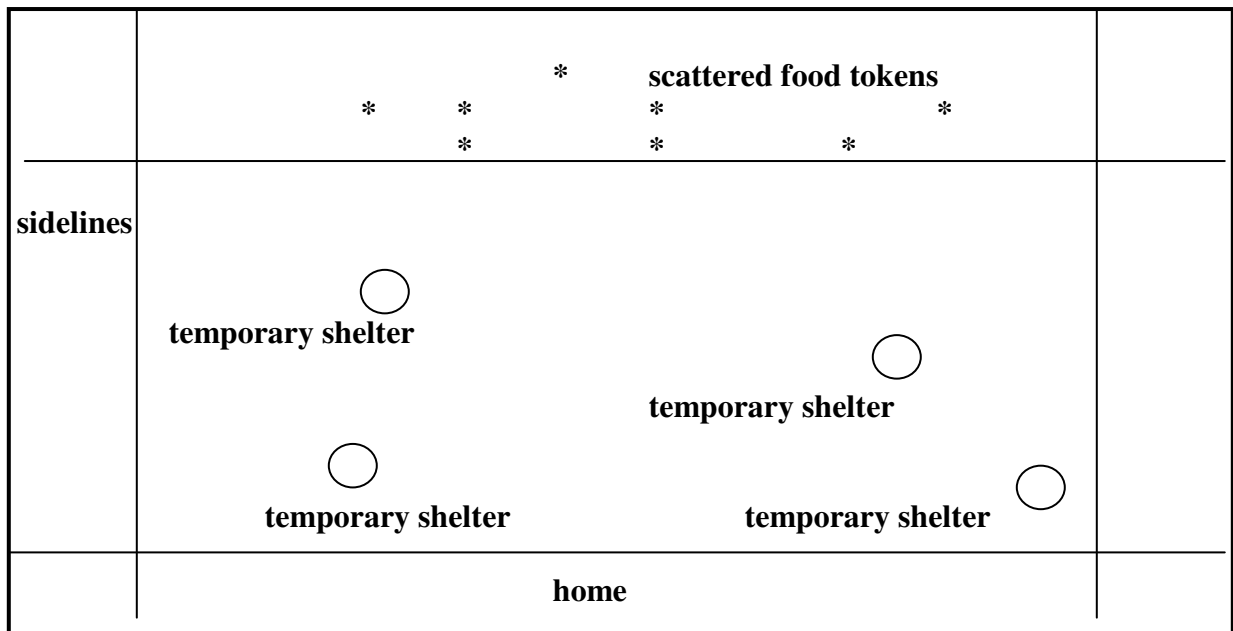
Locate a playing area for the activity and prepare the area before class.

ENGAGE

1. Have students listen to this story and then write a response in their science journals:
You are a field mouse creeping around in the meadow. Your stomach is getting empty, so you start looking under leaves, crawling between branches and twigs, looking for food. Finally, you see a few good seeds a couple of feet away. Mmm! Do they look tasty! You look around to make sure there isn't anything waiting to grab you and then you dash over to the seeds. You know better than to eat them right then and there, so you pick them up and start back home. Suddenly, a fox comes out of nowhere and the chase is on! You wonder, "What do I do now?" You need to decide quickly! What should you do?
2. Have students share some of their responses. Discuss the merits of different decisions.

EXPLORE

1. Identify students as foxes or field mice. (There should be 1 fox for every 4-6 mice).
2. Distribute flagging tape (1 color for foxes, a different color for mice). Have students tie the tape around their arms or heads (somewhere easily seen) to identify which animal they represent.
3. Set up the playing field as follows:



4. Follow these game rules:
 - At an agreed upon signal (e.g., whistle, hand clap), the field mice need to travel from home to gather food.
 - They must carry only one piece of food at a time safely home before they travel back for more. In order to survive, field mice must successfully gather three food tokens.
 - Mice may use either of two methods to protect themselves from predators: seek temporary shelter or freeze where they are. In seeking temporary shelter, field mice may run to a temporary shelter, and they must have at least one foot inside the hoop. The mice may freeze whenever a fox is within five feet of them. (The idea of freezing in place is that the mice are less visible to the predator than when they are moving).

- Remind the mice that there is a time limit on the game, so staying in the shelter or freezing too long may not be good for them; they may not be able to collect enough food to survive!
 - Foxes, the predators, may start the game anywhere in the food or playing field area.
 - Foxes hunt by tagging *moving* field mice *gently* on the shoulder or upper back area.
 - Foxes must have 2 prey in order to survive. Foxes capture prey by bringing them one at a time to the sidelines.
 - Foxes may not tag “frozen” mice or mice in temporary shelters.
5. Allow 5-7 minutes for each round. At the end of each round, tally the number of mice and the number of foxes that were unable to collect enough food.
 6. Play several games, allowing all students to be predator and prey at least once.

EXPLAIN

What is the difference in a predators and a prey? (The predator is the hunter and the prey is the victim.)

Can an animal be both predator and prey? (yes)

Which animals were the prey in this game? (mice)

Are mice ever predators? (Yes, they might eat ants or caterpillars.)

Which animals were the predators in this game? (foxes)

What other animals might be predators to mice? (snakes)

Are foxes ever prey? (yes) What animals could we introduce to the game that would be predators to the fox? (cougars or panthers)

What methods did predators use to capture prey?

Which escape methods were the most effective for the mice?

Why do animals eat each other? (They need food for energy in order to survive.)

How does this game simulate real life?

What might eventually happen to the foxes and mice that did not get enough food? (They might die or move to a new habitat where food was more plentiful.)

EXTEND/APPLY

1. Have students think of another predator/prey relationship. Ask students to describe the race for survival between the two animals.
 - What behaviors could the prey use to survive?*
 - What behaviors would enable the predator to be successful?*
2. Play the game again, but add water tokens to the playing field and require each animal to retrieve at least one.

ASSESSMENT

Explain what would happen if we had an unexpected decrease in predators in a habitat. Use the fox and mice habitat as an example. *If the foxes were not around to eat the mice, what results could you expect?*