

Who lives here?
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Grade Level: K-12

Duration: 3 class periods

Subject: Science, Math, Health Enhancement

Standards: Science Content Standard 1 benchmarks 1, 3
Content Standard 3 benchmarks 1, 2, 3, 4, 5
Math Content Standard 1 benchmarks 1, 3, 4, 5
Content Standard 6 benchmarks 1, 2, 3, 4
Content Standard 1 benchmarks 1, 2
Health Enhancement Content Standard 4 benchmark 1
Content Standard 7 benchmark 2, 3
Social Studies Content Standard 3 benchmark 3

Goals:

1. Students will exhibit an understanding of the three main components of habitats and the relationships of how animal population is influenced by their environment.
2. Students will be able to collect data out on the field and display their conclusions on a graph.
3. Students will be able to identify limiting factors in habitats based on what they have learned and observed.

Materials: copy of book, Who Pooped in the Park by Gary D. Robson illustrated by Elijah Brady Clark
Designated field trip area that contains rich animal habitat
Copy of “Oh Deer” game instructions
Journals, pencils and graph paper

Vocabulary:

Habitat: the environment where a plant or animal naturally lives the provides three essential components; food, water, and shelter

Predator: an animal that depends on other animals as a food source (example: eagle)

Prey: a food source for other animals. (example: gopher)

Limiting Factors: factors that contribute to change in population of a species (examples: predators, food, water and space shortages)

Procedure:

1st Class Period:

1. Read picture book, Who Pooped in the Park , aloud to whole class discussing what students will be looking for while out in the field.
2. Teach students vocabulary list and predict the types of the animals you expect to find sign of while out in the field. Discuss the sources of food, water, and shelter available in the field area you will be visiting.

2nd Class Period:

1. Go out in the field and record in journals what types of animal sign we can find and determine what animals live in area. (have field guide from back cover of Who Pooped in the Park pasted inside journals for students to use)
2. Have whole class discussions on the relationship of the three components of habitat observed.

3rd Class Period:

1. Play game "Oh Deer" with class. (Instructions attached.) Teacher keeps track of data for each round (year) the class plays. (with older students, you could select one of them to keep track of data)
2. After experiencing the population variations through the game, have students help reproduce the sample data into a visual through graphing what has happened as a whole class or individual depending on age of students.
3. Have students make predictions and conclusions based on their data and experiences in a whole class discussion.

Assessment:

1. Can students name essential components of habitat?
2. There are many limiting factors can students name at least three examples?
3. Examining the graphs and be able to recognize which factors have caused population changes between each of the years tracked.

Oh Deer

Adapted from Project WILD (Western Regional Environmental Education Council, 1983).

(*Keep track of how many deer there are at the beginning of the game and at the end of each round on the chalkboard or dry erase board.)

Divide students into two groups, having them stand in parallel lines facing each other, about 15 feet apart. "The students in one line are going to be deer. The students in the other line are going to be parts of the habitat. In order for deer to survive, they need food, shelter, water and space. We'll assume the "deer" have enough space; space will be the area between the two lines. So the "deer" will be looking for food, water and shelter. When a deer is looking for food, he or she will place their hands on their stomach. When looking for water, the deer will put their hands over their mouth. When looking for shelter, the deer will put their hands together over their head like a rooftop."

"The students in the habitat line will represent the components of a habitat - food, water and shelter. At the beginning of each round, students in the habitat line will choose which component they would like to be during that round. The students in the habitat line will use the same symbols for food, water, and shelter that the deer will be using."

"When we start each round, all students will be lined up in their respective line; the deer will be on one side and the habitat on the other. The students in one line will have their backs to the students in the other line. At this point, you will choose a symbol to depict. If you are a deer, you will decide what part of the habitat you are looking for; if you are part of the habitat, you will decide what part of the habitat you will represent. Both the deer and habitat will then make that

symbol. When everyone is ready, I will count to three and then you will face the opposite group, continuing to hold your signs clearly. At this point, the deer will WALK to the habitat line to find the part of the habitat they are looking for. The deer must hold their symbols until they find a student on the habitat line with the same symbol. When a deer finds the same symbol, the deer takes that student representing the habitat component back to the deer line. This represents the deer reproducing, as a result of having a good habitat. If a deer cannot find the part of the habitat it is looking for, someone with the same symbol, the deer dies and becomes part of the habitat. If more than one deer reaches a habitat component, the deer that reached the component first survives. Remember that only the deer look for habitat components. Habitats don't have legs; they have to stay in place until a deer takes them back to the deer line. If a deer doesn't need a particular component of the habitat, that habitat stays where it is and remains a habitat component in the next round. This is not a game, a race, or a competition. We'll walk and not run. Since we are trying to find out what happens to a population of deer when its habitat changes, it is very important that you do not change your symbol during a round. You may only change your symbols at the beginning of each round."

Guided practice: Show students the data from the activity. Pass out graph paper and guide the students in graphing the deer population. The number of deer will be on the vertical axis and the round, or year, will be on the horizontal axis. This will help students to visually see how the deer population fluctuated over a period of years. "What did the deer in this activity need to survive? What happened when they didn't find one of the parts of a habitat? Do populations of animals stay the same or do they change or cycle? What causes them to change or cycle?"

Introduce predators, and take one deer out while they are walking toward the habitat. Discuss. After several rounds, have the entire habitat group represent shelter. This represents a drought with no available food or water. For the last round, have the habitat line lay down on the floor instead of choosing a component, representing a flood, fire, or development. There will be no food, water, or shelter; all the deer die or move.