

Name: _____ Per: _____ Date: _____

Niche: Every living thing has a role to play.

Use an online dictionary to define the underlined vocabulary terms. The terms in bold are terms especially important for the Ecology Unit.

In an ecosystem, communities of organisms interact with one another as well as with the area's non-living components—such as soil, water, air and sunlight—to form a functioning unit. Many species can share the same ecosystem because each species has its own specific role within the **community**. This role is called an organism's niche or ecological **niche**.

Soil, Water, air and sunlight are examples of which vocabulary term?

Multi-faceted:

Metaphor:

An ecological niche is sometimes described as the species' job within its **ecosystem** or community; however, a niche is more multi-faceted than this metaphor suggests. An ecological niche encompasses a species' position, functions, influences and relationships within the ecosystem. It is a detailed description that includes a range of information about the species from the habitat where it lives to the time of day, temperature or pH in which it

functions. Although several species can have overlapping or similar niches, they cannot share the exact same niche because they would compete with each other until one forced the other out.

To explain the complexity of the term "niche," it is sometimes helpful to compare the niche of a species with those of people in our community or to students themselves. Each student lives in a defined area or habitat, but he or she uses different parts of the habitat at different times of the day, week or year. A student may be in history class at school at 10:00 a.m. on a Monday, but sleeping at home at the same time on a Saturday. Different students have different food preferences, talents, behaviors, skills and responsibilities. In addition to going to school and studying, a student may volunteer at a library, play drums in the band, play soccer or watch their cousins, brothers or sisters. Students live in different family groups and have different ethnic, cultural and religious backgrounds. These components or elements are all part of an individual student's niche. All students, with their diverse niches, share environmental and social resources with others and are all integral to the health of the community.

diverse:

integral:

In the natural world, rather than individuals, different niches are filled by different species. Just as the niche of a student is complex, so is the niche of a wild plant or animal species. For example, a gray squirrel lives in places that have deciduous trees, such as woodlots, backyards, parks and forests. It is a herbivore that is most active during the day as it goes about eating nuts, buds, and seeds. It is also a **prey** species, eaten by a variety of **predators** from coyotes to Great Horned Owls.

Although this squirrel lives mostly in trees, it spends much time on the ground, gathering fallen acorns and other nuts. Because of its habit of burying nuts for the winter, the gray squirrel could be compared to a forester or arborist, helping to take care of neighborhoods, parks or forests by planting trees, especially oak trees. Those buried acorns that are not eaten grow to be trees when the conditions are right.

species:

deciduous:

herbivore:

Diurnal:

Non-native:

In order for an ecosystem to stay in balance, basic functions must occur. For example, predators must consume **prey**; **decomposers** must break down non-living organic material, and so on. These functions are part of a species' niche. Therefore biologists expect to find species with similar niches in different ecosystems. For example, in forests, wetlands and field ecosystems, biologists expect to find diurnal (active during the day) predators hunting for prey. If no diurnal predators are obvious, biologists will want to take a closer look at the system. Why isn't

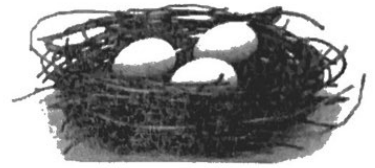
there a diurnal predator? Is the ecosystem out of balance? Are one or more species taking over the system? Are the major predators being affected by disease or something else? Has a non-native species been introduced to the area and disrupted the interactions in the ecosystem?

Despite vast differences among types of ecosystems, certain patterns can be observed and applied to better understand the interactions of a given ecosystem. Understanding the niche of a species helps biologists develop management plans for the species and their associated ecosystems, predict potential issues with the species or ecosystem and may help prevent some human and wildlife conflicts. Recognizing the niche of species can also help wildlife watchers view a variety of species and improve habitat for wildlife in their backyards.

vast:

habitat:

Niche Reading Analysis Questions



1. Based on the reading what is the meaning of the term niche?
2. Why can't species have overlapping niches?
3. Using the reading describe the niche of a squirrel.
4. Describe the relationship between the oak tree and the squirrel. How do they influence each other?
5. What are some basic functions of an ecosystem?
6. What can cause an ecosystem to get out of balance?
7. Explain why it is helpful for ecologists to study ecosystems.