4th Grade Science Review- Habitat and Niche

https://www.ck12.org/biology/habitat-and-niche/lesson/Habitat-and-Niche-MS-LS/

Read and answer questions on next page. Highlight or underline evidence in text to support your answers!

What is your niche at school?

Are you on the basketball team? Are you a cheerleader? Do you play an instrument in the band? Your niche would be your role or place in the school. Organisms also each have their own niche in the ecosystem. Is an organism a producer or a consumer? How does the organism interact with other organisms?

Niche

Each organism plays a particular role in its ecosystem. A **niche** is the role a species plays in the ecosystem. In other words, a niche is how an organism "makes a living." A niche will include the organism's role in the flow of energy through the ecosystem. This involves how the organism gets its energy, which usually has to do with what an organism eats, and how the organism passes that energy through the ecosystem, which has to do with what eats the organism. An organism's niche also includes how the organism interacts with other organisms, and its role in recycling nutrients.

Once a niche is left vacant, other organisms can fill that position. For example, when the Tarpan, a small wild horse found mainly in southern Russia, became extinct in the early 1900s, its niche was filled by a small horse breed, the Konik. Often this occurs as a new species evolves to occupy the vacant niche.

A species' niche must be specific to that species; no two species can fill the same niche. They can have very similar niches, which can overlap, but there must be distinct differences between any two niches. If two species do fill the same niche, they will compete for all necessary resources. One species will out compete the other, forcing the other species to adapt or risk extinction. When plants and animals are introduced, either intentionally or by accident, into a new environment, they can occupy the existing niches of native organisms. Sometimes new species out- compete native species, and the native species may go extinct. They can then become a serious pest. For example, kudzu, a Japanese vine, was planted in the southeastern United States in the 1870s to help control soil loss. Kudzu had no natural predators, so it was able to out-compete native species of vine and take over their niches.

Habitat

The **habitat** is the physical area where a species lives. Many factors are used to describe a habitat. The average amount of sunlight received each day, the range of annual temperatures, and average yearly rainfall can all describe a habitat. These and other abiotic (nonliving) factors will affect the kind of traits an organism must have in order to survive there. The temperature, the amount of rainfall, the type of soil and other abiotic factors all have a significant role in determining the plants that invade an area. The plants then determine the animals that come to eat the plants, and so on. A habitat should not be confused with an **ecosystem**: the habitat is the actual place of the ecosystem, whereas the ecosystem includes both the biotic (living) and abiotic (nonliving) factors in the habitat.

Habitat destruction means what it sounds like—an organism's habitat is destroyed. Habitat destruction can cause a population to decrease. If bad enough, it can also cause species to go extinct. Clearing large areas of land for housing developments or businesses can cause habitat destruction. Poor fire management, pest and weed invasion, and storm damage can also destroy habitats. National parks, nature reserves, and other protected areas all preserve habitats.

1. What is a niche?

2. Can two species share the same niche? Why or why not?

3. Name three factors that can be used to describe a habitat.

4. Distinguish between a habitat and an ecosystem.