

Habitats

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Lesson Three: Survival

Specific Outcomes:

1. Students will compare the external features and behavioral patterns of various animals and relate these features to how they are able to meet their basic needs in their natural habitats.
2. Students will predict the structural and/or behavioral patterns needed for an animal to live in a particular habitat, real or imagined.

Discussion:

Discuss the activity of the previous lesson asking students what they learned about what organisms need to survive in their habitat. Ask them what they discovered about organisms in the habitat they have chosen to observe. Ask students to brainstorm a list of ways animals hide from their enemies and obtain food. Refer to the ecosystems listed on the chart paper in Lesson One.

Share the following story with the students:

At one time giraffes had different sizes of necks. Some had shorter necks than others. They couldn't compete with the longer necked giraffes for food supplies which were on the higher trees and branches. They couldn't reach the leaves and twigs. Because there wasn't much food for the giraffes close to the ground the shorter-necked giraffes didn't get enough to eat. Over generations, the shorter-necked giraffes died out and the long neck ones grew stronger and healthier. Eventually there were only long necked giraffes.

Explain that this process is called "natural selection" and occurs in every species. Explain that the giraffe's long neck is an adaptation. Sometimes different species within the same animal family have different adaptations depending on their habitat. For example, the Siberian tiger has striped fur while the snow leopard has a white and black coat. These adaptations allow the cats to survive in different environments. The Siberian tiger's striped fur keeps it disguised in the forests of China, while the snow leopard's white fur helps it to be disguised in the snowy environment.

Use the chalkboard or chart paper to make a chart of animals and their adaptations. Students can brainstorm a list of animals that they are familiar with, their adaptations and the effects of such adaptations.

Information Card 2

How Animals Adapt

There are many different kinds of habitats in the world. Each of these contains organisms that have evolved over millions of years to survive in the particular environment of each habitat. Animals and plants need to survive and reproduce in the environment in which they live. Many of them have developed adaptations that enable them to take advantage of the food sources available. These adaptations may involve the whole organism, parts of the organism or its behavior.

The Desert Ecosystem

Desert organisms have many different ways of surviving. The cactus plant has long deep roots and stems that can store water in the cells. The leaves of the cactus have special spines which enable it to control the amount of water it loses. They take in carbon dioxide only during the night and keep the pores closed during the day when it is hottest. This **adaptation** allows the cactus to survive where most plants would die from the heat and lack of water.

Other desert plants survive by living as dormant (sleeping) seeds that only grow after rain has fallen. once they get wet, they flower and produce new seeds within a few days. Then the plants can sleep again until there is more rain, even if that is not for years.

The animals of the desert that are well-known are the camels. Everyone is familiar with their humps of fatty tissue. These humps provide food for the camels for many days. They are also able to go without water for long periods of time. this is because they have a special system for cooling their blood as it flows to the brain. They are able to tolerate much higher temperatures than most other mammals. They have a thick coat of fur which helps to keep out the heat of the day and protect them from the cold at night. They can see through their eyelids. so it is possible for a camel to keep moving in the middle of a sandstorm. They can also open and close their noses.

All the creatures of the desert have adapted to their habitat in some way. the kangaroo rat recycles and retains water so that very little is lost through urination. Birds ride the warm currents of air to find relief from the heat at great heights. The spadefoot toad burrows deep into the ground to hibernate, while the lizard migrates back and forth from sun to shade. Cicadas extract water from their blood through large ducts to the surface of their bodies where it evaporates.

Habitats

Name _____

Date _____

Fill in the correct words to complete the following sentences. Choose words from the box at the bottom of the page.

1. The basic parts of plants are the _____, _____, _____, _____, _____ and _____.
2. The _____ provide a plant with support and absorb the water and nutrients they need to grow.
3. There are two types of roots: _____ and _____.
4. The _____ of a plant carry the water and nutrients to the leaves.
5. Food for plants is made in the _____.
6. The process of making food is called _____.
7. The part of the plant that helps it to make seeds is the _____.
8. The _____ is the ripened ovary of a plant.
9. The male parts of the flowers are called _____.
10. The _____ of a flower help to protect the developing bud.

pollen
edible
flowers
fruits

petals
ovary
stems
seeds

anthers
roots
leaves
fibrous

stamens
sepals
taproot
photosynthesis