Habitat Sweet Habitat

Objectives: Using collected data, students will be able to select the proper habitat for a butterfly. Students will define camouflage and adaptation.

Background: One of the Earth's most valuable resources is its biological diversity or biodiversity. Biodiversity results from the interaction of living and nonliving environmental components. Non-living components are things such as air, water, climate, and geological features. Forests, prairies, caves, and other ecosystems are all different and contain numerous habitats that support diverse populations of organisms. This is called ecological diversity. Biodiversity depends on ecological diversity. Populations of organisms exhibit variations in size and structure because of their adaptation to their habitats. Biologists estimate that Earth's current biodiversity consists of 40 to 80 million different species, each having variations in its genetic makeup and living in a variety of biological communities. The adaptation these animals make to their environment helps them survive.

Materials: seven large sheets of drawing paper, masking tape, crayons, one copy of the butterfly for each student, and one data collection sheet for each student.

Procedure: Read the enclosed story. Immediately after reading the story have the students color their butterfly.

1. Going back to the story, discuss what an arboretum is. Students might want to "AskJeeves" on the computer or look the word up in the library.
2. Discuss the term "habitat." Could the arboretum be a habitat for the butterfly? Discuss other habitats with the students. List the many different habitats on our planet where butterflies might live. Ask the students to describe the different habitats in the arboretum. Write these environments on the board (beach, sunflower field, garden, forest, night, tropical, and desert).
3. Break the students into teams and have them create pictures of the habitats (encourage them to be colorful) and label them as 1-beach, 2-sunflower field, 3-garden, 4-forest, 5-night, 6-tropical, and 7-desert. Hang these habitats around the room.
4. Review with the students what animals need to survive (food, water, space, shelter, and air). Ask a series of questions about shelters such as: What does a shelter provide? What kinds of shelters are there? Do you know that some animals do not live in closed shelters like the houses where we live? Do you know that some animals are sheltered "in the open," for example: in trees, on other plants, or in the ground? Children usually think of a shelter as a place that keeps an animal safe from harm. A shelter also keeps an animal from being seen, caught, and eaten by a bigger animal. By the end of the discussion, children may wonder "How can an animal that lives out in the open keep safe from being seen and eaten

by other animals?" Encourage the students to consider the relationship between an animal's coloration and its environment and how this coloration can help protect the animal from harm. At this point, make a connection between this question, the butterfly in the story, and the environments they have colored. As the discussion concludes, draw the students' attention to the labeled habitats around the room and tell them it is time to collect data about their butterflies.

5. Distribute data cards to each student. At their seats, have the students examine the butterfly they colored and the habitats around the room. Have the students predict the habitat in which their butterfly would be the safest. Have them record their prediction in the blank on the data sheet.
6. After making their predictions, students should move from habitat to habitat matching their butterfly to the habitat and evaluating how well they could see their butterfly. They can tape their butterfly to the habitat and step back to examine it. Have the students consider color, shape, and the pattern of their butterfly's markings. Students should record their findings by marking an "☺"on the square under the name of the habitat in which their butterfly was the most difficult to see – the safest spot for the butterfly. Students may revisit the habitats as often as needed to confirm their decision.
7. When they have decided their butterfly's safest habitat, they should complete the information on the bottom of the data sheet.
8. After students visited all habitats and recorded their findings, have the students who share like environments gather as a team. For example: all of the butterflies that decided the desert was the best environment would be a team. Have the team discuss the reasons they felt their butterflies were safest in the desert.
9. After a short discussion, have the teams share their findings with the class. Have them explain their conclusion and provide evidence by showing their butterflies on the habitat and telling what made their butterflies difficult to see and therefore kept them safe. Encourage them to use information about the idea of color, size, or shape as characteristics that help the butterflies.
10. At this point, introduce the word *camouflage*, defining it as "the word we use to describe how an animal's protective coloration allows it to blend with its environment and helps to keep it safe."