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BUTTERFLY CAGES

ITEM # 9114-48 (HANGING BUTTERFLY CAGE)
9115-12, 9115-18, 9115-24 (POP-UP CAGES)

BIOLOGY - NATURE OBSERVATION

Witness the wonder of the butterfly life cycle with this child and insect friendly habitat. This reusable butterfly pavilion is the perfect environment for young entomologists to breed and view butterflies. Lightweight, durable construction makes for easy handling. See-through mesh with zippered entry allows easy access for care and feeding, and keeps butterflies inside until you set them free.

Students can use different sized butterfly cages (36" hanging cage, 12", 18", or 24" pop up cages) to keep different number of butterflies. The larger pop up cages can also hold larger plants or more types of plants to complete the vivarium for the observation of the butterfly life cycle.

Materials

- various types of plant leaves (depends on the species of butterfly)
- moist cotton balls (humidity source)
- butterfly larva or eggs
- hand lens
- simple or compound light microscope (optional)

Goals & Objectives

See page 4 for Next Generation Science Standards (NGSS)

History

Butterflies were kept since the later 1970s in many specialty buildings (butterfly house) similar to a greenhouse. Previously butterflies were treated as animals observed in the field but not in a “zoo” until more recently. Butterflies are now kept by many people not just scientists or professional animal caretakers.

How It Works

The butterfly cage provides a light-weight vivarium to easily observe the butterfly life cycle. The mesh sides allow plenty of air exchange between the cage and the atmosphere as well as letting in light for observations or for plants in the cage.

GLOSSARY

Vocabulary:

- cells
- consumers
- decomposers
- dichotomous key
- ecosystem
- life cycle
- producers

ACTIVITIES

1 *Students observe the life cycle of the butterfly.*

Students can make drawings of each step; eggs, larva, pupa, and adult, and use these drawings for class discussion or to make conclusions. Students can use a hand lens to view the different stages and observe the organism's details. Some of the observations might include behavioral responses to different stimuli as well as a response to different types of plants. Specific observational details can be used as evidence to support conclusions about an organisms' behavior.

2 *Students can use basic observations of butterflies to identify a specific species of butterfly by using a dichotomous key.*

Depending on the species of butterfly available, the butterfly cage can be set up to hold several types of butterflies. Students can observe the details of each type of butterfly to determine the presence or absence of specific structures or behaviors. Following the dichotomous key, students can determine the type of butterfly based on the presence or absence of structures or behaviors.

3 The butterfly cage can also be used to hold different types of moths. Using moths and

butterflies, students can compare the anatomy of these different types of organisms by using a hand lens. Observing the details of each type of organism, students can compare the primary differences between moths and butterflies (or between other types of animals).

4 Within the butterfly cage, students can set up small food chains that involve butterflies. The primary interaction is between plants and butterfly larva. Overtime, students can estimate how many plants (by mass eaten) are required to support a certain number of butterflies.

5 Students can use a microscope to observe cells and internal organs of dead (deceased) butterflies. Students can use dead butterflies to explore the anatomy of insects and become familiar with the microscopic details of this group of organisms. Students can observe different smears of cells from different body parts to identify different cell types. The cell can be stained with methylene blue to help observe cell walls and nuclei.

DISCUSSION

Additional Discussion and Real Life Applications

- 1** *How do butterfly larva obtain resources to live?*
- 2** *For providing the butterfly's needs, what advantage does a mesh cage have over an empty fish tank?*
- 3** *What body parts help butterflies obtain their needs for life?*

RESOURCES

- <http://sciencenetlinks.com/lessons/butterfly-1-observing-the-life-cycle-of-a-butterfly/>
- <http://www.butterflyschool.org/teacher/raising.html>

Next Generation Science Standards

Students who demonstrate understanding can:

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive.

1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.

2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.

3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Standards Key

K = Kindergarten
3 = 3rd Grade
(numbered by grade)
MS = Middle School
HS = High School
PS = Physical Science



5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

MS-LS1-3. Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.