

Grade Levels: kindergarten – 2nd

Description:

Students will explore the lifecycle of butterflies, looking at what they need to survive, how they change during metamorphosis, and the role they play in pollination.

Objectives:

Upon completion of this lesson, students will be able to

- Describe the lifecycle of a butterfly
- Explain that animals get food, water, and shelter from their habitat
- Explain the relationship between monarchs and milkweed
- Explain the process of pollination

Please use the following materials as an aid to help prepare your students for their visit to Green Bay Botanical Garden. The vocabulary list consists of terms that may be used during your visit and the activities listed below are designed to familiarize your students with the topics that will be covered during their visit. They are listed as options – it is not necessary to complete them all or do them in any particular order. Please feel free to modify the vocabulary definition or activities in any way to better suit your students. Keep in mind, their experience will be enhanced if they are familiar with the concepts before their visit, or if the learning that took place in the Garden is reviewed and reinforced back in the classroom.

Vocabulary

Adult: the final stage of the butterfly or moth lifecycle, the butterfly

Caterpillar: the larval stage of a butterfly or moth

Chrysalis: the pupa stage of a butterfly, they may be many different colors but are usually not fuzzy or hairy in appearance

Cocoon: the pupa stage of a moth, cocoons are usually fuzzy or hairy in appearance

Egg: the first, or infant, stage of an insect lifecycle before the wings form

Habitat: the natural surroundings of a plant or animals, where an organism finds the food, water, shelter, and space it needs to survive

Larva: the second stage of a butterfly or moth lifecycle, though it looks like a worm the larva of an insect actually has 6 true legs

Metamorphosis: this describes a change in form, when an insect larva turns into an adult

Migration: a large movement of animals; traveling to a new part of the world, often during the winter season, in order to find food or survive

Molt: shed its skin

Nectar: a sweet liquid found in plants, attracts pollinators to flowers

Pollination: when pollen is spread from one flower to the next, fertilizing the egg and producing a seed

Proboscis: the straw-like mouth of a butterfly or moth, it remains curled up under their head when not being used

Pupa: the third stage of a butterfly or moth lifecycle

Shelter: a structure that provides protection from danger and the environment

Activity 1:

Raise caterpillars in your classroom. Caterpillars can be purchased through biology supply companies or found on garden plants such as milkweed, parsley, and cabbage plants. As you watch it grow, discuss what it needs to survive – food, water, shelter, air. Discuss what would happen if your caterpillar wasn't able to get enough of these things. Observe the changes that take place during the caterpillar's life.

Activity 2:

Review the lifecycle of the butterfly by creating an obstacle course. Designate an area of the classroom or school yard for each stage of the butterfly lifecycle. Label the stages with their name: egg, larva, pupa, adult. Walk through the course with students and explain the activity required at each stage.

Egg – sit in a ball like an egg and then hatch

Larva – creep and crawl slowly like a caterpillar

Pupa – hang like a chrysalis (money bars work great) and shake to keep predators away

Adult – fly like a butterfly to flowers for nectar to drink

Have students move through the course acting out the stages. After a few rounds, you can add hazards that butterflies might face (a patch of pesticide covered flowers (a blanket or rug) they have to jump over; a “bird” (other student who tries to tag them) to avoid so they don't get eaten; a road they have to cross without getting hit by a car (other students who run up and down a path).

Activity 3:

Have students research butterflies and moths common to your area. For each type, find pictures of the caterpillar, pupa, and adult. Find out what they like to eat, what plants the butterflies lay their eggs on, and where they live. How does the butterfly or moth protect itself? Is it camouflaged, does it taste bad, or does it scare away predators with eye spots or horns? Have students create posters to talk about their butterfly or moth.

Activity 1:

Compare the needs of different things, like plants and butterflies. Discuss what butterflies need to survive. Discuss what plants need to survive. Create a Venn Diagram to list the needs and to see the similarities and differences. Do plants and butterflies have any similar needs? What are some of the differences?

Activity 2:

Research the needs of different types of animals. Have students pick an animal (be sure to include animals from different types of habitats) – a frog, a desert tortoise, a whale, a monkey, a camel, a deer, a worm. While animals all have similar needs for food, water, shelter, and space, they all need different amounts of each factor. Have students research and present on their animal – what does it eat, where does it live, how does it get its water. Compare their findings and discuss whether their animals would be able to survive in a different habitat.

Activity 3:

Many insects depend on plants just like caterpillars and butterflies do. Ask students which kinds of insects they think live in the school yard. What do they eat? Are they helpful or harmful? How can you tell? Where do they live? Allow students to make hypotheses or suggestions. Take the students on an insect hunt. Divide the class into four groups – each group will search in a different area to collect insects. Provide each group with collecting jars and magnifying glasses to observe their insects with and any additional equipment needed for their group.

Group 1 – search in the soil or mulch around trees and shrubs. Provide them with shovels or spoons for digging.

Group 2 – “shakedown shrubs” and other plants. Give them a white sheet or white paper to lie on the ground under the shrub and have them shake the branches to knock down insects.

Group 3 – search in the grassy lawn.

Group 4 – search for flying insects. Using a net or pillowcase, students can sweep through the air with the pillowcase mouth open, then squeeze the mouth shut to hold in the insects. Have students not catch bees, just remember that they saw them.

After 10-15 minutes of collecting, have students share their finding with the other groups. Have students pick one insect to make a drawing of. Return insects to their habitats when finished.

Teacher Resources:

Monarchs in the Classroom Curriculum Guides (available at www.mlmp.org)

Rosenblatt, Lynn M. 1998. *Monarch Magic!: Butterfly Activities and Nature Discoveries*. Charlotte, VT: Williamson Publishing.

Student Books:

Bernard, Robin. 1995. *The Life of a Butterfly*. New York: Scholastic Inc.*

Bunting, Eve. 1999. *Butterfly House*. New York: Scholastic Inc. *

French, Vivian. 1993. *Caterpillar Caterpillar*. Cambridge, MA: Candlewick Press.*

Gibbons, Gail. 1989. *Monarch Butterfly*. New York: Holiday House.*

Howe, James. 1987. *I Wish I Were a Butterfly*. New York: Harcourt Brace & Company.*

Ryder, Joanne. 1989. *Where Butterflies Grow*. New York: Dutton Children's Books.*

** Books available for checkout in Green Bay Botanical Garden's Children's Library*