



Butterflies and Moths

Objectives and State Standards:

- ② Students will list the five main classes or groups of arthropods and name one animal in each. (Science Standard 3.1)
- ② Students will describe the differences between complete and incomplete metamorphosis. (Science Standard 3.3)
- ② Students will name two arthropod adaptations. (Science Standard 3.1)

Activities for before your visit:

- ② **Life Cycles:** Read “Waiting for Wings” by Lois Ehlert. Have students use watercolors to illustrate the different stages of the butterfly’s life cycle on square pieces of paper. They could each do all four stages or you could assign one stage per student. Explain that the butterfly goes through complete metamorphosis. There is a complete change from the egg to the adult. Have students write two sentences to go with each picture, imagining what the butterfly could be thinking in each phase of its life cycle. Have students use their imaginations and have fun with this. Assemble all the pictures into a life cycle quilt to display in the classroom.
- ② **Complete Metamorphosis:** Order Painted Lady caterpillars. Have the students make butterfly nature journals so they can make daily observations of the Painted Ladies. Have them CAREFULLY measure the caterpillars to chart their growth. Have them try to determine about how much the caterpillars are eating. Have them record the caterpillar’s and later the butterfly’s behaviors. Have them draw pictures not only of the four phases of the butterfly’s life but of other exciting events. (See Butterfly Prompts and Natural Journal download.) When it is time to release the butterflies, invite parents to the big event and show off the journals.
- ② **Incomplete Metamorphosis:** Bring crickets into the class for observation. (They can easily be obtained from a pet store.) Put them in small observation boxes. Have the students observe them in small groups. You might have them answer some questions to keep them on task. Discuss what they observed. Ask if anyone has a baby cricket. How do they know? Crickets do not go through complete metamorphosis like butterflies. The baby (nymph) looks very much like the adult. They just grow wings and develop a reproductive system, as they get bigger. (With female adults you can see the ovipositor.) Have the students draw a picture of the cricket’s life cycle. Have them compare their cricket’s life cycle to their butterfly’s life cycle. Have students write two ways the life cycles are the same and two ways they are different.
- ② **Arthropods:** Break the class into five groups. Give each group a picture of one of the following: a grasshopper, a spider, a crayfish, a millipede, or a centipede. (See Photo Gallery for download.) Explain that these animals are arthropods. They are arthropods because they share the following characteristics: an exoskeleton, jointed legs, segmented bodies, bilateral symmetry, and they are cold blooded. Have each group spend a few minutes discussing their animal. Now as a group, have them write out a description of their animal. Have each group read their description to the class. Use their description to make a list of the characteristics that make each animal unique. Explain that these animals are representatives of the five main classes of arthropods. Put the words insect, arachnid, crustacean, millipede, and centipede on the board. Hand out pictures of many different arthropods. Have students tape them under the correct heading on the board.
- ② **Flutterby:** Have the Butterfly Pavilion’s “Flutterby” outreach program come to your classroom to teach you about butterflies, moths, and life cycles. For more information on this program call (303) 469-5441, ex. 1862.

Activities for after your visit:

- ② **Writing Cartoons:** Everyone likes the cartoon character Spiderman. Give each student a cartoon strip; have them create a cartoon where the hero is a butterfly. What kinds of special adaptations would the butterfly have? What adventures would it have? Could it have a caterpillar sidekick?
- ② **Adaptations:** Put pictures of invertebrate animals up on the board. Discuss adaptations. Have students brainstorm a list of adaptations for the different animals. Are they physical (something on the animal’s body) or behavioral (something the animal does)? Now have students each use one adaptation from three different Butterfly Pavilion animals they saw and create a brand new animal. Have them draw their animal. Have them design a home for it. What does it eat?
- ② **Bug Benefits:** Assign each student a country or continent like Africa, Japan, the U.S., or Australia. Have them research two ways insects are important (good or bad) to their location. There are many examples but some possible insects could be mosquitoes, flies, ladybugs, silkworms, scale insects, walking sticks, and termites. Students should be able to point their location out on a map and then tell how the insect is important to the people of that area. Maybe the insect spreads disease, is a food source, is kept as a pet, or eats crops.

Resources:

Meet the Arthropods by Ellen Doris

Waiting for Wings by Lois Ehlert

Painted Lady Butterflies by Donna Schaffer

<http://www.enchantedlearning.com/subjects/butterfly/activities/printouts/paintedlady.shtml>

<http://www.pma.edmonton.ab.ca/natural/insects/projects/painted.htm>

<http://www.thebutterflysite.com/rearing.shtml>

www.carolina.com