

Butterflies and Other Lepidopterans

Biological Classification Series

Grade Levels:

Grades 5-10

Subject Areas:

Science

Life Sciences

Biology

Synopsis:

Live-action film footage captures a butterfly chrysalis warding off its enemies and notes the scaly wings that are characteristic of all Lepidopterans. Each stage of metamorphosis is filmed: mating, egg laying, hatching, molting, chrysalis formation and emergence of the adult butterfly. Butterfly caterpillars are depicted as equally destructive as moth caterpillars. Close-up photography reveals how the proboscis draws nectar from deep inside flowers or from other liquid food sources.

Learning Objectives: Students will:

Understand that butterflies are insects that have wings covered by scales.

Name and describe each stage of butterfly metamorphosis.

Understand that butterfly caterpillars can be destructive to crops, fruit trees and forests.

Understand that most of the 150,000 species are not harmful.

Vocabulary:

chrysalis, crumpled, eyed hawk-moth, nocturnal, Lepidopterans, antennae, millimeters, larva, metamorphosis, diurnal, club-shaped, molt, immobilized, transform, nectar, proboscis, pterophore, sesias, discreet, aggressive, havoc, processionary caterpillars, collective nests, cocoon

Pre-Viewing Discussion:

Which insect would you prefer to have in the house: a moth or a butterfly? What is the reason for your choice?

Where do adult butterflies find food? How do they eat?

How is silk thread produced? Why does the silk worm spin a cocoon?

Are butterflies and moths, insects? What are the distinguishing characteristics of insects?

Post-Viewing Discussion:

What is the meaning of the word, “Lepidoptera”? How does this meaning apply to butterflies?

What is the purpose of the moths’ feather-like antennae?

What happens to adult moths after they mate?

How many legs does a butterfly caterpillar have? Where are they located? How many days does a butterfly caterpillar remain in this stage? How do caterpillars grow?

How are caterpillars able to damage forests and orchards?

How do butterflies and other Lepidopterans demonstrate the process of metamorphosis?

Further Activities:

Find out which of the five major classification groups butterflies and other Lepidopterans are in (i.e. Kingdom, Phylum, Class, Order, Family). Chart the relationships of animals in the largest to the smallest taxonomic groups around them. What characteristics make this group similar to and different from the other groups to which they are related? Then, pick one species from the program and determine its genus and species name, writing them in the proper scientific terminology. Find out why the genus and species name is written the way it is.

Investigate the variety of chrysalis’ that are created by butterflies. Illustrate their relative sizes in chart form and the relative size and coloration of the butterflies that emerge.

Investigate how the caterpillar of the Gypsy moth causes severe damage to forests in the Northeastern USA or how the coldling moth does extensive damage to fruit farms.

Discover why moths are less likely to eat materials containing artificial fibers. Can they really be repelled by the scent of juniper or cedar? If so, why are these substances effective?

Discover why moths are sturdy and usually more resistant to pesticides than mosquitos and flies.

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