

Ladybug Beetles and Other Coleopterans

Biological Classification Series

Grade Levels:

Grades 5-10

Subject Areas:

Science

Life Sciences

Biology

Synopsis:

Opens with close-up photography of aphids providing food for ants, which in turn are being eaten by ladybugs. Shows that the ladybug has two membranous folding wings protected by two rigid wing covers that are typical of Coleopterans. Also notes the grinding mouth apparatus common to all beetles. Extends the concept of beetle to include beneficial and harmful species that live in all environments and form the largest group in the animal kingdom.

Learning Objectives: Students will:

Understand that Coleopterans have two wings protected by two rigid wing covers.

Understand that ladybugs and their larvae eat aphids.

Understand that certain Coleopterans are a danger to farmers' crops.

Understand that certain Coleopterans are detritivorous and clean the environment.

Understand that Coleopterans are the largest group in the animal kingdom.

Vocabulary:

aphids, exude, dispensers, larva, nymph, membranous, elytra, Coleopterans, Colorado beetle, voracious, seedcorn beetle, larvae, apparatus, stamen, larva, decomposing, detritivorous, aquatic, predator, weevils

Pre-Viewing Discussion:

Why do we like to see ladybugs in a garden? What do ladybugs eat?

What other beetles are found in homes and gardens? Are they all beneficial to human beings or are some of them pests?

Where do beetles live? What do they eat?

How many species of beetles are there?

Post-Viewing Discussion:

How do ladybugs and their larvae control aphids?

What do aphids, ants and ladybugs have in common?

Why are beetles classified as Coleopterans?

Why are Colorado beetles and flea beetles a problem for farmers?

What are white worms? Are they really worms? Why are they Coleopterans?

What Coleopterans clean the environment?

Further Activities:

Find out which of the five major classification groups ladybug beetles and Coleopterans 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 body structure and habits of scarab beetles. How many species are there? Are these Coleopterans beneficial or harmful to human societies?

Discover how gardeners control the devastation that gold bugs can cause in a rose garden. In what parts of the world is the gold bug a problem? How are gold bugs controlled? Are pesticides the only answer to preventing infestations?

Discover how myths and folklore about ladybugs are related to their biological characteristics.

Investigate the habits and characteristics of aquatic beetles. How many species are there in North America? How are they distributed across the United States and Canada? Are they beneficial to the ecology of these areas?

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