

Bugs and Other Hemipterans

Biological Classification Series

Grade Levels:

Grades 5-10

Subject Areas:

Science

Life Sciences

Biology

Synopsis:

Live-action film footage isolates the distinguishing characteristic of Hemipterans, rigid fore wings covering tiny back wings and a piercing tool used for feeding. Omnivorous, carnivorous, and vegetarian species are introduced including firebugs, shield bugs, cabbage bugs, water striders, the corise, saucer bugs, and the water stick insect. Examples of homoptera such as aphids, white flies and cicadas complete the introduction to this prolific group, which includes 35,000 different species.

Learning Objectives: Students will:

Understand that the distinguishing feature of insects is their six legs and two antennae.

Describe the difference between the feeding habits of heteroptera and homoptera.

Explain what the meaning of “omnivores,” “carnivores,” and “vegetarians.”

Describe the feeding tube that is characteristic of Hemipterans.

Understand that there are 35,000 species of Hemipterans.

Vocabulary:

firebugs, pyrrhocoris, fire-bodied bug, omnivores, omnivorous, carnivorous, vegetarian stylets, syringe, heteroptera, saliva, liquefying, shield bug, antennae, corise, saucerbug, backswimmer, water stick insect, saucer bug, homoptera, aphids, aleurode, cicada

Pre-Viewing Discussion:

Are all bugs the same? What are their distinguishing characteristics? Can all bugs fly?

What do the bugs called “water sticks” resemble? What do they feed on? Where are they found?

If you wanted to see a great variety of bugs in one place, where would you go? What environment in particular supports a wide variety of flying and sucking insects?

How do true bugs feed themselves?

Post-Viewing Discussion:

How are the mouthparts of Hemipterans adapted to piercing and sucking?

How do the feeding habits of heteroptera and homoptera differ? Cite some examples of bugs in each group.

How many species of Hemipterans are there? In what environments are they found?

What is the cicada’s food source? How do aphids obtain food?

How do the feeding tubes of vegetarian bugs differ from those of carnivorous bugs?

Further Activities:

Find out which of the five major classification groups bugs and other Hemipterans 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.

Discover if cabbage bugs are a threat to agriculture today. If so, where are they a danger? How have crops been ruined by this vegetarian insect? How is their potential destruction being kept under control?

Investigate the typical life cycle of Hemipterans. What is unusual about how aphids and whiteflies reproduce?

Investigate the two types of cicada found in the United States. What is unusual about their life cycles?

Investigate the role of carnivorous bugs in the food chain. In your report, include bugs that eat bugs.

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