CANADIAN LEARNING COMPANY'S

Discussion Guide for

BUTTERFLIES: AMAZING INSECTS

Objectives:

- To describe the body structure of butterflies and the functions of parts such as the feet and proboscis
- To relate the differences between moths and butterflies, including color, body structure and behavioural habits
- To describe the stages of metamorphosis that butterflies undergo.
- To relate how caterpillars and butterflies protect themselves from predators.
- To discuss ways that that the average person can locate attract and better observer butterflies in their neighbourhood or in the wild.

Synopsis

There are approximately 150,000 species of butterflies known throughout the world. With such tremendous diversity, these delicate creatures are endlessly fascinating to observe and study. Beginning with a charming dramatization of an ancient Native American legend about the origins of the butterfly, this informative, beautifully filmed program answers many questions about a butterfly's life cycle, body structure and general behaviour. Viewers will learn how butterflies differ from moths, how caterpillars and butterflies protect themselves from predators, and what gives butterfly - wings their dazzling, colourful patterns. Viewers also will learn about the amazing monarch butterfly, which makes an annual migration of thousands of miles to reach its southern wintering ground. Also included are tips on how anyone can locate, attract and better observe butterflies in their own backyard.

Questions to ask before viewing

1. What is the difference between moths and butterflies?

2. What do you know about the stages of development of the butterfly from egg to adult?

3 Why do you think many caterpillars and butterflies are so brightly coloured?

4. What is special about the monarch butterfly?

5. What role in nature do butterflies play?

Questions to ask after viewing

1. How long ago do scientists think butterflies first appeared on Earth? (About 150 million years ago)

2. What role in nature do butterflies play? (They feed on flower nectar and in the process help to pollinate the plant.)

3. What are some differences between butterflies and moths? (Butterflies usually fly by day, are brightly coloured, and perch with their wings held up. Generally, moths are nocturnal, possess feather-like antennae, have earthy colours and fold their wings over their abdomen to camouflage themselves.)

4. What-is the scientific name for butterflies and moths? (lepidoptera)

5. Butterflies are members of which animal group? (insects)

6. What body structures do butterflies share with all other members of their animal group? (They have six legs and an exoskeleton that is made up of three segments -the head, thorax, and abdomen.)

7. How are butterfly feet special? (They are equipped with sensors for identifying the plants and flowers on which the butterfly is walking, and to detect food on these plants.)

8. What is the butterfly's proboscis? (It is a specialized tube-like mouthpart that butterflies can uncoil and move to siphon up its liquid food.)

9. What forms the colours and patterns on butterfly wings? (Colourful, microscopic shingle-like structures arranged in rows on the wing surface)

10. Why do many butterfly species have such bright colours? (They are flying warning signs. The colours warn birds that the butterfly either tastes bad or is poisonous, so birds learn to stay away.)

11. How do some butterfly species benefit from the appearance of others? (Some butterflies are not poisonous, but resemble others that are. Predators cannot tell the difference and leave the non-poisonous butterflies alone as well.)

12 Which butterfly species mentioned in the program migrates to southern wintering grounds? (monarch)

13. What are some of the reasons monarchs can migrate such long distances? (They can live up to eight months, which is a long time for insects. They are very strong flyers and they can fly very high, taking advantage of wind currents and thermals. Scientists also believe that the butterfly uses iron in its body as a natural compass.)

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14. According to the program, how far must some monarchs fly in order to reach their destination? (up to 6000 kilometres, or around 3750 miles)

15. How fast can some monarchs fly? (80 kilometres, or around 50 miles per hour)

16. How do butterflies locate mates? Mostly. they use visual cues.)

17. What does it mean when we say an insect undergoes a "complete metamorphosis"? (This means the insect goes through four stages, or transformations, to become an adult.)

18. List the four stages of butterfly metamorphosis.(The egg is the first, followed by the caterpillar, the chrysalis and the adult

19. How does the newly-emerging butterfly expand its wings before its first flight?

20. About how long does this process take before the new butterfly can fly off?

Activities:

Students can use the tips mentioned in the program to set up their own butterfly observatory at home or in the school yard.

As an extended activity, have students research what kinds of butterflies live in their area. What do they eat? Where do they attach themselves in the chrysalis stage? Then, if it is possible to gather the classroom with appropriate food and shelter for them. Have the class keep track of each stage by creating charts and diagrams. Once the caterpillars emerge as butterflies, have a party to release them into the wild.

In Native American cultures, these are many interesting legends involving the origins of animals. Ask students to try to find out about some of these legends and present them to the class. How do the stories compare to the one about butterflies dramatised in the program? What do students think is the purpose of these legends?

Related Titles:

1-8395 Moths and How they Live

1-9122 Animal Reproduction

1-8205 How we Classify Animals

1-8206 How Animals Survive

1-8207 Animal Communities

1-8393 Insects: Reproductions and Metamorphosis

PROGRAMS DETAILS

LENGTH:

20 minutes

SUBJECT AREAS:

Life Science

AUDIENCE LEVELS:

Grades 4 - 6

ORDER NUMBER:

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