

## **Flies and Other Dipterans**

### **Biological Classification Series**

#### **Grade Levels:**

Grades 5-10

#### **Subject Areas:**

Science

Life Sciences

Biology

#### **Synopsis:**

Beginning with the common housefly, reviews the characteristics of Dipterans: 3 sets of wings, halteres and proboscis. Also shows the life cycle of Dipterans through larvae and pupa to adult. Extends the definition of Dipterans to include several species that are parasites or disease carriers. Species covered include flesh flies, blowflies, bluebottles, bombylius, crane flies, mosquitoes, the tsetse fly, screwworm flies and drosophila. Reveals that there are 150,000 species found in all environments.

#### **Learning Objectives:** Students will:

Understand that there are many species of Dipterans found all over the world.

Explain why they are insects and the characteristics that distinguish them as Dipterans.

Understand that maggots represent a stage in the life cycle of Dipterans.

Explain how Dipterans feed and why certain species are a danger to human beings.

#### **Vocabulary:**

proboscis, saliva, adhesive, thorax, abdomen, halteres, larva, maggot, molt, molting, pupa, pupae, transformed, flesh fly, blow fly, bluebottle, aphids, bombylius, parasites, crane fly, mosquito, coagulate, anesthetic, irritant, malaria, microbe, tsetse fly, screwworm flies, drosophila, coveted, genetics, DNA

#### **Pre-Viewing Discussion:**

Can you imagine what the head of a housefly looks like under a magnifying glass?

Why don't we like these insects in our kitchens?

What other flies carry disease, particularly in southern climates? What diseases do they carry?

How many species of flies do you imagine there are in the world?

Are mosquitoes similar to flies? How are they similar? How are they different?

**Post-Viewing Discussion:**

Why is the common housefly able to climb windows?

Why do we know the housefly is an insect? Why is it also a true fly?

What is the life cycle of the common housefly? How many offspring can a couple of flies produce in one season?

What distinguishing feature does a fly have that a bee does not? What species of fly closely resembles a bumblebee? Why might this species be confused with a bumblebee?

How do female mosquitoes prepare to suck blood?

**Further Activities:**

Find out which of the five major classification groups flies and other Dipterans 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 how the tsetse fly carries sleeping sickness or how mosquitoes carry the malaria microbe. How are these diseases passed to their human hosts? What happens to a human body that has been invaded by one of these diseases? What is being done to lessen the spread of these diseases?

Investigate what geneticists have discovered in their experiments with drosophila. Why does this fruit fly make an ideal laboratory specimen?

Investigate how flies aid in the process of decomposition. Are they essential to the ecology of the many environments they inhabit?

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