

***Dedicated
to Reducing
Pesticides***

Unit 4 Lesson 1: The Good, the Bad, and the Ugly

Focus Areas: Pest Identification; Science

Focus Skills: observing, comparing/contrasting, drawing conclusions

Objectives

- To identify some of the important roles insects play on the Earth
- To identify insects that are harmful or helpful to the environment

Essential Questions

- How are insects important to life on Earth?
- How are insects helpful to people?
- How are insects harmful to people?
- How do insects affect farmers?

Essential Understandings

- Insects help people in many ways.
- Insects pollinate flowers and trees, enabling plants to reproduce.
- Many insects are garbage eaters, changing natural wastes into fertilizers.
- Insects play a vital role in the food chain. They provide food for birds, fish, and many other animals.
- Many insects, like ladybugs, control populations of insect pests, like aphids, that destroy crops.
- The praying mantis, like many beneficial insects, eats insects that may harm food crops or spread diseases. These plant diseases cost farmers millions of dollars in lost crops each year.



University of
Connecticut
College of Agriculture
and Natural Resources
Cooperative Extension System



Unit 4 Lesson 1: The Good, the Bad, and the Ugly

Background

Insects are the most successful creatures in the animal kingdom. They have been on the Earth for over 350 million years. They can survive in almost any habitat, from hot deserts to icy lakes, from muggy rainforests to the frozen landscapes of Antarctica. Three out of every four creatures on the Earth is an insect. Scientists have identified over 800,000 species. They hypothesize that there may be another nine or ten million species yet to be discovered. Many of these are in the rain forest and because these areas are being destroyed at such an alarming rate, many insect species will never be discovered.

Insects come in all shapes, sizes, colors, and textures. Although many insects are considered “pests,” less than one percent are harmful. Many species, such as ladybugs and butterflies, benefit the environment. Other insects, such as honeybees and silk moths, create useful products for humans.

While many insects are beneficial, some can cause great harm. Distinguishing between the two kinds is not always easy. Although bees sting, they are valuable pollinators of flowers. Many moths are beautiful, however, when in a larval stage, they destroy many crops.

Insects play a unique and important role in the Earth’s ecosystem. They aerate soil, recycle waste, pollinate plants, and provide food for birds and other animals. Understanding which insects are the pests and how to control them is essential to the health of the planet.

Vocabulary



disease	something that makes a plant or animal sick
harmful	something that hurts the environment
helpful/beneficial	something that is useful to the environment

Logistics

Time: 30 minutes
Group size: 5 to 30
Space: a classroom



Unit 4 Lesson 1: The Good, the Bad, and the Ugly

Materials

Pest or Guest Bingo Board Set *
Pest or Guest Picture Cards – (same as those on bingo boards) *
Izzy puppet *
hula hoops
playing pieces for bingo game

* single copy provided



Preparation

Obtain a bulletin board to display the “Pest or Guest” pictures.
Create a Venn diagram using two hula hoops.
Make two labels for the Venn diagram: **PEST** and **GUEST**.
Obtain playing pieces for the bingo game.

Activity

Introduction

Izzy tells the children:

1. The world has more insects than all other living things combined. Izzy illustrates this by dividing the group into teams of 4 and then having 3 members of each team step to the front of the room. These are the insects. The remaining children are all the other animals on earth!
2. We need insects for the work they do.
3. They visit flowers and spread pollen so that plants can produce fruits and vegetables.
4. Some insects eat other insects that damage plants. These insects are welcome “guests” in gardens and on farms.
5. Some insects harm plants, animals, and people.
6. Insects that hurt us, or bother us or our animals, are true “pests.”



Unit 4 Lesson 1: The Good, the Bad, and the Ugly

Activity

Involvement

1. Call the children's attention to the Venn diagram and place the labels **PEST** and **GUEST** in the non-intersecting portions of the two hula hoops.

2. Introduce the "Pest or Guest" cards:

PEST or GUEST Cards

Fruit flies – tiny, flying insects that breed in fruits and vegetables

Bees – they may sting, but they also make food that humans eat

Aphids – they harm plants by sucking sap

Carpenter ants – large black insects that nest in wood

Spiders – eat aphids and insects; they have eight legs

Cockroaches – eat almost anything; they like the dark and are hard to get rid of

Butterflies – beautiful insects that drink nectar

Moths – eat holes in wool and fur clothing; attracted to light

House flies – spread germs with their feet

Mosquitoes – give itchy bites; bats eat them

Wasps – they sting but also kill harmful insects

3. Read each clue and have participants determine the proper placement of each card within the categories **PEST** or **GUEST**.
4. Have participants share personal experiences they have had with these pests and guests. (Example: Has anyone ever found a leaf that had a large hole eaten in it?)
5. Remind the participants:
 - a. There are many more beautiful and helpful insects than there are harmful ones.
 - b. Insects play a very important role in the food chain. Without them, many creatures would have no food.
 - c. Insects eat other insects that cause people, especially farmers, lots of problems.



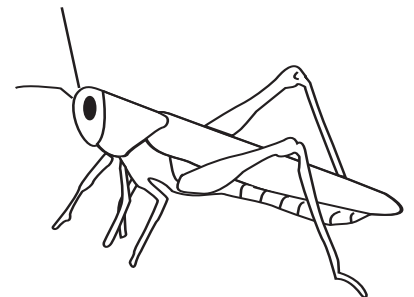
Unit 4 Lesson 1: The Good, the Bad, and the Ugly

Follow Up

Play Pest or Guest Bingo.

Give each participant a bingo card with the familiar "**PEST**" or "**GUEST**" pictures on it:

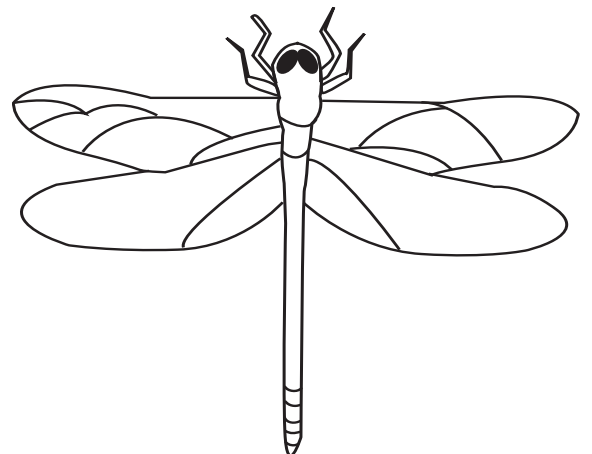
- Read the clues for each **PEST** or **GUEST** (see **Involvement #2** above) and have the children cover the correct insect.
- Children call "Bingo!" when they cover a row across, down, or diagonally.





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Notes





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