



## TINY MESSENGERS LESSON PLAN

### A Conservation Nation Academy Lesson

Please visit [www.conservationnation.org/lessons](http://www.conservationnation.org/lessons) for complete lesson materials including the lesson video, worksheets, and vocabulary list.

### GRADES

5-8

### TIME REQUIRED

Up to two, 45-minute class periods, including 20-30 minutes of outdoor activity

### SUMMARY

Insects are nature's tiny messengers, revealing the health of our planet. They pollinate plants, feed animals, recycle nutrients, and keep ecosystems thriving—but their populations are rapidly declining worldwide. In this lesson, students will learn from Conservation Nation Chrysalis Scholar Zabreya Okyere and her professor, Mariana Abarca, about why insect diversity matters and how we can protect it. Inspired by Zabreya's research on insects in leaf litter, students will head outdoors to assess insect habitats, explore leaf litter, and create ads encouraging others to "leave the leaves" for conservation.

### OBJECTIVES

Students will be able to:

- Conduct an insect habitat assessment of their schoolyard or local park.
- Examine leaf litter to observe and identify insects and other decomposers.
- Provide at least two ways to improve habitat quality for insects based on evidence and observations.
- Gain an appreciation for insects and overcome fears in observing insects and other decomposers.
- Create advocacy messages to promote insect conservation.

### MATERIALS

Available at [www.conservationnation.org/lessons](http://www.conservationnation.org/lessons)

- [Pre-read article: Insects-Nature's Hidden Gems](#) (available at the link or to print in the lesson materials)



- Tiny Messengers video
- Student worksheets: *(these are optional, students can copy instructions onto a notebook)*
  - Insect Habitat Assessment
  - Leaf Litter Assessment
- [Picture Insect Guide](#)
- Vocabulary list

## SUPPLIES

- Gloves or plastic bags
- Blank white paper

## NEXT GENERATION SCIENCE STANDARDS

**2-LS4 Biological Evolution: Unity and Diversity:** *Make observations of plants and animals to compare the diversity of life in different habitats.*

**HS-LS2-7 Ecosystems: Interactions, Energy, and Dynamics:** *Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.*

**MS-ESS3-4 Earth and Human Activity:** *Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.*

**HS-ESS3-1 Earth and Human Activity:** *Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.*

## INSTRUCTIONS

### 1. Introduction – 1 minute

- a. Briefly explain the goal: to analyze insect habitats in their community and gauge the health of the ecosystem based on what they find.
- b. Hand out student worksheets or present the worksheets on screen for students to copy into a notebook.

### 2. Watch the video – 11 minutes

- a. Play the *Tiny Messengers* video.

### 3. Class Discussion – 5 minutes

- a. Project or print the [Picture Insect Guide](#) to allow students to become familiar with local insects. *(NOTE: this guide was produced in North Carolina but applies throughout the U.S.)*
- b. **Discuss:** Where have students observed insects? What makes a good insect habitat?

### 4. Insect Habitat Walk – 10 minutes



- a. Guide students on a walk around the schoolyard or nearby park.
- b. Using the Insect Habitat Assessment worksheet, or their own notebooks, students should stop at several points for observation and documentation on the worksheet.
- c. Students can refer to the Picture Insect Guide if needed.

#### 5. Leaf Litter Exploration – 15 minutes

- a. Collect leaf litter from around the school or park in a pesticide-free area. Use gloves or plastic bags to protect hands. Use bags, bins, or other receptacles to store it. (NOTE: Be aware if students have mold or other allergies)
- b. Working in pairs or small groups either back in the classroom or outside, students place handfuls of litter on white paper or spread out in bins to observe using gloves or plastic bags to protect hands.
- c. Using spoons, paintbrushes, popsicle sticks or glove-covered hands, sort through the litter looking for insects. Encourage patience and students will start to see movement!
- d. Using the Leaf Litter Assessment worksheet or their own notebooks, students document what they find.
- e. **Class discussion:** How many insects did you find? Did you expect it to be more or less? Why? What changes in our environment might have damaged or hurt insect habitats? What changes in our environment might improve insect habitats around our school?

### ADDITIONAL ACTIVITY

Assign this activity as homework or conduct it in a separate class period to help students design, evaluate, and refine creative advocacy to promote insect conservation.

#### 6. Leave the Leaves – 20 minutes

- a. Fallen leaves provide important food and shelter for many insects and other soil-dwelling animals. Ask students: Why might “leaving the leaves” contribute to a healthier insect ecosystem?
- b. To advocate for others to leave the leaves instead of removing them completely from yards in the fall, students should work in pairs or small groups to design their own slogans or posters, or act out/record an ad, to encourage people to allow leaves to remain on the ground over the winter.

#### 7. Presentation and Reflection – 20 minutes

- a. Student groups or pairs present their campaigns to the class in 1-2 minutes each.
- b. Students ask questions and provide feedback on the campaigns, helping refine and improve messaging. Give reasoning behind their feedback.



- c. **OPTIONAL:** Class can vote on a winning campaign. All advocacy materials can be posted in hallways or other public places in school to impact others' behavior.

## LEARN MORE

If you would like to dive deeper into the world of insects and protecting their habitats, check out some of the following resources:

- The National Wildlife Federation's [Schoolyard Habitat Planning Guide](#).
- Chicago Botanic Garden's Leaf Litter Ecology Lab: [Unit 1\\_Grades 7-9\\_Activity 1-5\\_LeafLitterLab](#)
- A YouTube video playlist of all things insects: [\(158\) Arthropod Education - YouTube](#)
- Arizona State University X-ray Beetle Dissection: [Micro-CT Beetles | Ask A Biologist](#)
- The Arbor Day Foundation's [Tree Identification Guide](#) to compare native or invasive tree species

We hope you enjoyed this lesson!  
Learn more about Conservation Nation at  
[www.conservationnation.org](http://www.conservationnation.org)