Identifying Insects

Edible Schoolyard Pittsburgh

GROW PITTSBURGH

Spring
April

Materials

- Magnifying glasses or magnifying bug boxes (1 per student group)
- Printed Bug Guides (1 per student group)
- Garden Journals

Preparation

- Print copies of Bug Guide (1 per student group)

PROCEDURE

Part 1: How to Use a Field Guide

- Divide class into pairs or small groups and pass out copies of Bug Guide so that each student group gets a copy, saving one copy for yourself.
- Practice using the bug guide as a class, starting with the first page. “If we were to find a bug in the garden with eight legs and we wanted to learn what it was, using this guide, what page would we turn to?” All turn to page 4. “Now, how would we know if our bug was a spider or not? What two things make a spider different from a daddy-long-legs or harvest man?”
- Continue to practice using the guide: “What page might we find insects?” Turn to pages 2 and 3. “How can you tell the difference between a bee and a fly?” “Can you find a roly-poly in this Bug Guide?”

Part 2: In the Garden

- Transition to the garden. Remind students to be gentle with the bugs, since they are living things, and warn students not to try to catch bees or bugs that might bite. Some tips for finding bugs: remain still and patient and look closely, it might take a second for the bugs to move since they might be afraid. If leafs have holes, there might be a bug that is eating it. Some bugs hide (or lay their eggs) on the underside of leafs. Other bugs hide underneath leafs and mulch. Some bugs live in the soil.
- Pass out bug boxes or magnifying lens. Have students work in small groups or pairs using both their bug boxes and Bug Guides to discover and identify bugs. If they need help, you can be available to help students identify bugs. Remind students that we will be drawing what we find so encourage them to pay close attention and remember what their bug looks like.

Part 3: Garden Journals

- **Catch and Sketch:** Return to the classroom. Give students 5-10 minutes to sketch the bug they caught in detail. If possible, have insect and garden bug I.D. books available for further classification.
- **Bug Survey**: Also in their journals, students can create a list of all the bugs they found in the garden. This list is called a “Bug Survey.”
- To wrap up class, have students whisper out loud any bugs they found. Write these on the board until you have a list of every bug found by the whole class! This will give a good sense of the ecology of our garden.

Note: *If you find you do not have enough time, you can skip the Garden Journals (sketching and bug survey) and wrap-up class by taking a verbal survey of all the bugs found.*

Identifying Insects

Food & Technology

Objectives

- Students will be able to define what makes an invertebrate an insect.
- Students will be able to use a basic field guide to classify garden invertebrates.
- Students will have an understanding of what invertebrates are living in our school garden.

ENGAGE

Today's garden lesson will focus on garden invertebrates or "bugs." What bugs might you see in the garden? Now what makes a "bug" an insect (hint: six legs, three body parts)? Then, which of these garden bugs we just named are insects?

To reinforce the concept, you can play a version of "Head, Shoulders, Knees, and Toes" using "Head, Thorax, and Abdomen."

EXPLAIN

Insects and Other Invertebrates (What's in a Name)

It can be difficult to talk scientifically about bugs and insects, since many things we might call insects are not (scientifically speaking) classified as insects and most things we call bugs are not "true bugs." Scientists use the term 'invertebrates' or 'small invertebrates' to classify most the small wildlife we might find in the garden (worms, roly-polies, butterflies, lady bugs, centipedes), but invertebrates is also the classification for octopuses, lobsters (a close relative of the roly-poly), clams, star-fish and more.

Technically speaking, an insect has six legs (three pairs), one pair of antennae, and three body parts—a head, thorax, and abdomen. "True Bug" is a sub classification of insect that includes aphids, cicadas, and leafhoppers.

But we all call worms and roly-polies bugs and that's okay too. Sometimes there are a lot of names for one thing—like roly-polies, pill bugs, or potato bugs. Scientists call them *Armadilidium vulgare.* Our Bug Guide calls them isopods.

Insect Mimicry

Pay close attention in the garden: many insects have adapted to mimic each other in the garden as a means of survival. Some insects look like sticks or leafs. Some flies look like bees, but have only one pair of wings. Some spiders look like ants, but have eight legs. (Try using a Google Image Search for "ant-mimic spider," "bee-mimic fly," or "insect mimicry.") Why do you think it helps insects to use mimicry?

ADDITIONAL CONTENT INTEGRATION *(see previous page)*

Part 1: Back in the classroom, have additional field guides available so that some students have the option of identifying the insect they found in more detail.
Part 2: Present supplemental material on insect body parts. Have students consult the material as they label the different body parts featured in their journal sketches.

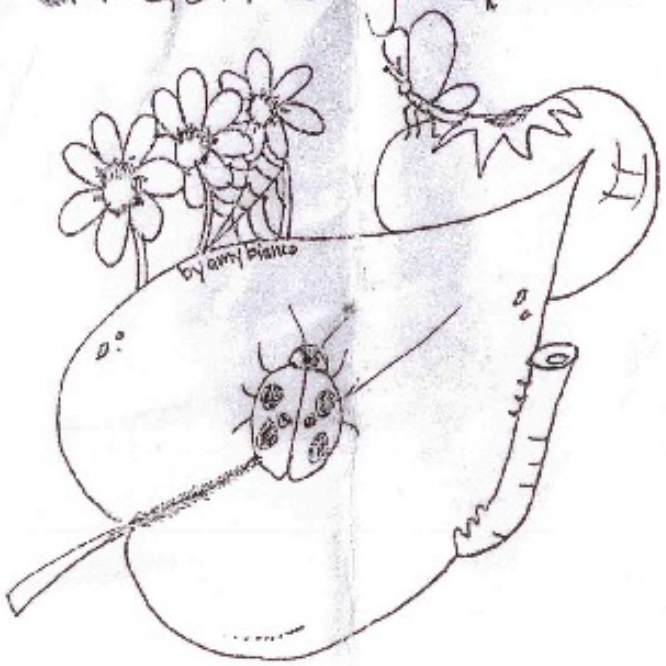
Additional Materials

- Whitney Cranshaw's Garden Insects of North America and/or other insect field guides.

EVALUATE

Journal prompt: Did you find any bugs in the garden that surprised you? Were there more or less bugs in the garden than you expected? Why do you think that was?

Garden Bug Guide



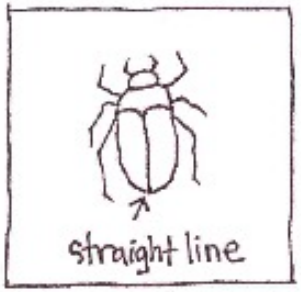
gastropods - NO LEGS

slug

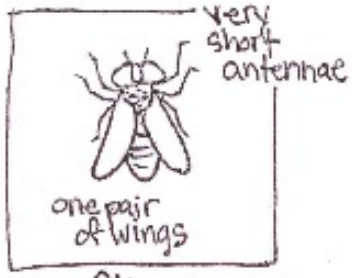
snail

insects - 6 LEGS

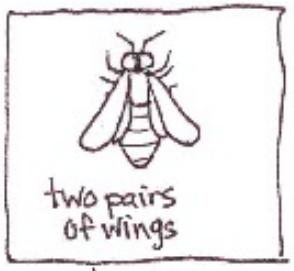
true bugs



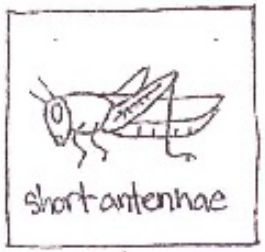
beetles



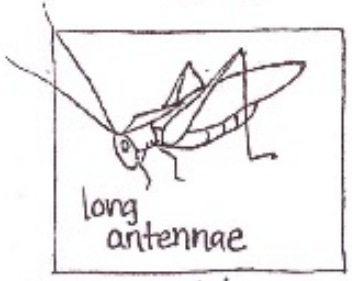
flies



bees

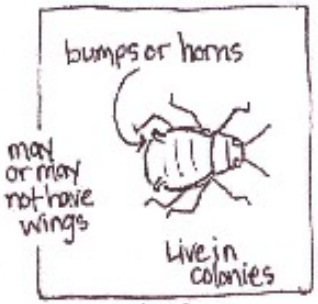


grasshoppers

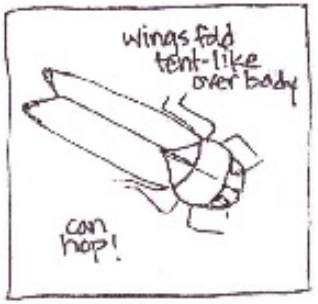


katydids

insects - 6 LEGS

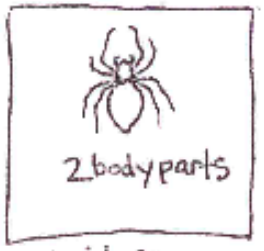


aphids

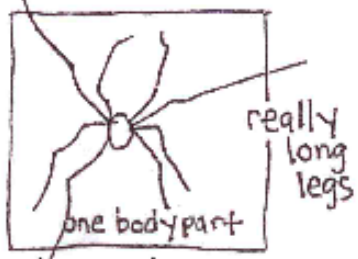


leaf hoppers

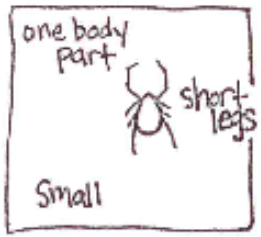
arachnids - 8 LEGS



Spiders



harvestmen



tick or mite

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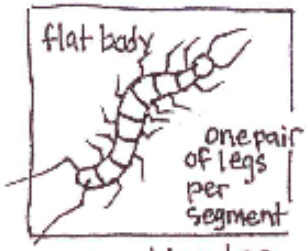
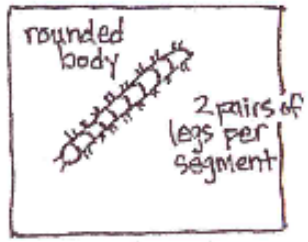
Millipedes · Centipedes · Isopods

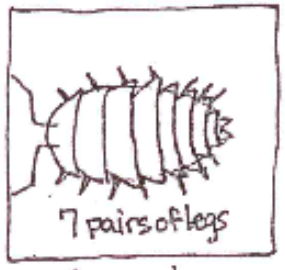
> 8 LEGS



centipedes



millipedes



isopods

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