

Backyard Insect Safari

Overview:

Insects are a vital part of our ecosystem. They pollinate plants, process waste, predate on agricultural pests (including other insects), produce useful compounds and materials including some foods, and inspire pharmaceutical and engineering solutions. This activity helps us appreciate that insects are all around us, and that each type of insect has its own unique features and capabilities. Look around and see what friendly insects are living near you!

Learning Objectives:

- Develop observation skills by finding, describing and identifying an insect from the local environment
- Appreciate the ubiquity, diversity, and importance of insects in every environment and ecosystem

Activity Materials:

Materials:

- Plastic, glass, or other see-through container with lid
- Drawing/writing implements such as crayons, markers, pens or pencils
- Blank or notebook paper

Optional materials:

- Butterfly/insect net (it is possible to make your own by stringing a pillowcase around a hoop of wire or an untwisted coathanger)
- Magnifying glass
- Insect guide
- Camera or phone camera
- Dish of sugar water or food crumbs
- Trowel or small shovel

Parent Notes:

There is a lot of flexibility to where and how you do this activity. Insects are all around us: in yards and parks, but also on sidewalk, driveways, plants in window boxes, flying through the air outside, and in every building, including every home (insects living in a home do not mean the home is dirty or unsafe.) If you would like to do this activity, it can be done in whatever space and manner will make it safe and convenient for you and your children. Feel free to adapt the insect hunt strategies as you would like as well.

Background:

There are an estimated 10 quintillion (!) individual insects living at any given time, comprising more than 1 million identified species so far. That's a lot of six-legged critters! If you include other arthropods like spiders, scorpions, crabs, and lobsters in your affection for invertebrates (animals without spines that keep their skeletons on the outsides of their bodies) that number of species goes up to an estimated 5 million or more.

With all of those different creatures running around, it's surprising how infrequently we may notice them in our daily lives. Yet there are some very good reasons for this. Most insects are very small, and many avoid predation by using coloration and behavior to blend into their backgrounds. Many hibernate or nest through the winter, and stay home on cold and rainy days. Some insects are only active at dusk or after dark. Some avoid open spaces, living in dirt, under rocks or decaying plant matter, or even in the walls and floor of your house. But if you look closely on a nice day, you'll often be able to spot them: a bee visiting a flower, a caterpillar munching a leaf, a fly buzzing around a window, a beetle lumbering through the grass or across the sidewalk. If you don't see them in the open, you may run across them in their hiding spots as you dig in the garden or peer into a crawl space.

This activity encourages you to explore your environment and, if you can do so safely, temporarily capture and observe an insect that shares your environment. You will create a record of your discovery, attempt to identify the type of insect you have found, and then release your new friend back into the ecosystem you share.

Procedure:

- 1) Get your equipment together. It will be helpful to have some paper and drawing utensils to draw your find and take notes. A clear-sided container will allow you to capture your insect without touching it with your bare hands and keep it in one place while you observe it for a short period of time; a relatively wide-mouthed jar, like an empty and washed peanut butter jar, would work well. If the insect will only be in the jar for a few minutes to a few hours, it will not breathe enough to use up all the oxygen, so don't worry about airholes. If you would like to use additional aids for insect discovery and capture (an insect net, a shovel, a flashlight, food for bait) or for observation (a magnifying glass, a camera, an insect guide).
- 2) Decide where you would like to look for insects—a yard, a park, your front walk, even inside your house.
- 3) Observe your chosen environment for a while. Sometimes finding an insect is easier than you think. Do you see anything creeping, crawling, strolling, or buzzing around?
- 4) If you can't see anything easily, look at what features in the environment might attract an insect. Are there moist, dark areas like soil under rocks or other objects? Are there any plants that might provide insects with food? Are there other types of food available? If it's relatively dark, is there a source of light?
- 5) Decide the best way to capture your insect without handling it directly. Most insects won't hurt people, but some may bite, sting, or cause rashes. Without knowing for sure what kind of insect you are catching, it is safest not to touch it. If the insect walks or crawls, you can try placing a sheet of paper in front of it and see if it will move onto the paper. Then, place your container over it, flip it over with the paper held to the top, and try to swap the paper for the lid. Alternatively, you can try placing the container over a walking or flying insect (if the insect has landed on a surface) and then scooting the container onto the paper, then replacing the lid with the paper.
- 6) Once your insect is captured, spend some time observing it.
 - i) What colors do you see on it?
 - ii) How big is it?
 - iii) How many legs do you see? How many wings do you see, if any?
 - iv) What is its general shape?
 - v) How many eyes do you see? How many antennae?
 - vi) Does it look hard or soft? Shiny or matte? Fuzzy or smooth?
 - vii) How does it move around? Fast or slow?
- 7) Record your observations. In addition to the questions above, where did you find the insect? What time was it? What was the insect doing when you caught it? What's the weather like, if you caught it outside?
- 8) What is your best guess about what the insect is? You can use a guide you have on hand, or this one available online: <https://www.insectidentification.org/bugfinder-start.asp>.
- 9) What questions do you have about your insect that you can't answer?
- 10) Remember to let your insect go once you are done observing and recording!

During/Follow-up Questions:

- Consider the type of insect you found. What does it eat? Do you think it does anything that is directly beneficial to humans? If not, what role do you think it plays in the ecosystem?
- Were there insects you wanted to catch but could not? What do you think they were? What interested you about them?
- How many insects do you think were in the environment you explored? Does that surprise you?
- Did watching your insect closely change the way you felt about it?