

Insect Collecting

You may have at some time caught an insect, or watched one closely to see what it did next. Where you were at the time (the environment) and what you used to catch it (the method) influenced the type of insect you observed and/or caught. There are many places to look for insects, and a variety of specialized techniques have been developed for collecting them. Most methods take advantage of insect instincts in one way or another. In this section, you can teach your group a variety of enjoyable ways to collect insects to study. Your JMG'ers can set a trap for insects, make an insect night-light, sweep up insects, or create their own insect farm.

Suck-A-Bug!

- Objectives:** To make a simple aspirator and use it to collect and observe small insects.
- Time:** 30 minutes to make the aspirator, plus 30 minutes to 1 hour to collect and observe insects.
- Materials:** Small plastic containers—clear if possible (film canisters are the perfect size, although usually opaque; you also can use small plastic herb bottles, small butter dishes or plastic test tubes), plastic drinking straws or flexible plastic tubing (tubing works better, but is a little more expensive), modeling clay, netting or gauze, tape, awl, ice pick or drill (for adult use).

There are many insects to see, and many ways to catch them so you can observe them. Nets work well for large insects, but tiny ones often go unnoticed. One way to catch these small ones is with a Bug Sucker, also called a pooter or an aspirator. Bug suckers are easy to make, but you will probably need to practice making and using one ahead of time before doing it with your gardeners.



Clean a small (preferably clear) plastic container and remove the label if it has one. Clear containers are handier because they allow the gardeners to observe the insect inside without opening the container. However, film canisters are the perfect size. (You can create a “window” in one by cutting out a section and replacing it with clear plastic, such as a piece from an overhead transparency. If you do this, make sure to seal the edges of the window with glue to keep air from entering. You will need good suction to be able to suck up a bug.)

Tape a piece of netting or gauze over one end of the drinking straw or tubing.



The netting or gauze is very important—don't forget it.

It keeps you from sucking the insect into your mouth



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Use the awl or ice pick to make two holes in the top of the container. (If possible, use a drill to make holes in the lids ahead of time.) Insert the straw or tubing through one of the holes so that the gauze end is down in the container and the uncovered end is sticking out of the top. Insert the other straw or tubing through the other hole. Finally, seal both holes with a bit of modeling clay, but be careful not to pinch off the tubing.

When you suck on the straw with the gauze on the end of it, you create a vacuum. Use this suction to capture small insects. Gently place the end of the straw without the gauze next to a small ant or other creature, and suck on the other straw. The suction will pull the insect into the container, where you can safely hold and observe it. It takes a little practice to be able to keep the straw next to the insect while sucking on the other end. This is why the flexible tubing is better: It can be longer and is more flexible. However, straws are inexpensive and easy to obtain. Children love practicing their bug-sucking technique, and usually spend quite a while working on it.



Do not use the bug sucker for large insects such as bees and butterflies. They can't fit up the tube, and the suction may damage their wings. (You don't want an angry bee that wouldn't fit up the tube flying around you!) Also, avoid using the bug sucker with "true bugs" (Order Hemiptera), such as stinkbugs; when sucked up a tube, they can spray irritating odors that leave a bad taste in your mouth.



It's a Small World

- Objectives:** To make a Berlese (burr-lay-z) funnel and use it to collect and observe insects living in the ground and soil.
- Time:** 30 minutes plus additional time later that day and the next for observing.
- Materials:** 2-liter soda bottle (1 per child or group), coarse screening or hardware cloth (different materials may be used, but they should have holes at least $\frac{1}{4}$ inch wide to allow insects to crawl through it), light with extension cord, place to hang light, bowl, soapy water.

Many insects live in the soil or the leaf litter just above the soil. Although we usually do not see many of these insects because they hide below ground, they can easily be collected using a Berlese funnel.

Show the gardeners how to make a funnel out of a 2-liter soda bottle by cutting the bottle in half. Turn the top part over to make a funnel. If you cut the bottom from the remaining portion of the bottle, you can use the resulting cylinder as a holder for the funnel to keep it from falling over. Have the gardeners place a piece of coarse screening or hardware cloth around the outside of the