

# Catch & Release Insect Collecting

## OBJECTIVE:

After completing this activity, participants will:

- Know how to use a net to collect insects.
- Know where to look for insects.
- Understand how to observe insects.

## LEARNING & LIFE

### SKILLS:

- Observing
- Gathering information
- Keeping records

### MATERIALS:

- Insect collecting net
- Plastic or glass jar with lid
- Notepad or notebook paper
- Pencil or pen
- "Insect Orders" sheet
- Hammer (optional)
- Small nail (optional)

### AUDIENCE:

Ages 5 to 19

### TIME:

15 minutes and up

### SETTING:

Usually outdoors in a variety of settings

## BACKGROUND INFORMATION:

All you really need to start observing and learning about insects is a net, a jar, and paper and pencil.

This activity will help you practice "catch and release" insect collecting (that is, catching and observing an insect up close for a while, then letting it go). Remember to punch air holes in the top of your collecting jar and don't keep the insect captive for more than a couple of hours. If you want to put together an insect collection, you'll need more time and equipment than in "catch and release" collecting. See "Starting My Insect Collection" for information on how to do that.

Whether you're catching and releasing insects or catching and collecting them, be sure to use extra care when catching insects that sting!

### Common places to find insects

Insects inhabit every place on our planet except the ocean. Look for insects in these places:

- Under boards and rocks – Look for ants, crickets, beetles, termites.
- In or around streams, ponds, lakes – Look for mayflies, dragonflies, damselflies, stoneflies, caddisflies, aquatic beetles, true bugs, flies.
- Under loose bark, in logs and stumps – Look for termites, ants and beetles — particularly bark beetles, tiger beetles, wood boring beetles.
- On crops – Look for grasshoppers, beetles, flies, aphids, leafhoppers, spittlebugs, plant bugs.
- In the air – Look for butterflies, moths, flies, bees, wasps, beetles, leafhoppers, grasshoppers.
- In cellars and basements – Look for crickets, beetles, ants, bristletails.
- On livestock, pets, poultry – Look for fleas, sucking lice, chewing lice, flies.
- Around outdoor lights at night – Look for moths, beetles, true bugs, mosquitoes.
- Around dumps or piles of refuse – Look for cockroaches, earwigs, beetles, flies.
- On manure piles – Look for flies, beetles.
- In, around or on flowers and ornamental plants – Look for thrips, plant bugs, beetles, bees, wasps, ants, aphids, scale insects, walking sticks, insects galls, butterflies, moths.
- In houses – Look for crickets, cockroaches, beetles, ants, flies, mosquitoes, moths, termites, silverfish.
- In clothes, furniture, stored food – Look for clothes moths, carpet beetles, flour beetles, bean weevils.

## PROCEDURE:

1. Gather the supplies you'll need for this activity, including an insect net and collecting jar, paper and pencil or pen, and a copy of the "Insect Orders" sheet.



2. If you're going to observe the insects in the collecting jar for more than a few minutes, use a hammer and nail to punch a few small air holes in the lid of your collecting jar.
3. Review the "Common Places to Find Insects" list and decide where you're going to start searching for insects.
4. Use your insect net to capture one or more insects, then transfer the insect to the collecting jar. Remember to use extra caution if you have caught a stinging insect.
5. Now find a comfortable location where you can sit and watch the insect for a while. Label the top of a sheet of paper with your name, the date and time, and information about where you caught the insect (such as under a log, in a sack of flour or on a stream bank).
6. Next, double check to make sure that what you've caught really is an insect by looking for:
  - Six legs (If it has eight legs, you may have caught a spider. If it has even more than eight legs, you may have a millipede or centipede. They're called "arthropods.")
  - Three body segments (the head, the thorax or midsection, and the abdomen or back end)

Record your observations in your notebook.

7. After you've determined whether the creature you've captured is an insect, you can also look for other characteristics. Look closely at the insect for the answers to these questions. Write your observations in your notebook.
  - Does the insect have wings?
  - What type of antennae does it have?
  - What do its mouth parts look like? (Different insects' mouths are shaped to do different jobs. For example, a butterfly's mouth is called a "proboscis" and is designed to suck nectar from flowers.)
  - What kind of legs does it have? (For example, flies have short, hairy legs with suction cups on the ends so they can cling to horizontal surfaces such as trees and walls, and to the underside of horizontal surfaces such as ceilings. Grasshopper legs are designed for jumping. Bee legs are hairy so flower pollen will stick to the hairs and they can carry it back to the hive. If you've caught a bee, you may even be able to see bits of pollen sticking to its legs.)
8. After you've observed the insect and answered your own questions about it, gently tip your collecting jar on its side and remove the lid. The insect should crawl or fly out of the jar.

## THINKING IT OVER:

Now that you're done observing the insect, think about and perhaps write down the answers to these questions:

- Did you have any problems finding or catching the insect?
- Was it easy or hard to use the net to catch an insect? What other method could you use to catch insects?
- Was the insect that you caught alone or in a group of insects?
- What specialized characteristics or features did the body of the insect you caught have? What might the insect use those features for?
- What other information do you want to learn about insects?
- Who can you talk to or where can you look to find out more about insects?

## TRY THIS, TOO:

- Use the "Insect Orders" sheet to help decide which order the insect you're observing might fall into. Record your choice in your notebook.
- Share your observations with your 4-H club, another family member or your class.



## Insect Orders

"Scientific classification" is the system scientists use to describe, categorize and name living things. They use the classification system to help make sure they don't get confused about what plant or animal they're talking about. From broadest to most specific, the groups in scientific classification are kingdom, phylum, class, order, family, genus, species. Entomologists, or scientists who study insects, commonly focus on insect orders when describing groups of insects. The more common insect orders are listed on this sheet. Those listed in bold contain 90 percent of all insects.

The order names are usually combinations of Latin words. This chart gives the order name, the translation of its Latin name, and common examples of insects in the order. For example, *Coleoptera* is translated as "sheath wing," from the Latin word *Coleos*, which means "sheath" and *ptera*, which means "wing." The common name for members of this order is "beetle."

Order Name	Translation	Common Name or Common Examples
<b>Lepidoptera</b>	scale wing	moths, butterflies and skippers
<b>Diptera</b>	two wings	flies
<b>Orthoptera</b>	straight wing	grasshoppers, crickets, katydids, roaches, mantids and walking sticks
<b>Odonata</b>	toothed	dragonflies and damselflies
<b>Coleoptera</b>	sheath wings	beetles
<b>Hemiptera</b>	half wing	true bugs
<b>Homoptera</b>	same wing	aphids, leafhoppers, cicadas, whiteflies, mealybugs and scale insects
<b>Hymenoptera</b>	membrane wings	bees, wasps, sawflies, ants
Dermaptera	skin wing	earwigs
Ephemeroidea (or Ephemeroptera)	lasting but a day (short-lived wings)	mayflies
Mecoptera	long wings	scorpionflies and hangflies
Neuroptera	nerve wing	lacewings, ant lions and dobsonflies
Trichoptera	hair wing	caddisflies
Plecoptera	pleated wings	stoneflies
Thysanura	bristle tail	silverfish and firebrats
Isoptera	equal wing	termites
Mallophaga	wool eating	chewing lice
Anoplura	unarmed tail	sucking lice
Psocoptera	minute wing	book and bark lice
Thysanoptera	bristle wing	thrips
Collembola	glue peg	springtails
Siphonaptera	tube without wings	fleas