

A Kid's Guide to Backyard Critters

If you know where to look, your own backyard is as fascinating as a zoo. Dark, damp compost piles and damp leaf litter are interesting places in which to observe all the critters living there.



Single Dad Laughing
Dan Pearce

Equipment:

- Hand trowel or spoon for careful digging
- Hand-lens for close observation
- Viewing containers (After observing, release the organisms where you found them.)

How to find things

The secret is in moving slowly. When you move things aside, stop and watch. You will see the fast critters right away, but some won't move at all and then will slowly show themselves. Patience is the key.

What is it?

It's not as important to know the name as it is to know the organism. Biologists depend on close observation. Observation leads to important questions that can be studied.

Think like a scientist!

Questions can be answered by careful observation.

- What is it doing?
- What is it eating? How does it eat?
- Does it live in the dark?
- How does it see?
- How does it move? Are there legs? How many?
- Does it move slowly? Quickly?
- How does it protect itself?
- What makes this a good place for it to live?

What have you learned about your critter just by watching closely?

What did you find?

We name organisms in order to share information with each other.

- Kids have “**made-up names**” that they share with other kids.
- **Common names** are the names that are most commonly used.
- **Scientific names** are recognized by scientists all over the world.

“Pincher bug”

Earwig

Forficula auricularia

You are sure to notice the forceps or pincers on the earwig's back end. The pincers are used in capturing prey and mating. Earwigs are **omnivorous**—they eat a lot of different things. They will eat live or dead insects as well as live or decaying vegetation.



Eddie Dunbar

Earwigs range from 10 to 25 mm in length and are brown to black in color. They are

nocturnal—active at night. During the day they can be found in moist shady places, under wood piles, stones, boards, flower pots, compost piles, flower beds, or other secluded locations.

The name “earwig” comes from the superstition that an earwig will crawl into the ear of a sleeping person and bore into the brain. Although earwigs look dangerous because of their forceps, they are practically harmless to people and of value as predators of certain insect pests.

10 millimeters (mm) |——|

Which one of your fingers is about ten millimeters wide?



“Roly Poly”

Common Pillbug

Armadillidium vulgare



These are terrestrial (land-living) crustaceans in the group known as “isopods.” Isopods have a rigid, segmented, hard exoskeleton and jointed legs.

Pillbugs are usually nocturnal and feed on dead plant matter, recycling the nutrients back into the soil. You can find them during the day hiding in damp, dark places, such as under rocks and logs.

You may find some that are grey, brown, or dark brown, 1 to 15 mm in length. The size will vary depending on the age of the pillbug. If your pillbug won't roll up, you've found a “wood louse,” which is another isopod.

As the pillbug grows, it must molt—shed its shell-like exoskeleton. Unlike most arthropods (insects, spiders, roly polies), the pillbug sheds its exoskeleton in two parts rather than one. You may find a pillbug with part of a cloudy exoskeleton still clinging to its body.

A female pillbug will keep fertilized eggs in a brood pouch on the underside of her body until they hatch into small, pink offspring. The female then appears to “give birth” to her offspring. Check the abdomen on every pillbug you find.

Thin and leggy: Millipedes and centipedes

Count the legs on each segment: If there are four legs per segment (two on each side), you've found a millipede; if there are two legs per segment (one on each side), you've found a centipede.

“Millipede or Centipede”

Greenhouse Millipede

Oxidus gracilis



You have to have good eyes to find this tiny creature. This thin, tiny millipede (5 to 20 mm) is usually grayish tan. These millipedes move slowly, eating dead and decaying plant matter in the soil.

You'll need a hand lens to see the legs. How many legs? Each body segment has four legs, so if the millipede has 30 body segments, how many legs will it have?

The Greenhouse Millipede is thought to be a native of Asia, but is found throughout the world in tropical and temperate regions. If it comes from Asia, how do you think it got here?

“Millipede or Centipede”

Centipede

Scolopendra species

If your segmented critter has lots of legs, but only one leg on each side of a segment, it's a centipede. You have to be fast to catch a centipede because these predators move quickly. They are found in damp soil and leaf litter, under stones and deadwood, and inside logs. You



might find one of two kinds (species). One is only about 30 mm in length. The other is LONG, maybe as much as 80 to 90 mm and thinner. Both types normally have a drab coloration combining shades of brown and red.



“Stink Bugs”

Beetles

Elodes species

If your beetle can't fly away, you have a Darkling Beetle. It walks everywhere it goes!



Darkling Ground Beetle



Ironclad Beetle



Woolly Ground Beetle

How do you think they got their common names?



Darkling Beetles are usually shiny black but may be bumpy or hairy as well. The adult beetles are 25 to 30 mm in length.

Look for fused wing covers meeting in a straight line at the center of the back. That tells you it is a beetle.

These active insects with their long legs, big eyes, and strong jaws are active mostly at night. They feed on organic litter, but welcome vegetable scraps like carrots or zucchini.

If you find an Ironclad Beetle, you will think it is dead. This amazing beetle plays dead very convincingly. Leave it alone for a while and see what happens. How would “playing dead” be useful to an animal? Does its appearance contribute to the trick? Can you think of any mammals that use the same strategy for survival?

“Worms”

Earthworms

Annelida species



No arms, no legs, no eyes? Earthworms belong to a group called “segmented worms.” Which end is which? Look for the thicker area near one end. This rubbery looking band is called the clitellum. You’ve

found the mouth end.

Look closely between the clitellum and the mouth and see if you can see five tiny red lines. These are earthworm hearts.

Earthworms are very important to the health of soil. They eat dead and decaying plant matter and excrete all the nutrients that were once locked up in the dead plant. Earthworm poop is called “worm gold.” Growing plants depend on these nutrients being available and we all depend on plants for food!

Are all the earthworms you find the same color? The same length?

Vertebrates and Invertebrates

So far, everything we’ve found has been an invertebrate, an animal without a backbone. You are a vertebrate, an animal with a backbone. The bones in your spinal column (down the center of your back) are called vertebrae.

Let’s look at some small vertebrates you might find in your backyard.

“Salamander”

Black-bellied Slender Salamander

Batrachoseps nigriventris

These are “lungless” salamanders—they breathe



through their skin. The young resemble adults but are smaller. Slender Salamanders do not migrate; their entire home range may be a patch about 12 feet in diameter so be sure to release your salamander exactly where you found it. Their primary foods are slugs and millipedes.

Handle these delicate creatures gently. Put one on a damp cloth and examine it under a good hand lens. Count the toes—there should be four toes on each foot. They have cute little froggy eyes and faces.

Birds hunt for salamanders in leaf litter. If a bird catches the salamander by the tail, the tail breaks off and continues to wiggle for a long time. Meanwhile, the salamander slinks away to live another day and grow a new tail.

There may be as many as 20 species of Slender Salamanders from Oregon to Mexico.



“Blue-belly”

Western Fence Lizard *Sceloporus occidentalis*



The bright blue patches along the sides of the body of the male give this lizard the name “blue-belly.” Male Western Fence Lizards have bright blue or greenish bellies and the undersides of their legs are yellow. Females do not have this decorative coloring. How would you describe the shape of the scales on the lizard’s back?

This lizard enjoys sitting in sunny spots, like fence posts, where it can soak up the warmth of the sun and watch for food and predators. Like many species of lizards, this one can change its coloration to match its background. Light colored lizards placed on dark rocks become a darker color.

Its diet consists of insects and various other small arthropods. Unfortunately, its love of high places makes it easy prey for snakes, hawks, and some mammals. To survive, the Western Fence Lizard must stay on watch and be ready to run in a instant.

Mating occurs in early spring. The female may lay as many as 14 eggs at a time May to July, producing hatchlings as early as mid-August. Upon hatching, the babies are tiny and fast.

“Tree frog”

Pacific Chorus Frog *Pseudacris regilla*



This tiny frog makes its home in riparian (near fresh water) habitats. In urban areas, the frog can be found near backyard ponds. Note the dark stripe through the eye. Chorus frogs vary in color from bright green to brown to gold to beige, but they all have the dark eye stripe. They can change color quickly to blend into their habitat.

In early winter to early spring, males migrate to water. They call very loudly and often to lure females to the water to mate. This “chorus of song” gives them their common name.

Females usually lay their eggs in shallow, calm water. If the eggs are not eaten, embryos will hatch into tadpoles within one to three weeks.

The tadpoles feed on algae and pollen that falls on the surface of the water. Their mouths have a beak-like structure to scrape vegetation off surfaces as they suck it up.

In about 8 to 10 weeks, tadpoles become frogs in a process called **metamorphosis**. The tadpoles stop feeding in the last stage of metamorphosis while their mouth is transformed from **herbivorous** (plant-eating) to **carnivorous** (meat-eating). The next meal will be bugs!

When the tiny new frogs emerge from the pond, they are about the size of your thumbnail. The sticky pads on their feet allow them to climb on vegetation and other surfaces hunting for spiders, beetles, flies, ants, and other insects during the night.

The tree frog has many predators, including snakes, raccoons, herons, egrets, and some small mammals and reptiles. Although mostly nocturnal, you can find them hiding under rotten logs, rocks, long grasses, and leaf litter during the day.



“Toad”

Western Toad

Bufo boreas



Adult Western Toads have short legs with stocky bodies. They tend to walk instead of hop. Their thick skin appears dry and bumpy and can range in color from pale green to grey, dark brown, and red. They typically have pale-colored bellies mottled with black and a pale-colored stripe down their backs.

Adults range from 5.5 to 14.5 centimeters in body length, not counting the hind legs. Females are larger than males with rougher skin.

Western Toads may roam far from standing water, but they prefer damp conditions and spend much of their time underground.

They feed on a wide variety of insects and invertebrates. Most of their adult diet consists of flying insects, ants, beetles, sowbugs, crayfish, spiders, centipedes, slugs, and earthworms.

What eats toads? Western Toad tadpoles are vulnerable to birds and fish and adult toads are taken by birds, mammals, and even other amphibians.

Keeping a toad in your garden is a good way to control harmful insects. Make a toad house and see if you can attract your own Western Toad.

Build a Toad Abode

In early spring, the toads will be looking for a place to live. Once they have chosen where they want to live, they will stay.

Toad House #1

Find an 8” diameter clay flowerpot with a saucer. Now find a damp, shady place under a shrub or bush. If it is near a dripping faucet, you’ll have the water source the toad needs. If water is not nearby, give your toad a saucer of water for its daily soak. You’ll have to keep the saucer filled and clean. Change the water frequently.

Turn the flowerpot upside down. Prop up one side with a rock leaving an opening for a large toad.

Toad House #2

Find a damp, shady spot. Dig a hole about five inches deep and cover most of the hole with a large, flat stone. Leave an opening large enough for a fat toad to get inside. If there is no water nearby, leave a saucer of water for the toad’s daily soak.

Special thanks to the following for use of their images:

Eddie Dunbar

Gary Nafis

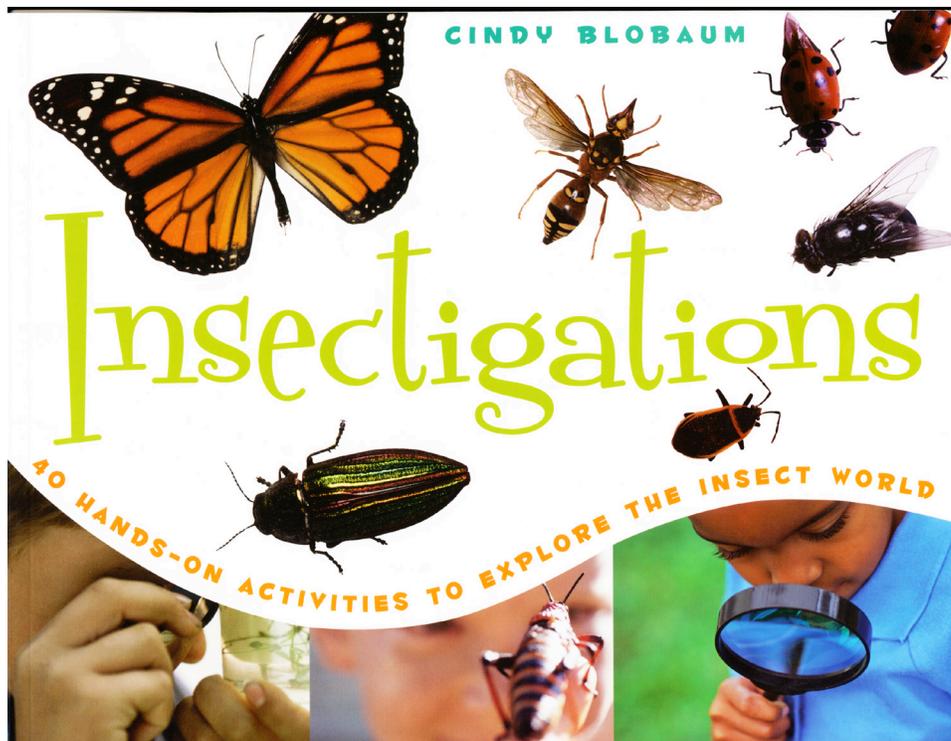
Donley Olson

Resource

We highly recommend *Insectigations* by Cindy Blobaum. Ms. Blobaum gave permission to share some of her insect-catching techniques with you.



Make-it-yourself Equipment
for Studying Insects
from



Insectigations by Cindy Blobaum
(with permission)

Looking Jar

Insect cages come in all sorts of shapes and sizes and are made from a wide variety of materials. While netting is good for airflow, it makes it hard to see the small details on insects. If you want to observe an insect for a short time, a clear, plastic container is your best bet.

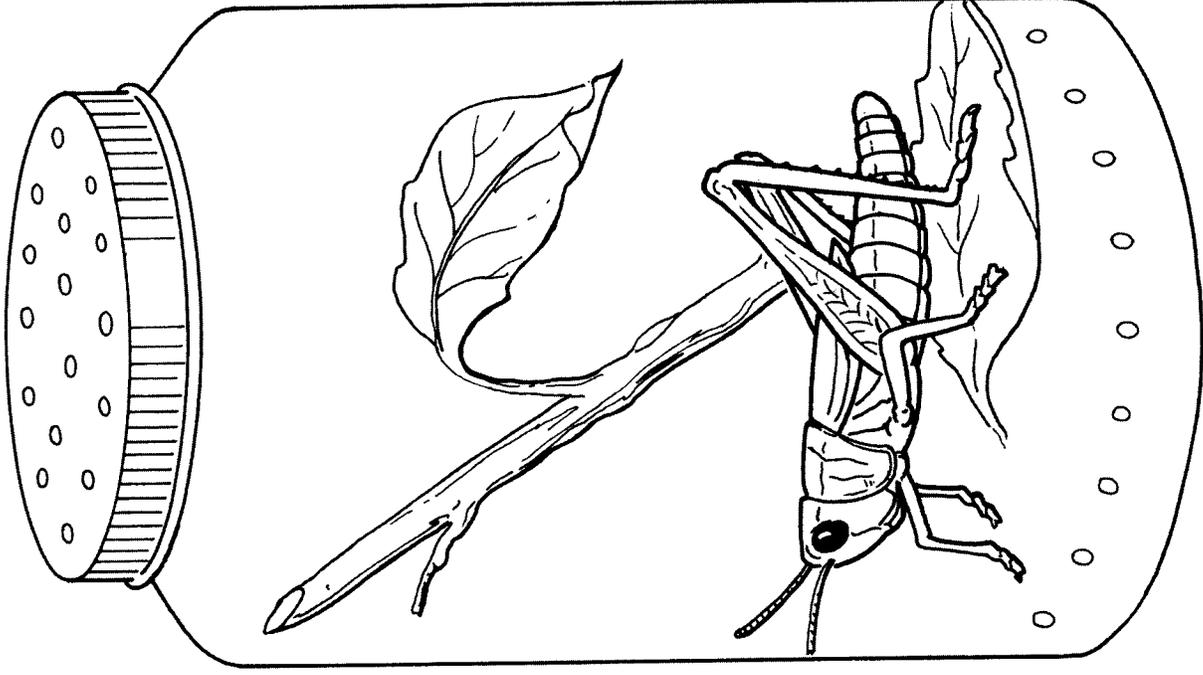
Materials

A large, clear, plastic jar with a lid (large peanut butter containers work well)
Drill with very small bit (or a barbecue fork)

Insects need air to breathe, just like every other animal. To make your looking jar ready for temporary insect visitors, you need to make plenty of air holes.

However, many of the plastics used today are brittle and will split if you try to punch holes in them. With the help of an adult, you can either drill very small holes in the lid and near the bottom edge of the jar or heat the tip of the barbecue fork over a flame and melt small holes in the lid and near the bottom edge of the jar.

The larger the mouth of the jar, the easier it will be to put insects in. After you have watched your insects and made notes and sketches in your journal, turn the jar on its side and open the lid. Don't shake the jar to get the insects out, just wait a few minutes and they will be gone.



Insect Trap

Materials

Scissors

1 2-liter bottle

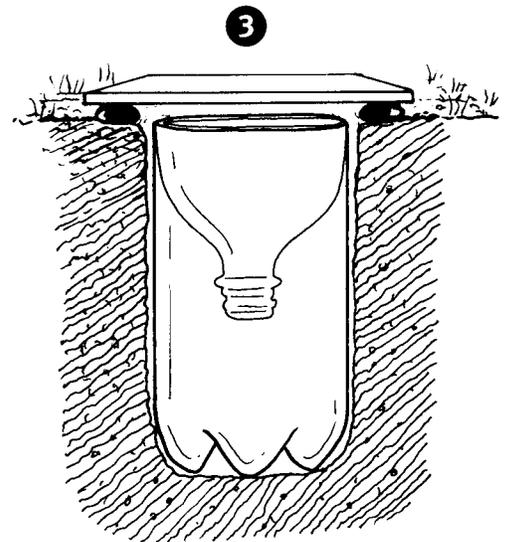
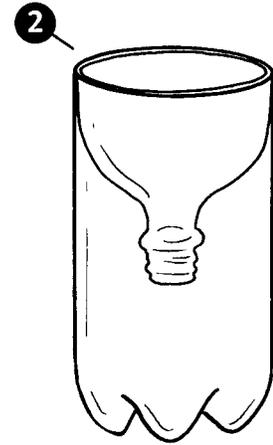
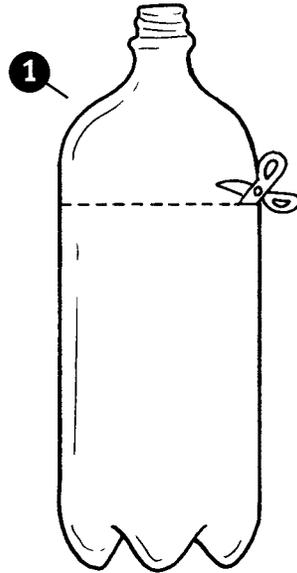
Bait (raw meat the size of a meatball)

Small garden trowel

Four small, flat rocks

Board that is about 5 inches (13 cm) square

Cut off the top third of the bottle, making a funnel shape. Place the bait in the bottom piece of the bottle. Nest the funnel piece top upside down inside the bottle bottom. Use the trowel to dig a hole deep enough so that the top of the bottle will be even with the ground. (Check with an adult before digging.) The slick sides and funnel will keep many of the creatures that fall into the trap stuck inside. Place the rocks around the edge of the bottle, and place the board on top of the rocks. This will



leave enough room for insects to investigate the smell, but keep rain and heavy dew out of the trap. Check on the trap every morning and again every evening. Do you trap more insects during the day or night?

Leaf Litter Shaker

Springtails, scavenger beetles, jumping ground bugs, and other arthropods eat dead leaves and plants. Unless you put a trap right under them, you might not find these decomposers. To find them, you need to shake them out.

Materials

- Plastic ice cream tub with lid
- Thick rag
- Pencil
- Dead leaves
- Light-colored sheet

Place the lid of the ice cream tub on the thick rag. Use the pencil to punch large holes in the lid. Fill the tub with clumps of dead leaves that are brown and crumbly, then put the lid on tightly. Hold the tub upside down over a light-colored sheet and shake it. In your journal, record which insects fall onto the sheet, sketch the different types, and include a total count.

