

Bug Hunt

As long as it's warm enough, you can find snails, spiders, ants and other bugs. A Bug Hunt is a great way to learn about the animals near you.



What Are You Looking For?

We tend to use the term “bug” for any small, insect-like critter. Technically speaking, a bug is a type of insect, and in your hunt you will be finding much more than bugs. In fact, you’ll likely find much more than insects too.

Don’t let the terminology and the classification bog you down. It’s good to know how things are classified, but it’s just as important to go outside and observe.

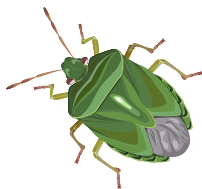
What is an insect? Breaking Down the Classifications.

Just about everything that you find will be an **invertebrate**. An invertebrate is an animal without a backbone.

If you find an invertebrate with a hard skin, then you’re likely looking at an **arthropod**. An arthropod is an animal with a hard shell skin, and jointed legs.

Arthropods include insects, spiders, centipedes, pill bugs, and millipedes. For an arthropod to be an **insect** it has to have:

- three main body parts – a head, a thorax and an abdomen.
- six legs
- antenna
- wings (in an adult insect)



There are a myriad of insects. A **bug** is just one of many kinds of insects. A true bug is a type of insect in the order **Hemiptera**. True bugs include cicadas, leaf hoppers, and stink bugs.

About This Activity

Grades: **pre K and up**

Activity Level: **Medium**

Materials: (optional) **Small Containers** for temporarily collecting bugs; **Magnifiers**

Common “Bugs”		
What is it?	Is it an arthropod?	Is it an insect?
Worm	No	No
Pill Bug	Yes	No
Spider	Yes	No
Slug or Snail	No	No
Millipede	Yes	No
Ant	Yes	Yes
Beetle	Yes	Yes
Caterpillar	Yes	Yes
Bee	Yes	Yes
Daddy Long Legs	Yes	No

Finding and Handling Bugs and Other Small Critters

So now you know you're going to find far more than just bugs. You'll be finding worms, pill bugs, ants, bees, and much, much more.

Where to look?

You can find "bugs" just about everywhere, but you'll have your best success looking:

- Under rocks and logs
- Among flowers and plant stems
- Among tree branches.

When you flip over a rock or a log, be mindful of hands, feet, and people around you. Remind students to ask for help if they need it. Also remember to gently place the rock or log back when you are done searching.

Being Kind to Bugs.

Remind students to be respectful and kind to the bugs that they find. That means handling their bugs gently and limiting the time that they are being held to 10 seconds or less. It also means gently putting them back where they were found

Overcoming the "Ick"

It's perfectly normal to be grossed out or even afraid of "bugs". If students are expressing fear or discomfort, hear them out and explain that bugs can be scary, but they do not want to hurt us.

While you may not be a fan of all bugs, it's important to appreciate and respect them. Modeling respect and a sense of wonder will show your students that even though an animal can seem "creepy" that doesn't mean it's a "bad" animal.



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Digging Deeper

Once you start finding insects and other invertebrates, you've opened the possibility for a number of other new explorations and lessons.

Life Cycle and Metamorphosis: Insects have a unique life cycle with distinct stages. We're most familiar with the 4 stage **complete life cycle** of butterflies, beetles and flies.

Unique Adaptations: Insects and other invertebrates have evolved numerous curious and unique adaptations to help them survive in their ecosystem. From the perfect camouflage of a stick bug, to the rolling up behavior of a pill bug, each animal you find can tell a new and unique adaptation story.

Importance in Ecosystems: In an ecosystem, every living and non-living thing affects everything else in the ecosystem. Sometimes insects "bug" us, but they do far more good than harm. Insects are one of the major building blocks of most ecosystems, and those ecosystems would collapse without insects.

A Word About Bees

In our experience, bees can create intense fear responses in students. What's worse, many young people react by swinging at the bee, which only serves to make the bee defensive.



Here's our advice for how to act around bees:

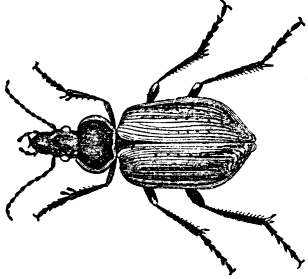
- Remain calm and take deep breaths.
- Close your eyes and wait 10 seconds
- Open your eyes and walk away or GENTLY wipe hand back and forth to shoo the bee away

Bees are just looking for food. Once they realize you don't have any, they'll fly away.

Who lives in a Compost Pile?

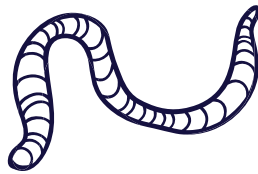
Ground Beetles

Ground Beetles eat bugs like slugs and worms. Compost piles are their favorite buffets!



Earth Worms

Earth Worms create tunnels that allow air to flow through a compost pile.



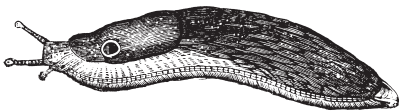
Millipedes

Millipedes love to eat decaying plant matter. They help break down plants in a compost pile.



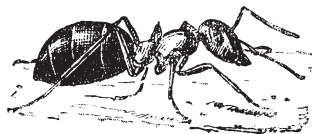
Slugs

Slugs are decomposers. They love to eat organic materials that are newly added to a compost pile.



Ants

Ants help things decompose by breaking materials into smaller particles. They create tunnels and move soil into clumps.



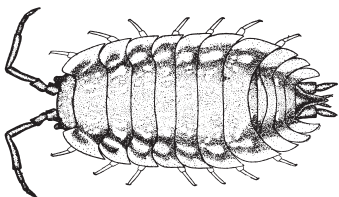
Fruit Flies

Fruit flies eat food left on top of a compost pile. They like to lay their eggs in places that are warm and moist- like compost piles!



Pill Bugs

Pill bugs aren't bugs at all! They are isopods and have ten pairs of legs. They eat old leaves and veggie scraps.



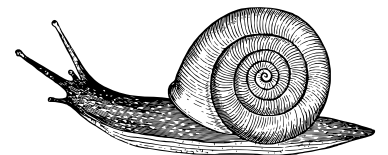
Spiders

Spiders feed on other insects that live in a compost pile. They are excellent garden pest control!

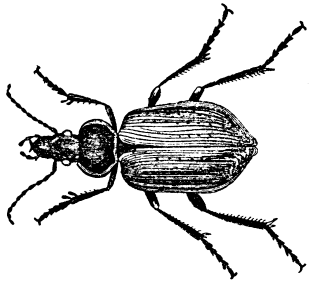


Snails

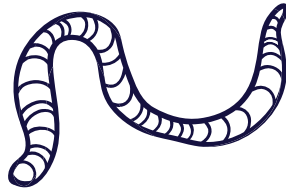
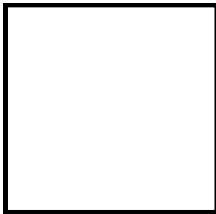
Snails are gastropods. Like slugs, snails like to eat fresh materials newly added to a compost pile.



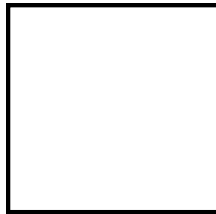
Compost Pile Scavenger Hunt



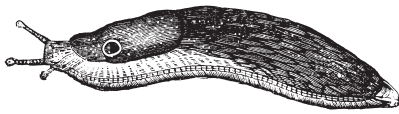
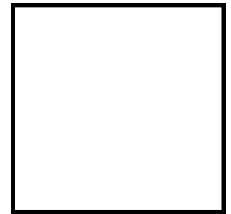
Ground Beetle



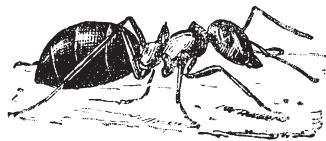
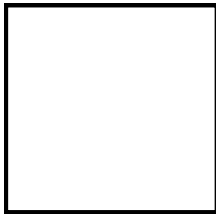
Worm



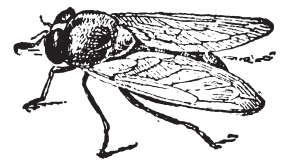
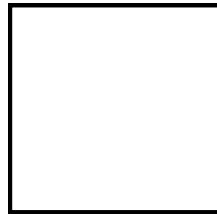
Millipede



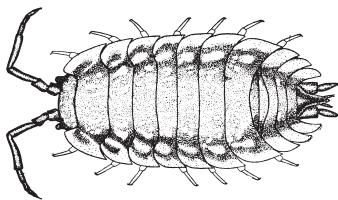
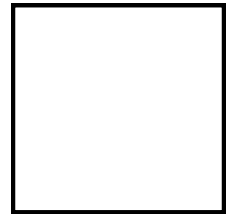
Slug



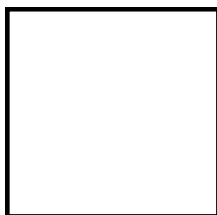
Ant



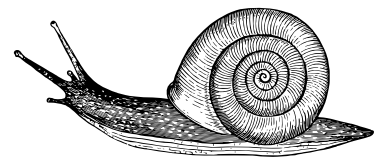
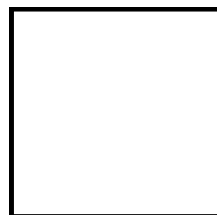
Fly



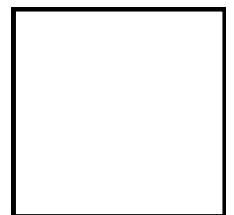
Pillbug



Spider



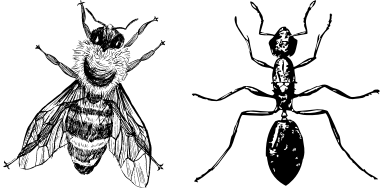
Snail



Insect

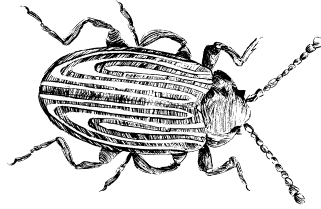
An insect has three main body parts (head, thorax, abdomen), 6 legs, two antennae, compound eyes, and most have wings.

Ants, Bees and Wasps (Hymenoptera)



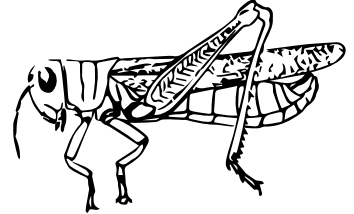
Narrow Waist. Often live in colonies.

Beetles (Coleoptera)



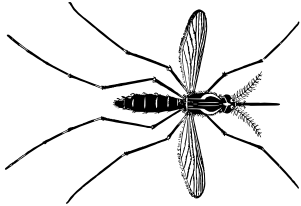
Two sets of wings. The outer set acts like a shell protecting the inner set.

Grasshopper and Crickets (Orthoptera)



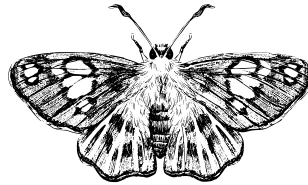
Big hind legs, great for jumping.

Flies and Mosquitos (Diptera)



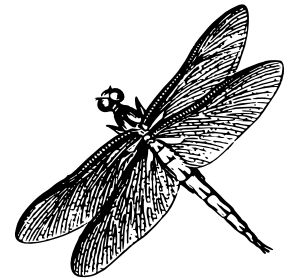
Just two sets of wings.

Butterflies and Moths (Lepidoptera)



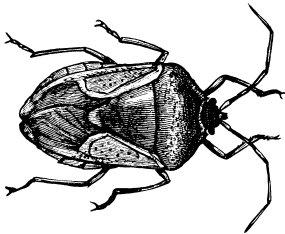
Usually colorful. Long tongue that acts like a straw to suck up nectar.

Dragonflies (Odonata)



Usually found near water.

True Bugs (Hemiptera)



Includes bugs like stink bugs and assassin bugs. The wings make the shape on an "X".

Other

Describe any insects that you couldn't identify here.

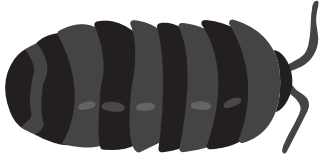
Other

Describe any insects that you couldn't identify here.

Not Insects

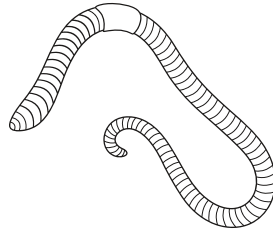
*These invertebrates are often confused for insects but are NOT insects.
They don't have 3 body parts, or 6 legs, or antennae.*

Pillbugs and Sowbugs (Isopoda)



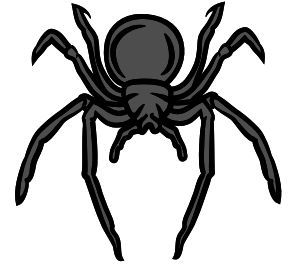
Found under logs, some can roll up to protect themselves.

Earthworms (Annelidae)



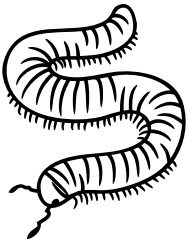
Look for the rings on their bodies.

Spiders (Arachnidae)



8 legs and two main body parts.

Millipedes (Diplopoda)



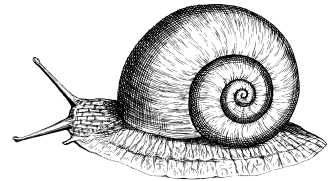
Lots of little legs under the body. Sometimes roll up to protect themselves.

Centipedes (Chilopoda)



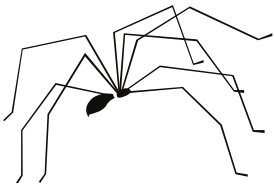
They look like millipedes but they have fewer legs and the legs stick out more to the sides.

Snails and Slugs (Gastropods)



Snails have shells and slugs do not. Look for the "slime" trail that they use to travel.

Daddy Long Legs (Opiliones)



They look like spiders, but with really long skinny legs and only one main body part.

Other

Describe any non-insects that you couldn't identify here.

Other

Describe any non-insects that you couldn't identify here.



Head Thorax Abdomen Song

This is a perfect fun song for remembering the parts of an insect.

(Sung to the tune of Head Shoulders Knees and Toes)

Head (point to head)

Thorax (point to chest)

Abdomen (point to stomach)

Abdomen (point to stomach)

(repeat 1x)

Six legs (make legs with fingers, sticking out the side of the torso)

Two antennae (make two antennae with fingers)

and compound eyes (cup hands around eyes)

Don't forget the ones with wings, ones with wings (make wings with arms and fly around)

Note: Depending on the group, it can be fun to sing this through multiple times changing the pace to either super fast or super slow. Another variation is to invite students to pretend to be specific insects – butterfly, moth, ant, bee, wasp, fly, dragonfly, etc. This variation also allows you to review what is and is not an insect as some of the student's suggestions will probably not be insects.

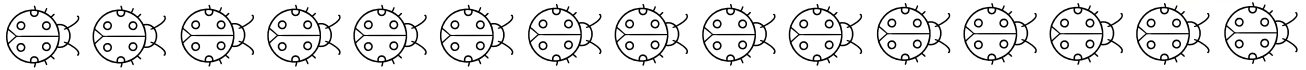
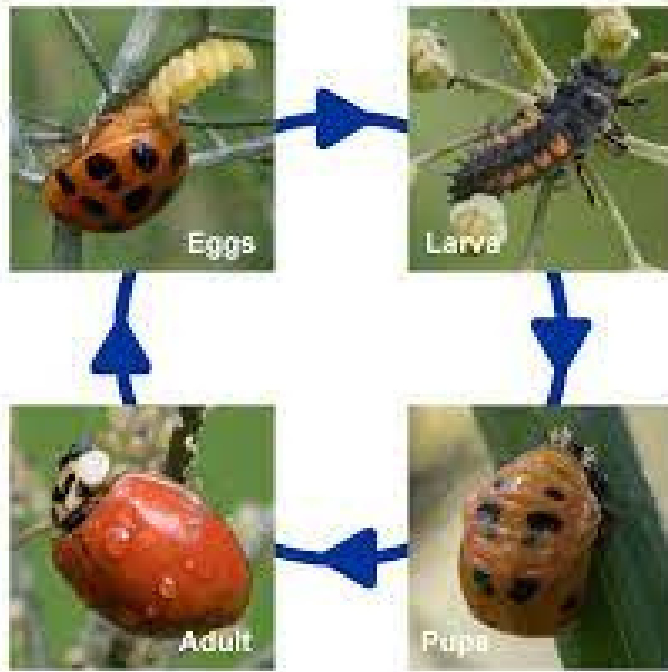


Lady Bug Life Cycle

Ladybugs, like all insects, undergo metamorphosis.

Ladybugs undergo **Complete Metamorphosis** which consists of 4 distinct stages.

Butterflies, beetles, bees, ants and flies all undergo complete metamorphosis.



After a female lays her **eggs**, they will hatch in between three and ten days



The **larva** will live and grow for about a month



The larva will then enter the **pupal stage**, which lasts about 15 days.



After the pupal stage, the **adult** ladybug will mate and lay eggs, starting the cycle all over again!

